5.4 AIR QUALITY

This section describes existing air quality conditions of the Project site and surrounding region and evaluates the potential impacts to air quality due to the Project.

It is noted that, as recently confirmed by the California Supreme Court, impacts of the environment on a project (as opposed to impacts of a project on the environment) are beyond the scope of required CEQA review. (California Building Industry Assn. v. Bay Area Air Quality Management Dist. (2015) 62 Cal.4th 369, 392.) "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." (Ballona Wetlands Land Trust v. City of Los Angeles (2011) 201 Cal. App. 4th 455, 473.)

The impacts discussion in this section related to the existing air quality are effects on the Project of pre-existing environmental hazards or conditions, and therefore "do not relate to environmental impacts under CEQA and cannot support an argument that the effects of the environment on the project must be analyzed in and EIR." Ballona, supra, 201 Cal. App. 4th at p. 475.) Nonetheless, an analysis of these impacts is provided for informational purposes and full disclosure.

This EIR tiers from the Previous Environmental Review Documents, as described in Chapter 2.0, *Introduction*. Section 5.5, *Air Quality*, of the 2013 SEIR analyzed the existing conditions, potential impacts, and mitigation measures related to the proposed land uses for the GDA/GDPA area, including a portion of the Main Campus Property. The 2013 SEIR identified a potentially significant and unavoidable impact related to consistency with the Regional Air Quality Strategy (RAQS) because growth assumptions for the GPA/GDPA would exceed the growth projection in the RAQS. A significant impact was also identified related to criteria air pollutant emissions from construction and operations of the proposed land uses. The 2013 SEIR determined that compliance with BMPs would reduce construction impacts to a less than significant level, but additional mitigation would be required at the project level for operational impacts. Section 4.8, *Air Quality*, of the 2001 SEIR addressed air quality impacts related to the Lake Property, and identified potentially significant and unavoidable impacts with mitigation measures. The analysis and discussion of air quality contained in the 2013 SEIR for the Main Campus Property and the 2001 SEIR for the Lake Property are incorporated by reference; however, new mitigation measures that are equivalent to or better than measures included in prior environmental review to address current air quality impacts are identified within this section.

Information contained in this section is based on the Project Air Quality and Greenhouse Gas Emissions Technical Report, prepared by HELIX in April 2016. The Air Quality and Greenhouse Gas Emissions Technical Report is provided as Appendix C to this EIR. The analysis in the air quality technical report also provides the basis for the Project AQIP, included as part of the UID SPA Plan, as it relates to criteria air pollutant emissions. The report updates the applicable information contained in the SEIRs.

5.4.1 Existing Conditions

A. Regulatory Framework

1. Federal

a. Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) with states retaining the option to adopt more stringent standards or to include other specific pollutants. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those sensitive receptors most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Current air quality standards are listed in Table 5.4-1, *Ambient Air Quality Standards*. Areas that meet the ambient air quality standards are classified as "attainment" areas while areas that do not meet these standards are classified as "non-attainment" areas.

Table 5.4-1 AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
SO_2	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	

Table 5.4-1 (cont.) AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2015b.

O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM_{10}: large particulate matter;
AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter;
NO_2: nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

[a] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

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

Note: More detailed information in the data presented in this table can be found at the CARB website (www.arb.ca.gov).

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

2. State

a. California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. The California CAA was adopted in 1988 and establishes the state's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. The California Air Resources Board (CARB), a part of the California EPA (CalEPA) is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California ambient air quality standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs.

The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to standards set for the criteria pollutants, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles (see Table 5.4-1). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Further, in addition to primary and secondary CAAQS, the state has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health.

b. Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650-39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

Diesel-exhaust particulate matter emissions have since been established as TACs. Following the identification of diesel particulate matter as an air toxic in 1998, the CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel Fueled Engines and Vehicles (CARB 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter by 85 percent by 2020. A number of programs and strategies to reduce diesel particulate matter that have been or are in the process of being developed include:

The Carl Moyer Program: This program, administered by the CARB, was initially approved in February 1999 and is regularly updated. The most recent program guidelines are the 2011 Carl Moyer Program Guidelines, approved in April 2011 and updated in December 2015. It provides grants to private companies, public agencies, or individuals operating heavy-duty diesel engines to cover an incremental portion of the cost of cleaner on-road, off-road, marine, locomotive, and agricultural irrigation pump engines.

California Diesel Fuel Regulations: The California Diesel Fuel Regulations (California Code of Regulations [CCR] Title 13, Sections 2281-2285 and CCR Title 17, Section 93114) set limits on the aromatic hydrocarbon and sulfur content for diesel fuel marketed in California. Under these rules, starting in June 2006 in accordance with the phase-in schedule, vehicular diesel fuel must not have a sulfur content that exceeds 15 parts per million (ppm) by weight. The regulations also specify that on or after October 1, 1993, the aromatic hydrocarbon content of vehicular diesel fuel must not exceed 10 percent by volume.

On-Road Heavy-Duty Diesel New Engine Program: This program develops strategies and regulations to reduce diesel emissions from new on-road diesel-powered equipment. Emission control regulations have been coordinated with the EPA and require that new engines manufactured in and subsequent to 2004 meet new emissions requirements for particulates and other pollutants.

Heavy-Duty Diesel In-Use Strategies Program: The goal of this program is to develop and implement strategies for reducing diesel emissions from existing on and off-road diesel engines. The Retrofit Assessment section is responsible for the development and implementation of procedures for assessing, recommending, and approving emission control devices. The Retrofit Implementation section is responsible for developing plans for retrofitting on- and off-road engines with emission reducing technologies. To date plans being developed or implemented have targeted solid waste collection vehicles, on-road heavy-duty public fleet vehicles, and fuel delivery trucks. Generally, these plans require that a percentage of the fleet, based on age of the vehicles, be retrofitted on a predetermined schedule.

Other programs include:

Off-Road Mobile Sources Emission Reduction Program: The goal of this program is to develop regulations to control emissions from diesel, gasoline, and alternative-fueled off-road mobile engines. These sources include a range of equipment from lawn mowers to construction equipment to locomotives.

Heavy-Duty Vehicle Inspection and Periodic Smoke Inspection Program: This program provides periodic inspections to ensure that truck and bus fleets do not emit excessive amounts of smoke.

Lower-Emission School Bus Program: Under this program, and in coordination with the California Energy Commission, the CARB is developing guidelines to provide criteria for the purchase of new school buses and the retrofit of existing school buses to reduce particulate matter emissions.

In addition, the CARB Land Use Handbook recommends maintaining a 500-foot buffer between sensitive land uses (such as residences and schools) and freeways. As an ongoing process, the CARB continues to establish new programs and regulations for the control of diesel particulate emissions as appropriate. The continued development and implementation of these programs and policies ensures that public exposure to diesel particulate matter will continue to decline.

c. California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This regulation applies to sources of objectionable odors.

d. California Code of Regulations, Title 24, Part 6

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. 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.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2013 and went into effect July 2014. This update increases energy efficiency requirements by 25 to 30 percent compared to the 2008 Title 24 standards. The next scheduled update in 2016 will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2016 Standards will go into effect on January 1, 2017 (California Energy Commission [CEC] 2015).

e. California Green Building Standards Code

The California Green Building Standards Code (24 CCR, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including buildings for retail, office, public schools and hospitals) throughout California. The current version of the code went into effect on July 1, 2014, and includes energy efficiency updates resulting in energy usage reductions of 25 percent for residential buildings and 30 percent for nonresidential building (CEC 2012). The code is Part 11 of the California Building Standards Code in Title 24 of the CCR and is also known as the CALGreen Building Standards Code (California Building Standards Code [CBSC] 2014a). The next update of the CALGreen Building Code (2016) is scheduled to go into effect on January 1, 2017 (CBSC 2014b).

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

3. Local

a. San Diego County Regional Air Quality Strategy and State Implementation Plan

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for San Diego County. The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircrafts, and agricultural equipment, which are regulated by the CARB or the EPA. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements if the sources are regulated by the SDAPCD. Additionally, the SDAPCD, along with the CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County. These stations are used to measure and monitor criteria and toxic air pollutant levels in the ambient air.

The SDAPCD and the SANDAG are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the San Diego Air Basin (SDAB). The San Diego County RAQS was initially adopted in 1991, and is updated on a triennial basis. The RAQS was updated in 1995, 1998, 2001, 2004, and most recently in April 2009. The RAQS outlines the SDAPCD's plans and control measures designed to attain the state air quality standards for ozone. The SDAPCD has also developed the SDAB's input to the SIP, which is required under the Federal CAA for pollutants that are designated as being in non-attainment of national air quality standards for the basin.

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 establish 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 of San Diego 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. In the event that a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the general plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

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 SDAPCD 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 ozone.

b. City of Chula Vista General Plan and Growth Management Ordinance

Included in the Chula Vista General Plan is the GMO. Air quality is identified as an important part of the quality of life in Chula Vista and one of the stated policies of the element (Policy GM 4.4) adapts City regulations to meet federal and state air quality standards. In addition, the GMO (Municipal Code Section 19.09.050B) requires that an AQIP be prepared for all major development projects (50 dwelling units or greater) as part of the SPA Plan process. The AQIP for the Project must comply with the City AQIP guidelines. Copies of the AQIP Guidelines are available at the City of Chula Vista Planning and Building Department.

c. City of Chula Vista General Plan

The Environmental Element of the Chula Vista General Plan contains Objective E 6 and its multiple supporting policies to improve local air quality by minimizing the production and emission of air pollutants and TACs, and limit the exposure of people to such pollutants. Specifically, Objective E 6 is to improve local air quality by minimizing the production and emissions of air pollutants and toxic air contaminants and limit the exposure of people to such pollutants. Supporting policies include encouraging compact development (E 6.1), facilitating

transit (E 6.2), avoiding siting sensitive receptors near major toxic sources (E 6.4 and E 6.10), developing strategies to minimize carbon monoxide hot spots that address all modes of transportation (E 6.11); and siting industries in a way that minimizes the potential impacts of poor air quality on homes, schools, hospitals, and other land uses where people congregate (E 6.15). Policy E 6.10 requires a Health Risk Assessment (HRA) for new sensitive receptors proposed to be located within 500 feet of a highway.

d. Otay Ranch General Development Plan

Part II, Chapter 6, Section C of the GDP establishes goals to minimize the adverse impacts of development on air quality including creating a safe and efficient multi-modal transportation network which minimizes the number and length of single passenger vehicle trips.

- Objective: Minimize the number and length of single passenger vehicle trips to and from employment and commercial centers to achieve an average of 1.5 persons per passenger vehicle during weekday commute hours.

- Policies:

    - Encourage, as appropriate, alternative transportation incentives offered to employees, alternative work hour programs, alternative transportation promotional materials, information on car pool and van pool matching services, transit pass information, space for car-pool and van-pool-riders-wanted advertisements, information about transit and rail service, as well as information about bicycle facilities, routes, storage, and location of nearby shower and locker facilities.

    - Promote telecommuting and teleconferencing programs and policies in employment centers.

    - Establish or participate in education-based commute programs, which minimize the number and length of single passenger vehicle trips.

    - Provide on-site amenities in commercial and employment centers to include childcare facilities, post offices, banking services, cafeterias/delis/restaurants, etc.

e. SDAPCD Particulate Matter Reduction Measures

In addition to the RAQS and SIP, the SDAPCD adopted the "Measures to Reduce Particulate Matter in San Diego County" report in December 2005. This report is based on particulate matter reduction measures adopted by CARB. The SDAPCD evaluated CARB's list of measures and found that the majority were already being implemented in San Diego County. As a result of the evaluation, SDAPCD proposed measures for further evaluation to reduce particulate emissions from residential wood combustion and from fugitive dust from construction sites and unpaved roads. The SDAPCD requires that construction activities implement the measures listed in Rule 55 to minimize fugitive dust emissions. Rule 55 requires the following:

1. No person shall engage in construction or demolition activity in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2. Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall be minimized by the use of any of the equally effective trackout/carry-out and erosion control measures listed in Rule 55 that apply to the Project or operation. These measures include track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; watering for dust control; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks. Visible roadway dust must be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations.

f. Other APCD Rules and Regulations

The SDAPCD adopted Rule 67, Architectural Coatings, in December 2001, which establishes volatile organic compounds (VOC) content limits for architectural coatings. Additionally, APCD Rule 1210 implements the public notification and risk reduction requirements of the State Air Toxics "Hot Spots" Act, and requires facilities to reduce risks to acceptable levels within five years. Rule 1200 establishes acceptable risk levels, and emission control requirements for new and modified facilities that may emit additional TACs. Rule 51 also prohibits nuisances, including objectionable odors.

B. Existing Air Quality

1. Criteria Pollutants

a. Attainment Designations

The SDAB is classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB currently falls under a national "maintenance plan" for CO. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for all other criteria pollutants.

b. Monitored Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the 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 is the Chula Vista monitoring station located at 80 East J Street. Air quality data for are shown in Table 5.4-2, *Air Quality Monitoring Data*.

Monitoring data presented below shows acceptable levels of the criteria air pollutants ozone (1-hour), PM_{10}, $PM_{2.5}$, and NO_2 for 2013 to 2015. The state 8-hour ozone standard was violated once in 2014. The federal 8-hour ozone standard was violated once in 2012.

Table 5.4-2 AIR QUALITY MONITORING DATA

Pollutant	2013	2014	2015
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.073	0.093	0.088
Days above 1-hour state standard (>0.09 ppm)	0	0	0
Maximum 8-hour concentration (ppm)	0.063	0.072	0.067
Days above 8-hour state standard (>0.070 ppm)	0	1	0
Days above 8-hour federal standard (>0.075 ppm)	0	0	0
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration ($\mu g/m^3$)	40.0	39.0	45.0
Days above state standard (>50 $\mu g/m^3$)	0	0	0
Days above federal standard (>150 $\mu g/m^3$)	0	0	0
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration ($\mu g/m^3$)	21.9	26.5	33.5
Days above federal standard (>35 $\mu g/m^3$)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.057	0.055	0.049
Days above state 1-hour standard (0.18 ppm)	0	0	0

Source: CARB 2016b.
ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter

2. Greenhouse Gases

The CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in million metric tons (MMT) of carbon dioxide equivalent (CO_2e). Table 5.4-3, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2013.

Table 5.4-3 CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR (MMT CO_2e)

Sector	1990	2000	2010	2013
Agriculture and Forestry	23.6 (5%)	32.1 (7%)	34.5 (8%)	36.2 (8%)
Commercial	14.4 (3%)	15.0 (3%)	21.6 (5%)	22.6 (5%)
Electricity Generation	110.6 (26%)	105.2 (22%)	90.5 (20%)	90.6 (20%)
Industrial	103.0 (24%)	105.4 (22%)	102.7 (23%)	104.2 (23%)
Residential	29.7 (7%)	31.8 (7%)	32.2 (7%)	32.3 (7%)
Transportation	150.7 (35%)	178.1 (38%)	173.7 (38%)	172.5 (38%)
Unspecified Remaining	1.3 (<1%)	1.2 (<1%)	0.8 (<1%)	0.8 (<1%)
TOTAL	**433.3**	**468.8**	**456.0**	**459.3**

Source: CARB 2007 and CARB 2015a

As shown in Table 5.4-3, statewide GHG emissions totaled 433 MMT CO_2e in 1990, 469 MMT CO_2e in 2000, 456 MMT CO_2e in 2010, and 459 MMT CO_2e in 2013. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions. Impacts related to Project GHG emissions are analyzed in Section 5.10, *Global Climate Change*, of this EIR.

3. San Diego County

A San Diego regional emissions inventory was prepared by the University of San Diego (USD) School of Law, Energy Policy Initiative Center (EPIC) that took into account the unique characteristics of the region. Their 2010 emissions inventory for San Diego is duplicated below in Table 5.4-4, *San Diego County Greenhouse Gas Emissions by Sector*. The sectors included in this inventory are somewhat different from those in the statewide inventory.

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use. Impacts related to Project GHG emissions are analyzed in Section 5.10, *Global Climate Change*, of this EIR.

Table 5.4-4 SAN DIEGO COUNTY GREENHOUSE GAS EMISSIONS BY SECTOR (MMT CO_2e)

Sector	2010
On-Road Transportation	14.4 (43%)
Electricity	8.3 (25%)
Natural Gas Consumption	2.9 (9%)
Off-Road Equipment and Vehicles	1.4 (4%)
Civil Aviation	1.9 (6%)
Waste	0.6 (2%)
Industrial	1.8 (5%)
Water-Borne Navigation	0.1 (<1%)
Rail	0.3 (1%)
Agriculture/Forestry/Land Use	0.5 (2%)
Other	1.6 (5%)
Sequestration	-0.7 (-2%)
TOTAL	**33.2**

Source: USD 2013

4. City of Chula Vista

To help guide implementation of the Climate Action Plan (CAP), the City regularly conducts GHG emission inventories. Table 5.4-5, *Chula Vista Greenhouse Gas Emissions*, shows the estimated city-wide GHG emissions for the years 1990, 2005, and 2012. Impacts related to Project GHG emissions are analyzed in Section 5.10, *Global Climate Change*, of this EIR.

Table 5.4-5 CHULA VISTA GREENHOUSE GAS EMISSIONS (MT CO_2e)

Source	1990	2005	2012
Transportation	340,090	322,293	400,133
Energy	416,575	480,950	503,936
Solid Waste	80,895	87,621	65,610
Potable Water	*	46,951	43,014
Waste Water	9,607	15,457	17,719
TOTAL	**847,166**	**953,272**	**1,030,412**

Source: City of Chula Vista 2012
* = Not Available; MT = metric ton

5.4.2 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines and related City criteria, a project would have a significant environmental impact related to air quality if it would:

- **Threshold 1:** Conflict with or obstruct implementation of the applicable air quality plan.
- **Threshold 2:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- **Threshold 3:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- **Threshold 4:** Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations.
- **Threshold 5:** Create objectionable odors affecting a substantial number of people.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., oxides of nitrogen [NO_X] and VOCs), Project emissions may be evaluated based on the quantitative emission thresholds established by the lead agency. The City of Chula Vista has not established specific numeric thresholds related to criteria air pollutants. The City relies, instead, on the significance thresholds established by the South Coast Air Quality Management District (SCAQMD). For this analysis, the calculated emissions of the Project are compared to the SCAQMD thresholds of significance for criteria pollutants for individual projects, provided in Table 5.4-6, *Significance Thresholds*. If the thresholds are exceeded by a proposed project, then the impact is considered significant.

Table 5.4-6 SIGNIFICANCE THRESHOLDS

Pollutant	Construction Emissions (pounds/day)	Operational Emissions (pounds/day)
Oxides of Nitrogen (NO_X)	100	55
Volatile Organic Compounds (VOC)	75	55
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55
Oxides of Sulfur (SO_X)	150	150
Carbon Monoxide (CO)	550	550
Lead and Lead Compounds	3	3
Toxic Air Contaminants		
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT	
Non-Cancer Hazard	1.0	

Source: SCAQMD 2015.
T-BACT = Toxics-Best Available Control Technology

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (preschool through 12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public. Any project that has the potential to directly impact a sensitive receptor located within one-quarter mile and results in a health risk greater than 10 in 1 million would have a potentially significant impact.

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, commonly referred to as public nuisance law, prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a “considerable” number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

Every use and operation shall be conducted so that no unreasonable heat, odor, vapor, glare, vibration (displacement), dust, smoke, or other forms of air pollution subject to APCD standards of particulate matter shall be discernible at the property line of the parcel upon which the use or operation is located.

Therefore, any unreasonable odor discernible at the property line of the Project site will be considered a significant odor impact.

5.4.3 Impact Analysis

A. Threshold 1: Conflict with or obstruct implementation of the applicable air quality plan.

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the RAQS and SIP, prepared by the SDAPCD for the region. Both the RAQS and SIP rely on information from CARB and SANDAG, including projected growth in the County, mobile, area and all other source emissions in order to project future emissions and determine from that the strategies necessary for the reduction of stationary source 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 such, a project that proposes development consistent with the growth anticipated by the local general plan would be consistent with the RAQS. In the event that a proposes development which is less dense than anticipated within the local general plan, the Project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the local general plan and SANDAG's growth projections upon which the RAQS is based, the Project would be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality. This situation would warrant further analysis to determine if the Project and the surrounding projects exceed the growth projections used in the RAQS for the specific subregional area.

The City of Chula Vista General Plan has overarching development objectives and policies that specifically state that proposed development in this area is to be consistent with existing Otay Ranch GDP and SPA plans. The Project and associated off-site improvements are consistent with the Otay Ranch GDP. The Project is also subject to the existing P-C District zoning regulations, which apply to the Village Development Areas. The P-C zone requires the preparation of a SPA plan. The Project would provide for orderly pre-planning and long-term development because it includes a SPA Plan that will guide UID development. It implements an orderly preplanning for Project development through the implementation of approved site utilization plans and form-based code. The form-based code in the SPA Plan would implement regulations and standards that focus on the physical relationships between buildings, streets, and public spaces. This approaches the development of land by regulating the form, character, and street appearance of a building to focus attention on the public presentation of buildings, and creating a public setting that is comfortable for pedestrians. This approach also provides design standards for landscape zones, open space and recreational areas, lighting, parking areas, and signage. Based on the described conformance with applicable land use and zoning criteria, the Project would be in conformance with the General Plan and would therefore be consistent with the RAQS. Impacts associated with the RAQS would be less than significant.

B. Threshold 2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

The Project would generate criteria pollutants in the short term during construction and the long term during operation. To determine whether a project would result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SCAQMD (as shown in Table 5.4-6).

1. Construction

Peak daily criteria pollutant emissions were estimated using the California Emissions Estimator Model (CalEEMod). In the absence of specific construction information for the Project, equipment types needed for all phases of construction are estimated by CalEEMod based on the size and subtypes of the land uses entered in the land use module. For "worst-case" modeling purposes, construction is assumed to begin in January 2017 and be completed in May 2030. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). Further, construction modeling takes into account several construction BMPs to reduce emissions. Details of phasing, selection of construction equipment, Project design features, construction best management practices, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for Project construction are shown in Table 5.4-7, *Daily Construction Emissions*. The data are presented as the maximum anticipated daily construction emissions for comparison with the SCAQMD thresholds.

Table 5.4-7 DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds per day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	5	52	40	<0.5	11	7
Grading	6	70	48	<0.5	8	5
Building Construction	22	101	270	1	40	12
Paving	1	8	15	<0.5	1	<0.5
Architectural Coatings	19	3	17	<0.5	6	2
Maximum Daily Emissions	22	101	270	1	40	12
Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	*No*	*Yes*	*No*	*No*	*No*	*No*

Source: HELIX 2017.

Notes: Includes BMPs listed in the Air Quality and Greenhouse Gas Emissions Technical Report for the UID (HELIX 2016), which are also prescribed as Mitigation Measure 5.4-1 to ensure enforceability.

As shown in Table 5.4-7, emissions of all criteria pollutants, with the exception of NO_X, are below the SCAQMD daily thresholds. Due to the exceedance of the NO_X threshold, impacts are potentially significant (Impact 5.4-1).

2. Operation

To estimate the most conservative estimate for operational air quality emissions, the Project assumptions for the full buildout year (2030) were used in the analysis. The full buildout condition represents the greatest amount of vehicle trips and land use development. The major source of long-term operational air quality impacts from the Project would be emissions produced from Project-generated vehicle trips. Vehicle trip generation is based on the Project traffic study, which was prepared by LLG (2017). The projected ADT rate for the Project is 54,360 trips. The vehicle trip emissions account for internal capture from mixed-use development and the reduction in vehicle trips compared to similar developments that do not provide access to transit. A BRT stop is identified at the intersection of Campus Boulevard and Orion Avenue that would serve the Project site and nearby off-site residential and commercial areas. The projected ADT and vehicle trip length also take into account the TDM program included in the UID SPA Plan. The TDM includes strategies to reduce vehicle trips and miles traveled and to design a multi-modal transportation system, and establishes a Transportation Management Association to provide transportation services in a particular area to reduce vehicle miles and implement other TDM strategies. Pollutant emissions from vehicles were calculated using CalEEMod.

In addition to vehicle trips, the Project would emit pollutants from on-site area sources, such as landscape maintenance equipment; consumer products; and periodic repainting of interior and exterior surfaces (architectural coatings). Energy source emissions would be generated by the on-site burning of natural gas for space and water heating. The energy source assumptions include 25 percent increased efficiency beyond the CalEEMod default Title 24 standards (2008) to reflect the 2013 Title 24 standards (CEC 2012). This reduction was only applied to the portion of energy consumption regulated by Title 24.

The vehicular and area source emissions associated with operation of the Project are summarized in Table 5.4-8, *Daily Operational Emission*s. As shown therein, the Project would exceed the daily regional thresholds for CO, VOCs, NO_X, and PM_{10} during operation of the Project. Emissions are attributable primarily to vehicular trips, which would exceed the thresholds for VOCs, NO_X, and CO. However, area sources would also result in significant emissions of VOCs from consumer products and landscaping. Energy source emissions would combine with mobile source emissions to result in significant emissions of PM_{10}. Therefore, a significant impact would occur (Impact 5.4-2). The air quality technical report for the GPA/GDPA estimated emissions that would result from the increase in building potential accommodated by the GPA/GDPA compared to the previous GDP, including the increase in building potential in the UID. The findings in this report are consistent with the GPA/GDPA conclusion that significant impacts would occur.

Table 5.4-8 DAILY OPERATIONAL EMISSIONS

Emission Source	Pollutant Emissions (pounds/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area	180	2	167	<1	1	1
Energy	4	40	31	<1	3	3
Mobile	105	124	784	2	147	41
TOTAL	**290**	**166**	**983**	**2**	**151**	**45**
Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	*Yes*	*Yes*	*Yes*	*No*	*Yes*	*No*

Source: HELIX 2017.

C. Threshold 3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The region is a federal and/or state nonattainment area for PM_{10}, $PM_{2.5}$, and ozone. The Project would contribute particulates and the ozone precursors VOC and NO_X to the area during short-term Project construction (see discussion of Impact 5.4-1). Regional emissions during construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation with mitigation (see Section 5.4.6.B, Mitigation Measures 5.4-1a and 5.4-1b). Construction emissions with mitigation would be less than the significance thresholds (Table 5.4-9, *Daily Construction Emissions with Mitigation*) (see Section 5.4.7.B).

Table 5.4-9 DAILY CONSTRUCTION EMISSIONS WITH MITIGATION

Phase	Pollutant Emissions (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Site Preparation	5	52	40	<0.5	11	7
Grading	6	70	48	<0.5	8	5
Building Construction	21	87	271	1	39	12
Paving	1	8	15	<0.5	1	<0.5
Architectural Coatings	19	3	17	<0.5	6	2
Maximum Daily Emissions	21	87	271	1	39	12
Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

Source: HELIX 2017.

As shown in the Project construction emissions evaluation, the emissions of NO_X, VOCs, PM_{10}, and $PM_{2.5}$ would be below significance levels. Short-term cumulative impacts related to air quality could occur if construction of the Project and other projects in the surrounding area were to occur simultaneously. In particular, with respect to localized impacts, the consideration of cumulative construction particulate (PM_{10} and $PM_{2.5}$) impacts is limited to cases when projects constructed simultaneously are within a few hundred yards of each other because of (1) the combination of the short range (distance) of particulate dispersion (especially when compared to gaseous pollutants) and (2) the SDAPCD's required dust control measures which further limit particulate dispersion

from a project site. Though it is possible multiple projects under the proposed Project and previously approved projects may undergo construction concurrently, none of the projects are expected to result in emissions greater than the peak daily construction scenario as analyzed above. As shown in Table 5.4-9, the peak daily construction scenario results in emissions of particulates that are 26 percent of the PM_{10} threshold and 22 percent of the $PM_{2.5}$ threshold. As such, Project construction is not anticipated to result in a cumulatively significant impact on air quality.

Long-term operational emissions, as shown above in Table 5.4-8, would exceed regional thresholds, and, therefore, be cumulatively considerable (Impact 5.4-3).

D. Threshold 4: Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations.

Impacts to sensitive receptors are typically analyzed for operational period CO hot spots and exposure to TACs. An analysis of the Project's potential to expose sensitive receptors to these pollutants is provided below.

1. Carbon Monoxide Hot Spots

Vehicle exhaust is the primary source of CO. In an urban setting, the highest CO concentrations are generally found within proximity to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increase. Project-generated traffic has the potential of contributing to localized "hot spots" of CO off site. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections, where the LOS is severely degraded.

The CARB also recommends evaluation of the potential for the formation of locally high concentrations of CO, known as CO hot spots. A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour CO ambient air standards. To verify that the Project would not cause or contribute to a violation of the 1-hour and 8-hour CO standards, an evaluation of the potential for CO hot spots at nearby intersections was conducted.

The TIA (LLG 2017) evaluated whether there would be a change in the LOS at the intersections affected by the Project. The potential for CO hot spots was evaluated based on the results of the TIA. The Transportation Project-Level Carbon Monoxide Protocol ([Protocol] Caltrans 1998) was followed to determine whether a CO hot spot is likely to form due to Project-generated traffic. In accordance with the Protocol, CO hot spots are typically evaluated when: (a) the LOS of an intersection decreases to an LOS E or worse; (b) signalization and/or channelization is added to an intersection; and, (c) sensitive receptors, such as residences, schools, hospitals, etc., are located in the vicinity of the affected intersection or roadway segment.

According to the TIA, 12 intersections would operate at LOS E or F and experience an increase in delay from the Project:

- Bonita Road at San Miguel Road,
- Proctor Valley Road at San Miguel Road,
- Proctor Valley Road at San Miguel Ranch Road,
- Paseo Ranchero and Telegraph Canyon Road,
- La Media Road at Birch Road,
- SR-805 Southbound ramps at Main Street,
- SR-805 Northbound ramps at Main Street,
- Village 9 Street "B" at Village 9 Street "C",
- SR-805 Southbound ramps at Palm Avenue,
- SR-805 Northbound ramps at Palm Avenue,
- Heritage Road at Avenida de las Vistas, and
- Heritage Road at Otay Mesa Road.

Therefore, consistent with the CO Protocol, these findings indicate that further screening is required. Although the SDAPCD does not, various air quality agencies in California have developed conservative screening methods. The screening methods of the Sacramento Metropolitan Air Quality Management District (SMAQMD) are used for this Project because ambient CO concentrations within the SMAQMD jurisdiction are higher than for the Project area, as measured by CARB, resulting in a more conservative analysis. The SMAQMD states that a project would not result in a significant impact to local CO concentrations if it meets all of the below criteria:

- The affected intersection carries less than 31,600 vehicles per hour;
- The project does not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other location where horizontal or vertical mixing of air would be substantially limited; and
- The affected intersection, which includes a mix of vehicle types, is not anticipated to be substantially different from the County average, as identified by EMFAC or CalEEMod models (SMAQMD 2009).

The highest traffic volume at the affect intersections is estimated to be 6,850 vehicles at the intersection of Paseo Ranchero and Telegraph Canyon Road during the AM peak hour (LLG 2017). The intersection is not located in a tunnel, urban canyon, or similar area that would limit the mixing of air, nor is the vehicle mix anticipated to be substantially different than the County average. There would be no potential for a CO hot spot or exceedance of state or federal CO ambient air quality standard because the maximum traffic volume would be substantially less than the 31,600 vehicles per hour screening level; because the congested intersection is located where mixing of air would not be limited; and because the vehicle mix would not be uncommon. The impact would be less than significant.

2. Exposure to TACs

Construction activities would result in short-term, Project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment. CARB identified diesel PM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, HRAs, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the Project.

There would be relatively few pieces of off-road, heavy-duty diesel construction equipment in operation, and the construction period would be relatively short, especially when compared to 70 years. Combined with the highly dispersive properties of diesel PM, distance from sensitive receptors, and additional reductions in exhaust emissions from improved equipment, construction-related emissions would not expose sensitive receptors to substantial emissions of TACs. The impact would be less than significant.

With regard to long-term operations, it is not currently known if any of the uses proposed by the Project would include any new sources of TACs. Subsequent projects that include new stationary sources (such as laboratory buildings) would need to analyze specific operation-related TAC impacts to ensure that emissions remain below SDAPCD thresholds. Due to the potential of individual projects to include new sources of TACs, implementation of the Project would result in potentially significant impacts related to TAC emissions (Impact 5.4-4).

E. Threshold 5: Create objectionable odors affecting a substantial number of people.

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Any unreasonable odor discernible at the property line of the Project site will be considered a significant odor impact.

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. Diesel exhaust and VOCs would be emitted during construction of the Project. The odors of these emissions are objectionable to some; however, emissions would disperse rapidly from the Project area and therefore should not be at a level that would affect a substantial number of people. Further, construction operations would be temporary. As a result, impacts associated with odors during construction are not considered significant.

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting activities, refineries, landfills, dairies, and fiberglass molding operations. The Project would not place sensitive receptors within a close proximity to the listed odor sources. In addition, the Project would not be a source of odor impacts, as the operation of

university-related uses is not associated with odors. Impacts associated with odor sources are considered less than significant.

5.4.4 Level of Significance Prior to Mitigation

A. Air Quality Plans

Implementation of the Project would not conflict with air quality plans and no impacts would occur.

B. Air Quality Violations

Impact 5.4-1: Implementation of the Project would result in potentially significant criteria pollutant emission impacts during construction.

Impact 5.4-2: Implementation of the Project would result in significant criteria pollutant emission impacts during operation.

C. Cumulative Increase of Criteria Pollutants

Impact 5.4-3: Long-term cumulative emissions would exceed regional thresholds and, therefore, would be cumulatively significant.

D. Sensitive Receptors

Impact 5.4-4: Impacts related to TAC emissions would be potentially significant.

E. Objectionable Odors

Impacts associated with odor sources would be less than significant.

5.4.5 Mitigation Measures

A. Air Quality Plans

No mitigation measures are required.

B. Air Quality Violations

1. Construction

Implementation of the Project would result in significant criteria pollutant emission impacts during construction (Impact 5.4-1). The Project includes features and would implement BMPs (beyond those required by SCAQMD) to reduce emissions during construction. These features are also prescribed as Mitigation Measures 5.4-1a and 5.4-1b to ensure implementation.

5.4-1a Air Quality-Related Construction Best Management Practices. ~~The~~ In addition to the measures required by SDAPCD Rule 55, the control measures listed below will be implemented during Project construction to reduce dust and VOC emissions:

- A minimum of two applications of water during grading between dozer/scraper passes.
- Paving, chip sealing, or chemical stabilization of internal roadways after completion of grading.
- Termination of grading if winds exceed 25 mph.
- Ensure that all exposed surfaces maintain a minimum soil moisture of 12 percent.
- Stabilization of dirt storage piles by chemical binders, tarps, fencing, or other erosion control.
- Use of "Super Compliant" architectural coatings with a VOC content of 10 grams per liter or less.

The following mitigation measure is required to reduce construction emissions of NO_X:

5.4-1b Use of Tier 4 Final Off-Road Equipment. All off-road diesel-powered construction equipment greater than 50 horsepower (HP) used during each building construction phase shall meet U.S. EPA Tier 4 off-road emissions standards. A copy of each unit's certified Tier specification shall be provided to the City of Chula Vista Development Services Department at the time of mobilization of each applicable unit of equipment.

2. Operation

Implementation of the Project would result in significant criteria pollutant emission impacts during operation (Impact 5.4-2). The Otay Ranch GDP Final Program EIR includes land use policies, siting/design policies, and transportation-related management actions to mitigate operational emissions (Ogden 1992). All applicable measures have already been incorporated into the UID SPA Plan, such as provision of bike lanes, providing services near residences, and providing transit support facilities such as bus stops, as listed in the Project Description~~, and required by Mitigation Measures 5.10-1a through 5.10-1d~~. There are no other feasible mitigation measures available at the project level to reduce vehicular emissions other than reducing vehicle trips. The Project trip generation rates account for the reduction in vehicle trips that would occur as a result of the mixed-use areas, transit use, and availability of pedestrian and bicycle facilities proposed as part of the UID SPA Plan (as discussed in Section 5.10, *Global Climate Change*, of this EIR). In addition, future vehicular emissions may be lower than estimated due to increasingly stringent California fuel efficiency requirements. Some measures cannot be implemented at the SPA level, such as providing video-conference facilities in work places or requiring flexible work schedules. Additionally, there are no feasible mitigation measures currently available to reduce area sources of emissions without regulating the purchases of individual consumers. Operational emissions of VOCs, NO_X, CO, and PM_{10} would remain significant and unavoidable.

C. Cumulative Increase of Criteria Pollutants

Regional construction emissions would not be cumulatively considerable, and the impact would be less than significant with mitigation.

Long-term operational emissions would exceed regional thresholds, and, therefore, be cumulatively considerable. The long-term cumulative impact would be significant and unavoidable (Impact 5.4-3). All applicable measures have already been incorporated into the UID SPA Plan, as listed in the Project Description~~, and required by Mitigation Measures 5.10-1a through 5.10-1d~~. No mitigation measures beyond those that are already included to reduce emissions are feasible and implementable, short of reducing the size of the Project (see discussion under B.2, *Operation*).

D. Sensitive Receptors

Impacts related to TAC emissions would be potentially significant (Impact 5.4-4). Implementation of Mitigation Measure 5.4-4 would reduce stationary source impacts to less than significant:

5.4-4 **Health Risk Assessment.** Prior to the issuance of building permits for any new facility that would have the potential to emit TACs, in accordance with AB 2588, an emissions inventory and HRA shall be prepared. Building permits shall only be issued for facilities that demonstrate TAC emissions below the standards listed in Table 5.4-6 (excess cancer risk of 1 in 1 million or 10 in 1 million with (T-BACT) and non-cancer hazard index of 1.0).

E. Objectionable Odors

No mitigation measures are required.

5.4.6 <u>Level of Significance After Mitigation</u>

A. Air Quality Plans

Impacts associated with air quality plans would be less than significant without mitigation.

B. Air Quality Violations

1. Construction

Criteria pollutant emission impacts during construction (Impact 5.4-1) would be reduced to less than significant levels with implementation of Mitigation Measures 5.4-1a and 5.4-1b because the mitigation would require control measures during construction related to dust and VOC emission controls and would require that the Project not exceed Tier 4 standards for off-road equipment.

2. Operation

No mitigation is available to reduce significant criteria pollutant emission impacts during operation (Impact 5.4-2) to a less than significant level. All of the applicable land use policies, siting/design

policies, and transportation-related management actions and mitigation measures included in the Otay Ranch GDP Final Program EIR (Ogden 1992) have been incorporated into the UID SPA Plan, such as provision of bike lanes, providing services near residences, and providing transit support facilities such as bus stops, as listed in the Project Description~~, and required by Mitigation Measures 5.10-1a through 5.10-1d~~. There are no other feasible mitigation measures available at the Project level to reduce vehicular emissions other than reducing vehicle trips. The Project trip generation rates account for the reduction in vehicle trips that would occur as a result of the mixed-use areas, transit use, and availability of pedestrian and bicycle facilities proposed as part of the UID SPA Plan (as discussed in Section 5.10, *Global Climate Change*, of this EIR). In addition, future vehicular emissions may be lower than estimated due to increasingly stringent California fuel efficiency requirements. Some measures cannot be implemented at the SPA level, such as providing video-conference facilities in work places or requiring flexible work schedules. Additionally, there are no feasible mitigation measures currently available to reduce area sources of emissions without regulating the purchases of individual consumers. Accordingly, impacts associated with the operational emissions of VOCs, NO_X, CO, and PM_{10} would remain significant and unavoidable.

C. Cumulative Increase of Criteria Pollutants

No mitigation is available to reduce significant impacts associated with long-term emissions that exceed regional thresholds of criteria pollutants (Impact 5.4-3) to a less than significant level. Mitigation measures have been included to reduce emissions, but impacts will remain significant and unavoidable (see discussion under B.2, *Operation*).

D. Sensitive Receptors

Project impacts related to TAC emissions (Impact 5.4-4) would be reduced to less than significant levels with implementation of Mitigation Measure 5.4-4 because the mitigation would require that an HRA be prepared and no building permits be issued for facilities unless it can be demonstrated that TAC emissions from new development would not exceed the established threshold.

E. Objectionable Odors

Impacts associated with objectionable odors would be less than significant without mitigation.