4.2 AIR QUALITY

4.2.1 INTRODUCTION

This section presents existing air quality conditions in the project area and provides a description of the regulatory framework for air quality management on a federal, state, regional, and local level. In addition, this section evaluates the types and quantities of air emissions that would be generated over the long term due to campus operation and from ongoing construction on the campus under the proposed Campus Master Plan and analyzes the potential air quality impacts from those emissions.

The analysis of air quality impacts is based on air quality regulations administered by the US Environmental Projection Agency (US EPA), the California Air Resources Board (CARB), and the Bay Area Air Quality Management District (BAAQMD), with each agency responsible for different aspects of the proposed project's activities. The roles of these agencies are discussed in detail under Subsection 4.2.4, Regulatory Considerations. Other sources of information used in this assessment include:

- BAAQMD California Environmental Quality Act (CEQA) Guidelines: Assessing the Air Quality Impacts of Projects and Plans (BAAQMD 1999)
- Bay Area 2000 Clean Air Plan and Triennial Assessmerpus Mastera2b4MAreapafo6(e)-334(A)-13()-6377-6())]TJ 0 Tc 0 Tw /I

Table 4.2-1
Ambient Air Quality Standards

Air Pollutant	State Standard	Federal Primary Standard[1]

Air Pollutant	State Standard	Federal Primary Standard[1]	Most Relevant Health Effects[2]
Sulfates	25 µg/m^3, 24-hr avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
Lead[4]	1.5 µg/m^3, 30-day avg.	1.5 µg/m^3, calendar quarterly average	(a) Increased body burden; and (b) Impairment

violated at any site in the area during a three-year period (CARB 2003). Under the CAA, an area is in attainment for a particular pollutant if the area meets the national primary or secondary ambient air quality standard for that pollutant (US EPA 2008a).

Nonttainment Areas

Under the CCAA, an area is in nonattainment for a particular pollutant if there was at least one violation of the CAAQS for that pollutant in the area (CARB 2003). Under the CAA, a nonattainment area for a pollutant is any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the primary or secondary NAAQS for that pollutant (US EPA 2008a). Air basins designated as nonattainment for the ozone-8 hour NAAQS are ranked as marginal, moderate, serious, severe, or extreme depending on the area's 8-hour design value calculated using the most recent 3 years of data. Air basins designated as nonattainment for the CO NAAQS are ranked as not classified, moderate, or serious (US EPA 2008a). CARB has another subcategory referred to as nonattainment/transitional. This designation refers to nonattainment areas that are close to attaining the

Table 4.2-2
San Francisco Bay Area Air Basin Attainment Status

Pollutant	Federal Standards	State Standards
Ozone-1 hour	No federal standard[1]	Nonattainment[2]
Ozone-8 hour	Nonattainment/Marginal	Nonattainment
PM_{10}	Unclassifiable	Nonattainment
$PM_{2.5}$	Attainment/Unclassifiable	Nonattainment
CO	Attainment/Unclassifiable	Attainment
Nitrogen dioxide	Attainment/Unclassifiable	Attainment[3]
Sulfur dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Hydrogen sulfide	No federal standards	Unclassified
Sulfates	No federal standards	Attainment
Vinyl Chloride[4]	No federal standards	Unclassified
Visibility-Reducing particulates	No federal standards	Unclassified

Sources: California Air Resources Board. "Area Designations Maps/State and National." http://www.arb.ca.gov/desig/adm/adm.htm. September 11, 2007.

United States Environmental Protection Agency. "Region 9: Air Programs – Air Quality Maps." http://www.epa.gov/region09/air/maps/maps_top.html. August 8, 2008

[1] The 1-hour ozone NAAQS was revoked on June 15, 2005.

[2] CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was Severe.

[3] CARB has not issued new area classifications based on the new state 1-hour and annual arithmetic mean NO_2 standards. The designation shown is based on the previous 0.25 ppm 1-hour standard.

[4] CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.

4.2.2.3 Local Air Quality

CARB has established and maintains a network of sampling stations in conjunction with localhith localh8

southeast of the project site. Monitored pollutants from this station that are used in this impact analysis include PM_{10}, $PM_{2.5}$, CO, and NO_2. Finally, the closest monitoring station to the project site that monitors SO_2 is located at 2956 Treat Boulevard in Concord, located approximately 14 miles north of the project site.

Table 4.2-3, Ambient Pollutant Concentrations Registered Nearest to the Project Site, lists the measured ambient pollutant concentrations and the violations of state and federal standards that have occurred at the abovementioned monitoring stations from 2003 through 2007, the most recent years in which data are available. As shown, the Hayward monitoring station registered values above state and federal standards for O_3, although the federal standard has not been exceeded since 2003. The state

Existing sensitive land uses on the campus include the Pioneer Heights I, II, and III student housing complexes. Sensitive land uses in the vicinity of the campus include multi-family residential developments to the north and east, single-family residences to the east, Garin Regional Park to the south, and a limited number of residences to the west.

4.2.2.5 Localized Carbon Monoxide Concentrations

Traffic congestion along roadways and at intersections has the potential to generate localized high levels of CO. The BAAQMD monitoring stations have not recorded exceedances of the state or federal CO standards since 1991. However, because elevated CO concentrations are generally localized, heavy traffic volumes and congestion at specific intersections or roadway segments can lead to high levels of CO (referred to as "hotspots") although concentrations at the nearest air quality monitoring station may be below state and federal standards.

4.2.2.6 Surrounding Sources of Air Emissions

Land uses surrounding the campus include single- and multi-family residential developments, open space, public and quasi-public uses, and commercial uses. To the west of the campus a mix of residential, retail and commercial, and auto-oriented and auto-serving uses adjoin Mission Boulevard, a ma(in)-27 anan8(f)-288(uN9T

- Nitrous oxide (N_2O). Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.

- Hydrofluorocarbons (HFCs). HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 6,300 for HFC-236fa.

- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. PFCs are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years). The GWPs of PFCs range from 5,700 to 11,900.

- Sulfur hexafluoride (SF_6). Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF_6 is the most potent GHG that has been evaluated by the IPCC with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]) (US EPA 2006b).

- Water vapor. Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Water vapor and clouds contribute 66 to 85 percent of the greenhouse effect (water vapor alone contributes 36 to 66 percent) (Real Climate 2005). Natural processes, such as evaporation from oceans and rivers, and transpiration from plants contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively (US Geological Survey 2008). The primary human-related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount to atmospheric concentrations of water vapor (Energy Information Administration 2008). Therefore, the control and reduction of water vapor emissions is not within reach of human actions. The IPCC has not determined a GWP for water vapor.

Other Greenhouse Gases

In addition to the six major GHGs discussed above (excluding water vapor), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone depletors; therefore, their gradual phase-out is currently in effect. A few of these compounds are discussed below:

- Hydrochlorofluorocarbons (HCFCs). HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the protocol are subject to a consumption cap and gradual phase-out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWPs of HCFCs range from 93 for HCFC-123 to 2,000 for HCFC-142b (US EPA 1996).

- 1,1,1-trichloroethane. 1,1,1-trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. In 1992, the US EPA issued Final Rule 57 FR 33754 scheduling the phase-out of methyl chloroform by 2002 (US EPA 2008c). Therefore, the threat posed by methyl chloroform as a GHG will diminish. Nevertheless, the GWP of methyl chloroform is 110 times that of carbon dioxide (US EPA 1996).

- Chlorofluorocarbons (CFCs). CFCs are used as refrigerants, cleaning solvents, and aerosol spray propellants. CFCs were also part of the US EPA's Final Rule 57 FR 3374 for the phase-out of ozone depleting substances. CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere, contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 4,000 for CFC-11 to 11,700 for CFC-13 (US EPA 2008d).

- Ozone. Ozone occurs naturally in the stratosphere where it is largely responsible for filtering harmful ultraviolet (UV) radiation. In the troposphere, ozone acts as a GHG by absorbing and re-radiating the infrared energy emitted by the earth. As a result of the industrial revolution and rising emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) (ozone precursors), the concentrations of ozone in the troposphere have increased (IPCC 2008). Due to the short life span of ozone in the troposphere, its concentration and contribution as a GHG is not well established. However, the greenhouse effect of tropospheric ozone is considered small, as the radiative forcing[3] of ozone is 25 percent of that of carbon dioxide (IPCC 2007, Figure TS.5)

Contributions to Greenhouse Gas Emissions

Global

Anthropogenic GHG emissions worldwide as of 2005 (the latest year for which data are available for Annex 1 countries) totaled approximately 30,800 CO_2 equivalent million metric tons ($MMTCO_2E$).[4] The global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data (UNFCCC 2008a and UNFCCC 2008b).[5]

Table 4.2-4
Six Top GHG Producer Countries and the European Community

Emitting Countries	GHG Emissions ($MMTCO_2E$)*
United States	7,241.5[1]
China	4,882.7[2]
European Community	4,192.6[1]
Russian Federation	2,132.5[1]
India	1,606.5[2]
Japan	1,359.9[1]
Germany[3]	1,001.5[1]
Total	21,415.7

Sources:
[illegible] United Nations Framework Convention [illegible]

(excluding emissions related to imported power) and internationally between Ukraine (418.9 $MMTCO_2E$) and Spain (440.6 $MMTCO_2E$) (UNFCCC 2008a).

A California Energy Commission (CEC) emissions inventory report placed CO_2 produced by fossil fuel combustion in California as the largest source of GHG emissions in 2004, accounting for 81 percent of the total GHG emissions. CO_2 emissions from other sources contributed 2.8 percent of the total GHG emissions, methane emissions 5.7 percent, nitrous oxide emissions 6.8 percent, and the remaining 2.9 percent was composed of emissions of high-GWP gases (CEC 2006). These high GWP gases are largely composed of refrigerants and a small contribution of sulfur hexafluoride (SF_6) used as insulating materials in electricity transmission and distribution.

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions are presented in Table 4.2-5, California GHG Emissions by Sector in 2004.

Table 4.2-5
California GHG Emissions by Sector in 2004

	Emissions Including Imported Electricity [1]		Emissions Excluding Imported Electricity	
Source Category	GHG Emissions ($MMTCO_2E$)	Percent of Total	GHG Emissions ($MMTCO_2E$)	Percent of Total
Agriculture	27.9	5.8%	27.9	6.6%
Commercial Uses	12.8	2.6%	12.8	3.0%
Electricity Generation	119.8	24.7%	58.5	13.8%
Forestry (excluding sinks)	0.2	0.0%	0.2	0.0%
Industrial Uses	96.2	19.9%	96.2	22.7%
Residential Uses	29.1	6.0%	29.1	6.9%
Tati 82.4				43.1%
Other[c]	16.0	3.3%	16.0	3.8%
T f Q qtals	484.4			
		100.0%	423.1	100.0%

Source: California Air Resources B f Q 4(a)-4(r)16(d)-8(.)-586(S)4(a)5(a)1(f)-6(f)-573(R)15(e)16(p)-8 and 2020 4(rt)5(:)-571(C)-5(a)1(l)-6(i)

[1] Eissins from imprted electricity account for 61.3 MMTCO $_2$E

Table 4.2-6
Comparison of Global Pre-Industrial and Current GHG Concentrations

Greenhouse Gas	Early Industrial Period Concentrations (ppm)	Natural Range for Last 650,000 Years (ppm)	2005 Concentrations (ppm)
Carbon Monoxide	280	180 to 300	379
Methane	715	320 to 790	1774
Nitrous Oxide	270	NA	319

Source: Intergovernmental Panel on Climate Change. Climate Change 2007: The Physical Science Basis, Technical Summary. Cambridge: Cambridge University Press, 2007.

Effects of Global Climate Change

The primary effect of global climate change has been a rise in the average global tropospheric temperature of 0.2° Celsius per decade, determined from meteorological measurements world-wide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century (IPCC 2007). Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- Declining sea ice and mountain snowpack levels, thereby increasing sea levels and sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures (IPCC 2007);
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets (IPCC 2007);
- Changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2007);
- Declining Sierra snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years (CalEPA 2006);
- Increasing the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas located in the Southern California area and the San Joaquin Valley by the end of the 21st century (CalEPA 2006); and
- Increasing the potential for erosion of California's coastlines and sea water intrusion into the Delta and associated levee systems due to the rise in sea level (CalEPA 2006).

4.2.3 REGULATORY CONSIDERATIONS

Local air districts, such as the BAAQMD, and other agencies prepare air quality management/attainment plans and submit them to CARB for review and approval. Once a plan is approved, CARB forwards the plan to the US EPA as a SIP revision. The US EPA reviews the plan to determine if it conforms to the 1990 amendments and would achieve that air basin's air quality goals. Upon a satisfactory review, approval of the plan is published in the Federal Register.

In general, air quality management/attainment plans contain a discussion of ambient air data and trends; a baseline emissions inventory; future-year projections of emissions, which account for growth projections and already adopted control measures; a comprehensive control strategy of additional measures needed to reach attainment; attainment demonstration, which generally involves complex modeling; and contingency measures. Plans may also include interim milestones for progress toward attainment. The status of the SFBAAB with respect to attainment with the NAAQS is summarized above in Table 4.2-2.

The 1990 amendments also list 189 hazardous air pollutants (HAPs), which are carcinogenic, mutagenic, and/or reproductive toxicants, to be reduced. The air toxics program under the CAA involves locating all major (greater than 10 tons per year [tpy]) and area emission sources in order to implement Maximum Achievable Control Technology (MACT) to reduce HAP emissions and their associated health impacts.

4.2.3.2 State Laws and Regulations

The California Clean Air Act (CCAA) established a legal mandate for air basins to achieve the CAAQS by the earliest practical date. The CAAQS, established by CARB, apply to the same seven NAAQS, as well as for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. CAAQS are more stringent than the NAAQS, and in the case of PM_{10} and SO_2, far more stringent.

As a branch of the California Environmental Protes(v)11(o)-8.96 Tf 1 0 0 1 72 350 Tm [(T)-12(n(th)4(e)9)-353(o)-8(l)

designate areas of the state as “attainment,” “nonattainment,” or “unclassified” according to state

- 2001 Ozone Attainment Plan
- 2005 Ozone Strategy

The Bay Area 2000 Clean Air Plan and the 2005 Ozone Strategy fulfill the planning requirements of the CCAA, while the 2001 Ozone Attainment Plan fulfills the federal CAA requirements.

The BAAQMD also adopted specific rules and regulations that limit emissions generated by various uses and/or activities, as well as identify specific pollution reduction measures that must be implemented in association with various uses and activities.

The BAAQMD is not required to develop a PM plan because the Basin is currently unclassifiable for the federal standard for PM_{10} and in attainment for the federal standard for $PM_{2.5}$. However, the US EPA lowered the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006 and is required to designate the Basin's attainment status for the new standard by December of 2009 (BAAQMD 2008a). If the Basin is found to be in nonattainment for the new national standard, the BAAQMD would be required to prepare a PM plan.

The BAAQMD reviewed the list of 103 potential particulate matter control measures prepared by CARB in compliance with SB 656, and prepared and adopted the SB656 Particulate Matter Implementation Schedule. The schedule was adopted by the District's Board of Directors on November 16, 2005 (BAAQMD 2005).

Bay Area 2000 Clean Air Plan and Triennial Assessment

The CCAA requires areas not complying with the one-hour average ozone standard to prepare plans to reduce ozone. The first clean air plan (CAP) adopted by the BAAQMD to achieve this standard was in 1991. The CAP was subsequently updated in 1994 and 1997. The most recent update was in December 2000 when the Bay Area 2000 Clean Air Plan and Triennial Assessment was adopted (BAAQMD 2000). The 2000 CAP represents the third triennial update to the 1991 CAP.

The goal of each of the CAPs is to reduce emissions of ROG and NOx, which are precursors to the formation of ozone in the lower atmosphere. The CAPs are intended to focus on the near-term actions through amendments of existing regulations and promulgation of new district regulations. The 2000 CAP continues the air pollution reduction strategies established by the 1991 CAP and prior updates.

Like the 1997 CAP, the 2000 CAP continues to discourage urban sprawl while strongly endorsing high-density mixed-use developments near transit centers in order to reduce the need for commuting by personal vehicles. The transportation control measures (TCMs) in the 2000 CAP also remain unchanged

mobile source control measures through incentive programs; and transportation control measures through transportation programs in cooperation with MTC, transit agencies, and local governments.

The district has begun a process to update the 2005 Ozone Strategy in cooperation with ABAG and MTC. The 2007 Ozone Strategy will address achieving attainment for both the state 1-hour and 8-hour ozone standard, and will continue to focus on reducing transport of ozone and ozone precursors to neighboring air basins. In addition, a review of the progress achieved from 2004 to 2006 will be evaluated and used to establish meaningful and effective control measures for 2007 to 2009.

BAAQMD Rules and Regulations

The BAAQMD is responsible for limiting the amount of emissions that can be generated throughout the Basin by stationary sources. Specific rules and regulations have been adopted that limit emissions that can be generated by various uses and/or activities and identify specific pollution reduction measures that must be implemented in association with various uses and activities. These rules regulate not only the emissions of pollutants regulated under the NAAQS and the CAAQS, but also the emissions of toxic air contaminants. The rules are also subject to ongoing refinement by the BAAQMD.

In general, all stationary sources with air emissions are subject to BAAQMD's rules governing their operational emissions. Some emissions sources are further subject to regulation through t(ti)-9J 1 0 0 1 72(5d2t10(r)]TJ

Strategy 2: Require pedestrian-, bicycle-, and transit-oriented features in new development projects.

Strategy 3: Encourage compact development featuring a mix of uses that locates residences near jobs and services.

Policy 12: Support implementation of Transportation Control Measures adopted by the Bay Area Air Quality Management District.

Strategy 1: Work with regional and local organization to promote ridesharing opportunities.

Strategy 2:

In December 2004, these regulations were challenged in federal court by the Alliance of Automobile Manufacturers, who claimed that the law regulated vehicle fuel economy, a duty assigned to the federal government. The case had been put on hold by a federal judge in Fresno pending the US Supreme Court's decision in Massac5D(n)41(y)-468(4)sa

these impacts. The Climate Action Team has fulfilled both of these report requirements through its March 2006 Climate Action Team Report to Governor Schwarzenegger and the Legislature (CAT 2006). Some strategies currently being implemented by state agencies include CARB introducing vehicle climate change standards and diesel anti-idling measures, the Energy Commission implementing building and appliance efficiency standards, and the Cal/EPA implementing their green building initiative. The Climate Action Team also recommends future emission reduction strategies, such as using only low-GWP refrigerants in new vehicles, developing ethanol as an alternative fuel, reforestation, solar power initiatives for homes and businesses, and investor-owned utility energy efficiency programs. According to the report, implementation of current and future emission reduction strategies have the potential to achieve the goals set forth in Executive Order S-3-05.

Assembly Bill 32

In furtherance of the goals established in Executive Order S-3-05, the Legislature enacted Assembly Bill 32 (AB 32, Nuñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. AB 32 represents the first enforceable statewide program to limit GHG emissions from all major industries with penalties for noncompliance.

CARB is responsible for carrying out and developing the programs and requirements necessary to achieve the goals of AB 32—the reduction of California's GHG emissions to 1990 levels by 2020. The first action under AB 32 resulted in CARB's adoption of a report listing three specific early action greenhouse gas emission reduction measures on June 21, 2007. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. These early action GHG reduction measures are to be adopted and enforced before January 1, 2010, along with 32 other climate-protecting measures CARB is developing between now and 2011. The early action measures are divided into three categories:

- Group 1 - GHG rules for immediate adoption and implementation
- Group 2 - Several additional GHG measures under development
- Group 3 - Air pollution controls with potential climate co-benefits

The original three adopted early action regulations meeting the narrow legal definition of "discrete early action GHG reduction measures" include:

- A low-carbon fuel standard to reduce the "carbon intensity" of California fuels;
- Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants; and

- Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early action regulations adopted on October 25, 2007, also meeting the narrow legal definition of "discrete early action GHG reduction measures," include:

- Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology;
- Reduction of auxiliary engine emissions of docked ships by requiring port electrification;
- Reduction of perfluorocarbons from the semiconductor industry;
- Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products);
- Require that all tune-up, smog check and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency; and
- Restriction on the use of sulfur hexafluoride (SF_6) from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 greenhouse gas emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT carbon dioxide equivalents (CO_2E). The inventory revealed that in 1990 transportation, with 35 percent of the state's total emissions, was the largest single sector, followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses, 3 percent.

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring the mandatory reporting of GHG emissions for large facilities on December 6, 2007. The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for approximately 94 percent of greenhouse gas emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of carbon dioxide each year from on-site stationary combustion sources. Transportation sources, which account for 38 percent of California's total greenhouse gas emissions, are not covered by these regulations but will continue to be tracked through existing means. Affected facilities will begin tracking their emissions in 2008, to be reported beginning in 2009 with a phase-in process to allow facilities to develop reporting systems and train personnel in data collection. Emissions for 2008 may be based on best available emission data. Beginning in 2010, however, emissions reporting requirements will be more rigorous and will be subject

Table 4.2-7
AB 32 Proposed Scoping Plan Measures

Scoping Plan Measure	Description
SPM-1: California Cap-and-Trade Program linked to Western Climate Initiative	Implement a broad-based cap-and-trade program that links with other Western Climate Initiative Partner programs to create a regional market system. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms. Capped sectors include transportation, electricity, natural gas, and industry. Projected 2020 business-as-usual emissions are estimated at 512 MTCO2E; preliminary 202 emissions limit under cap-and-trade program are estimated at 365 MTCO2E (29 percent reduction).
SPM-2: California Light-Duty Vehicle GHG Standards	Implement adopted Pavley standards and planned second phase of the program. AB 32 states that if the Pavley standards (AB 1493) do not remain in effect, CARB shall implement equivalent or greater alternative regulations to control mobile sources.
SPM-3: Energy Efficiency	Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts. The Proposed Scoping Plan considers green building standards as a framework to achieve reductions in other sectors, such as electricity.
SPM-4: Renewables Portfolio Standard	Achieve 33 percent Renewables Portfolio Standard by both investor-owned and publicly owned utilities.
SPM-5: Low Carbon Fuel Standard	Develop and adopt the Low Carbon Fuel Standard (LCFS). CARB identified the LCFS as a Discrete Early Action item and is developing a regulation for Board consideration in late 2008. In January 2007, Governor Schwarzenegger issued Executive Order S-1-07, which called the reduction of the carbon intensity of California's transportation fuels by at least ten percent by 2020.
SPM-6: Regional Transportation-Related Greenhouse Gas Targets	Develop regional greenhouse gas emissions reduction targets for passenger vehicles. SB 375 requires CARB to develop, in consultation with metropolitan planning organizations (MPOs), passenger vehicle greenhouse gas emissions reduction targetsutili20.

Scoping Plan Measure	Description
SPM-11: Industrial Emissions	Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.
SPM-12: High Speed Rail	Support implementation of a high-speed rail (HSR) system. This measure supports implementation of plans to construct and operate a HSR system between Northern and Southern California serving major metropolitan centers.
SPM-13: Green Building Strategy	Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.

lead agency's judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable.

Senate Bill 375

The California Legislature passed SB 375 (Steinberg) on September 1, 2008. SB 375 would require CARB to set regional greenhouse gas reduction targets after consultation with local governments. The target must then be incorporated within that region's Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy. SB 375 also requires each region's Regional Housing Needs Assessment (RHNA) to be adjusted based on the Sustainable Communities Strategy in its RTP. Additionally, SB 375 will reform the environmental review process to create incentives to implement the strategy, especially transit priority projects. The Governor signed SB 375 into law on September 30, 2008.

Other Statewide and Regional Activities

BAAQMD Climate Protection Program

On June 1, 2005 the BAAQMD Board of Directors adopted a resolution establishing a Climate Protection Program and acknowledging the link between climate protection and programs to reduce air pollution in the region. The goal of the Climate Protection Program is to integrate climate protection activities into existing air quality programs. The BAAQMD is continually seeking ways to integrates climate protection into current BAAQMD functions, including grant programs, CEQA commenting, regulations, inventory development, and outreach. In addition, the Climate Protection Program emphasizes collaboration with ongoing climate protection efforts at the local and State level, public education and outreach and technical assistance to cities and counties.

GHG Fee for Stationary Sources Adopted

On May 21, 2008, the BAAQMD Board of Directors approved a new fee on air pollution sources in the region to help defray the costs of the BAAQMD's climate protection work. Industrial facilities and businesses that are currently required to submit to the BAAQMD an air quality permit to operate will have the modest fee of 4.4 cents per metric ton of greenhouse gas emissions added to their permit bill. The fee will apply to Climate Protection Program activities related to stationary sources.

GHG Technology Studies

As part of the ongoing climate protection activities, the BAAQMD is conducting a study to identify potential greenhouse gas mitigation technologies specifically for permitted stationary sources in the Bay

significance approaches are: (1) not establishing a significance threshold for GHG emissions; (2) setting the GHG emission threshold at zero; and (3) setting the GHG emission threshold at some non-zero level. The white paper evaluates potential considerations and pitfalls associated with the three approaches. At the end of the white paper, CAPCOA provides a list of potential mitigation measures and discusses each in terms of emissions reduction effectiveness, cost effectiveness, and technical and logistical feasibility. While programs are still being developed by CARB, the white paper provides public agencies with information to ensure that GHG emissions are, according to CAPCOA, "appropriately considered and addressed under CEQA."

4.2.4 IMPACTS AND MITIGATION MEASURES

4.2.4.1 Significance Criteria

For the purposes of this EIR, air quality impacts would be considered significant if they would exceed the following standards of significance, which are based on Appendix G of the State CEQA Guidelines, the BAAQMD CEQA Guidelines, and The California State University CEQA Handbook. According to these guidelines, a project would normally have a significant impact on air quality if it would

- Conflict or obstruct with implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative three apprissionscted air q3(c)-0 0 (e)-3(e)-is(r)-3(e)-3-8(j)-7(e)ireleam

Local Carbon Monoxide Concentrations

Congested intersections, roadways, and parking structures where high ambient concentrations of CO accumulate are termed CO "hotspots." Traffic-congested roadways and intersections that operate at levels of service (LOS) E, or F have the potential to generate localized high levels of CO within approximately 1,000 feet of a roadway. Indirect CO emissions are considered significant if they will

proposal, the threshold for determining whether a project's emissions are significant is not zero emissions, but must be a stringent performance-based threshold to meet the requirements of AB 32. If the project meets certain specific yet to be developed performance standards for several categories of emissions, including construction emissions, building energy use, water use, solid waste, and transportation and the project emits no more than a certain to be determined amount of metric tons of carbon equivalents per year, the project's impact would not be significant. According to CARB, California Energy Commission Tier II building energy use standards are proposed to be used, which generally require a reduction in energy usage of 30 per cent beyond Title 24 building code requirements. Although specific numeric significance criteria or thresholds are still to be developed by the CARB and/or BAAQMD, the climate change impacts of the proposed project in this EIR are evaluated based on the approach outlined in CARB's recent proposal.

The impact related to climate change is evaluated in this Draft EIR using the following significance threshold:

- The proposed project will be considered not to impede the emissions reduction targets developed by the state pursuant to AB 32 if it is consistent with applica pl enumerdeeescoeng

buildings for the Campus (i.e., 850,264 square feet for 9,242 students, which the difference between the 18,000 FTE capacity after the proposed project and the current student population of 8,758 FTE). Therefore, 11,956.52 students were entered in URBEMIS2007 to arrive at 1,100,000 square feet of building space that would be constructed. To account for the construction of 3,700 student beds and 220 staff and faculty housing units, 1,145 mid-rise apartments were entered into URBEMIS2007. In addition, due to the presence of a calc

emissions to the overall total. Therefore, the PM_{10} emissions associated with the coolers was not calculated. Once calculated, the sum of the daily operational mobile, stationary, and area source emissions were compared with the appropriate operational criteria pollutant emission thresholds for the BAAQMD.

A simplified CALINE4 screening model developed by the BAAQMD was used to predict future CO concentrations at 0 and 25 feet from the intersections in the study area that would operate at LOS D or worse with the proposed development. This methodology assumes worst-case conditions (i.e., wind direction is parallel to the primary roadway and 90 degrees to the secondary road, wind speed of less than 1 meter per second and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations. If the screening model predicts a CO concentration in excess of the CAAQS standard (i.e., a CO hotspot), the complete CALINE4 model is run to more precisely predict future CO concentrations at the intersections in question.

4.2.4.3 Environmental Commitments included in the Proposed Project

The Campus Master Plan includes the following components that would help reduce air emissions.

Transit Plan

The Transit Plan includes a bus/shuttle connection linking the downtown Hayward BART station to the campus. Elements of the Access, Circulation and Parking Framework of the Campus Master Plan that were discussed in Subsection 4.2.4, Regulatory Considerations, would reduce air emissions of the proposed project by reducing the number of vehicle trips travelled. Implementation of these elements would be facilitated by the already-existing shuttle and bus service that connects the campus with the downtown Hayward BART station, other areas of the City of Hayward, and communities to the north and south.

Pedestrian Circulation Plan

The Pedestrian Circulation Plan outlines the locations of proposed primary pedestrian malls, major pedestrian circulation pathways, primary pedestrian entries, and pedestrian bridges. Pedestrian facilities in the immediate project area include sidewalks along a portion of the north side of Carlos Bee Avenue, and along Harder Road near the campus entrance.

Bicycle Circulation

Bicycle circulation throughout the campus is also included in the Access, Circulation, and Parking Framework. Class II and III bicycle routes already exist in the area.

BAAQMD does not require quantification of construction emissions; rather it emphasizes effective and comprehensive control measures to minimize the generation of PM_{10} fugitive dust. If all of the appropriate dust-control measures specified in the BAAQMD CEQA Guidelines, Table 2, Feasible Control Measures for Construction Emissions of PM_{10}, are implemented, the district considers the impact related to construction emissions to be less than significant (BAAQMD 1999, p. 14). In addition to the fugitive dust control measures, the project applicant would also be subject to the requirements of Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), which would reduce asbestos exposure impacts to a less than significant level. In the event that campus development projects did not implement BAAQMD recommended dust control measures or the requirements of Regulation 11, Rule 2, campus construction would result in a significant impact related to construction emissions. To address this, all campus construction projects would implement MP Mitigation Measure AIR-1a, and those construction projects that involve demolition would implement both MP Mitigation Measures AIR-1a and -1b.

MP MM AIR-1a: The control measures contained in Table 2 of the BAAQMD CEQA Guidelines listed below shall be implemented, as appropriate and feasible, during construction of each project under the proposed Campus Master Plan.

The following Basic Control Measures shall be implemented at all construction sites:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Pave, apply water three times daily (or as sufficient to prevent dust from leaving the site), or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily or as appropriate (with water sweepers using reclaimed water if possible) all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily or as appropriate (with water sweepers using reclaimed water if possible) if visible soil material is carried onto adjacent public streets.

In addition to the Basic Control Measures, the following Enhanced Control Measures shall be implemented at construction sites greater than 4 acres in area:

- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily (or as sufficient to prevent dust from leaving the site), or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

-

Table 4.2-9
Estimated Construction Emissions for the Campus Master Plan (Mitigated)

Construction Year	Emissions in Pounds Per day	
	PM_{10}	$PM_{2.5}$
2009	6.91	4.09
2010	9.99	6.89
2011	9.63	6.56
2012	9.12	6.09
2013	8.65	5.66
2014	8.13	5.18
2015	7.75	4.83
2016	7.35	4.46
2017	6.96	4.11
2018	6.58	3.75
2019	6.21	3.41
2020	5.98	3.20
2021	5.97	3.19
2022	5.97	3.19
2023	5.97	3.19
2024	5.97	3.19
2025	5.97	3.19
2026	5.97	3.19
2027	5.97	3.19
2028	4.31	2.15
2029	4.31	2.15

ROG, NO_X, or PM_{10} that exceed BAAQMD's operational thresholds, it would result in a significant air quality impact.

Summertime and wintertime mobile, area, stationary source emissions and on-going construction activity from the proposed project are presented in Table 4.2-10, Estimated Ongoing Emissions (Unmitigated).

Table 4.2-10
Estimated Ongoing Emissions (Unmitigated)

	Emissions in Pounds per Day					
Emissions Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summertime Emissions[1]						
Stationary Sources	3.98	17.70	54.58	2.17	5.50	5.50
Operational (Mobile) Sources	84.40	40.81	515.09	1.37	246.96	46.70
Area Sources	91.83	38.41	29.36	0.00	0.08	0.08
Construction Emissions[3]	18.87	65.97	54.90	0.01	44.22	11.79
Summertime Emission Totals	199.08	162.89	653.93	3.55	296.76	64.07
BAAQMD Thresholds	80	80	—	—	80	—
Exceeds Threshold?	YES	YES	—	—	YES	—
Wintertime Emissions[2]						
Stationary Sources	3.98	17.70	54.58	2.17	5.50	5.50
Operational (Mobile) Sources	53.28	60.61	541.84	1.18	246.96	46.70
Area Sources	91.58	38.37	26.27	0.00	0.07	0.07
Construction Emissions[3]	18.87	65.97	54.90	0.01	44.22	11.79
Wintertime Emission Totals	231.78 167.71	182.65 182.65182.6	677.59677.5 9	3.36	296.73 296.75	64.06
BAAQMD Thresholds	80	80	—	—	80	—
Exceeds Threshold?	YES	YES	—	—	YES	—

Source: Impact Sciences, Inc. Detailed URBEMIS2007 and stationary source emissions calculations are provided in Appendix 4.2.

reductions based on these measures as it would depend upon the participation level of the recommended carpool and mass-transit programs. However, URBEMIS2007 does provide methodologies for calculating the reductions associated with energy efficiency beyond Title 24, local transit services, free transit passes, and parking supply reductions. The energy efficiency beyond Title 24 was assumed to be 30 percent, which is stated as a goal in the proposed Master Plan. The effects of these mitigation measures are provided in Table 4.2-12, Estimated Operational Emissions for the Campus Master Plan (Mitigated). The full extent of the mitigation measures would reduce emissions beyond those presented in Table 4.2-12. However, as shown in Table 4.2-12, emissions of ROG, NO_x, and PM_{10} would remain significant after the implementation of mitigation measures.

The SFBAAB is currently in nonattainment/marginal for the federal standard for ozone-8 hour, and in nonattainment for the state standards of ozone-1 hour, ozone-8 hour, PM_{10}, and $PM_{2.5}$. Bay Area 2000 Clean Air Plan and Triennial Assessment (2000 CAP) is the regional clean air plan that is focused on reducing the regional emissions of ROG and NOx, which are precursors to the formation of ozone in the lower atmosphere. The 2000 CAP is intended to focus on the near-term actions through amendments of existing regulations and promulgation of new district regulations. The 2000 CAP continues to discourage urban sprawl while strongly endorsing high-density mixed-use developments near transit centers in order to reduce the need for commuting by personal vehicles. The 2000 CAP includes the transportation control measures (TCMs) to reduce emissions from automobiles. BAAQMD CEQA Guidelines state that if the population and vehicle miles traveled growth rates of a land use plan (such as the Campus Master Plan) are less than or equal to those in the most recent CAP, then the air quality impacts of the plan would not be significant. However, there is no information available at this time to indicate that the increment or the rate of population growth associated with the Campus Master Plan is included in the 2000 CAP and therefore, it appears that campus growth and the emissions associated with the campus growth are not accounted for in the regional CAP. Because the emissions are not likely accounted for in the 2000 CAP and because the emissions would not be reduced to levels below BAAQMD thresholds even with mitigation, the implementation of the proposed Master Plan would potentially hinder the attainment of the regional air quality plan.

The Campus will implement the following mitigation measures to reduce this impact to the maximum extent possible.

MP MM AIR-2a: Implement MP Mitigation Measure TRANS-1.

MP MM AIR-2b: To the extent feasible, future development within the campus shall incorporate the strategies to reduce energy demand and associated air emissions as listed in Table 4.2-10.

MP Impact AIR-3: The Proposed Project would increase carbon monoxide concentrations at busy intersections and along congested roadways in the project vicinity but would not expose sensitive receptors to substantial pollution concentrations.

Level of Significance: Less than significant

The proposed project was evaluated for its potential to cause high levels of CO due to traffic associated with the development. Motor vehicles are a primary source of pollutants within the project vicinity. Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO "hotspots." CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create CO hotspots that exceed the state ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. The federal levels are less stringent than the state standards and are based on 1- and 8-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance would occur based on the state standards prior to exceedance of the federal standard.

The proposed project was evaluated to determine if it would cause a CO hotspot utilizing a simplified CALINE4 screening model developed by the Bay Area Air Quality Management District (BAAQMD). The simplified model is intended as a screening analysis that identifies a potential CO hotspot. If a hotspot is identified, the complete CALINE4 model is then utilized to determine precisely the CO concentrations predicted at the intersections in question. This methodology assumes worst-case conditions (i.e., wind direction is parallel to the primary roadway and 90 degrees to the secondary road, wind speed of less than 1 meter per second and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations.

This methodology is utilized to predict future CO concentrations 0 and 25 feet from the intersections in the study area based on projected traffic volumes from the intersections contained in the traffic study for the proposed project. The intersections were determined in the traffic study

Concentrations-With Third Entrance, and Table 4.2-14, Cumulative (2030) Plus Project CO Concentrations-Without Third Entrance. Representative receptors are located 0 and 25 feet from each intersection.

Table 4.2-13
Cumulative (2030) Plus Project CO Concentrations
With Third Entrance

	0 Feet	25 Feet

Table 4.2-14
Cumulative (2030) Plus Project CO Concentrations
Without Third Entrance

Intersection	0 Feet		25 Feet	
	1-Hour[1]	8-Hour[2]	1-Hour[1]	8-Hour[2]
1. Carlos Bee Blvd./Hayward Blvd.	4.0	2.5	3.7	2.3
2. Carlos Bee Blvd./West Loop Rd.	3.3	2.1	3.3	2.0
6. Foothill Blvd./Mattox Rd./Castro Valley Blvd.	4.9	3.2	4.2	2.7
7. Foothill Blvd./Grove Way	4.8	3.1	4.2	2.7
8. Foothill Blvd./A St.	4.7	3.1	4.2	2.7
9. Foothill Blvd./D St.	4.2	2.7	3.9	2.5
10. Foothill Blvd./Mission Blvd./Jackson St./E St.	5.1	3.3	4.4	2.8
12. Mission Blvd./Carlos Bee Blvd./Orchard Ave.	5.2	3.4	4.4	2.8
13. Mission Blvd./Harder Rd.	5.0	3.3	4.3	2.8
14. Mission Blvd./Tennyson Rd.	4.8	4.7	4.1	2.6
15. Jackson St./Santa Clara St./Harder Rd.	4.7	3.0	4.2	2.7
Exceeds state 1-hour standard of 20 ppm?	NO	—	NO	—
Exceeds federal 1-hour standard of 35 ppm?	NO	—	NO	—
Exceeds state 8-hour standard of 9.0 ppm?	—	NO	—	NO
Exceeds federal 8-hour standard of 9 ppm?	—	NO	—	NO

Source: Impact Sciences, Inc.
Emissions calculations are provided in Appendix 4.2.
[1] State standard is 20 parts per million. Federal standard is 35 parts per million.
[2] State standard is 9.0 parts per million. Federal standard is 9 parts per million.

As shown above, the contribution of traffic from cumulative projects plus the proposed project would not generate CO concentrations that would exceed state CO ambient air quality standards at any of the intersections evaluated. Therefore, the project's impact under this significance criterion would be less than significant and the project would not expose sensitive receptors to a substantial CO concentration.

Mitigation Measure: No mitigation is required.

MP Impact AIR-4: The Proposed Project would not create objectionable odors affecting a substantial number of people.

Level of Significance: Less than significant

The BAAQMD method for determining potential odor impacts involves two steps (BAAQMD 1999, p. 17). The first step is to determine whether the proposed project would result in an odor source and whether receptors are within specified distances from the source. The second step is, if the project would result in an odor source within the specified distances to receptors, conduct a detailed analysis pursuant to BAAQMD CEQA Guidelines. The guidelines include the following of the types of facilities, presented in Table 4.2-15, Odor Source Screening Distances, known to emit objectionable odors and the screening distances from the odor source:

Table 4.2-15
Odor Source Screening Distances

Type of Operation	Project Screening Distance
Wastewater Treatment Plan	1 mile
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shops)	1 mile
Rendering Plant	1 mile
Coffee Roaster	1 mile

Source: Bay Area Air Quality Management District, CEQA Guidelines.

None of the facilities that would be constructed on the campus under the proposed Master Plan are amongst those listed in the table above and none of the facilities would involve sources of objectionable odors. Odors could potentially be generated during short-term architectural coating activities. Architectural coatings contain VOCs that may include odiferous compounds. However, any architectural coatings used in buildings constructed on the campus under the proposed Master Pan would be required to comply with the low-VOC requirements of BAAQMD Regulation 8, Rule 3 (Architectural Coatings). This rule limits the quantity of VOCs contained in architectural coatings sold, used, or manufactured within the district. Compliance with Regulation 8, Rule 3, would minimize any odor impacts from architectural coating operations. In addition, any odors associated with architectural coatings would cease following completion of the building project, except for minor periodic maintenance painting. Therefore, the project's impact with respect to odors would be considered less than significant.

The land uses surrounding the project site include residential units and recreational open space. These uses are not anticipated to constitute a significant odor source. Therefore, residents of the proposed project would not be exposed to objectionable odors from adjacent land uses and the impact with respect to this criterion would be less than significant.

Therefore, the proposed project would not create objectionable odors affecting a substantial number of people, and would be less than significant under this significance criterion.

Mitigation Measure: No mitigation is required.

MP Impact AIR-5: The Proposed Project could expose individuals to toxic air contaminants.

Level of Significance: Potentially significant

Sources of toxic air contaminants (TACs) around and within the campus include diesel buses and trucks, laboratory emissions, central plant generators and boilers, water heaters/boilers in individual buildings, and emergency generators.

CARB is required by state law to identify and control toxic air contaminants and has prepared a stationary source air toxics emissions inventory. The inventory identifies air toxics emissions from sources in each California air district and, where feasible, quantifies these emissions based on information reported through the Air Toxics Hot Spots Program (Air Toxics Hot Spots Information and Assessment Act, AB 2588, Connelly as amended by SB 1731, Calderon). Air toxics monitoring stations are located throughout California. These stations, maintained either by CARB or the local APCD, monitor and record existing levels of various organic gases and metals in the air. There are a number of stations throughout the Bay Area that monitor toxic air contaminants.

The BAAQMD is responsible for administering federal and state regulations related to TACs. In compliance with federal law, BAAQMD Regulation 11, Hazardous Pollutants, implements federal national emissions standards for hazardous air pollutants (NESHAPs) and maximum achievable control technology (MACT) requirements through the federal operating permit program.

Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants replaced the District's Risk Management guidelines on July 1, 2005. This rule provides preconstruction review for potential health impacts from new and modified sources of toxic air contaminants. Toxic emissions are estimated for all sources within a proposed project; if emissions from a proposed project exceed the trigger levels, a Health Risk Screening Analysis (HRSA) is required to determine project risk and risk from each source.

BAAQMD guidelines f

significant air quality impact. As a result, the proposed project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment. This impact would be significant.

MP MM AIR-6: Implement Mitigation Measures AIR-1, AIR-2a, and AIR-2b.

Significance after Mitigation: For reasons presented in MP Impact AIR-2, the emissions of criteria pollutants would still exceed the thresholds and therefore this impact would remain significant and unavoidable.

MP Impact AIR-7: Although the Proposed Project would result in greenhouse gas emissions, its contribution to the significant cumulative impact associated with greenhouse gas emissions would not be cumulatively considerable.

Level of Significance:isLt6 Tf 1 0-2(1 151 543 T9896 Tf 1 0 0h1 72 572a)6(t)8(i)-4(o)17t6 Tf 1 0-0 1 280 686 T2196 Tf

- Motor vehicles: The annual CO_2

incorporates specific water conservation measures that would result in 35 percent less water consumption for the entire campus at buildout. While it is not possible to quantify the full extent of the emission reduction associated with all of the mitigation measures identified in the Campus Master Plan, the same

Table 4.2-18
Consistency of Campus Sustainable Strategies with AB 32 Proposed Scoping Plan Measures

Scoping Plan Measure

Scoping Plan Measure	MP Policy/Project Feature/Mitigation Measure

Governor's Office of Planning and Research. 2008. Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review.

Schmidt, Gavin A. 2005. "Water Vapour: Feedback or Forcing?" http://www.realclimate.org/index.php ?p=142.

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Institute of Transportation Studies, University of California, Davis. 1997. Transportation Project-Level Carbon Monoxide Protocol.

Johnson, Stephen L. 2007. Letter to Governor Arnold Schwarzenegger dated December 19.

Pew Center on Global Climate Change. n.d. "Bush Policy vs. Kyoto." http://www.pewclimate.org /what_s_being _done/in_the_world/bush_intensity_targe_2.cfm.

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United Nations Framework Convention on Climate Change. n.d.(b) "Flexible GHG Data Queries" with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries." http://unfccc.int/di/FlexibleQueries.do.

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US Environmental Protection Agency. 2007. "The Accelerated Phase-Out of Class 1 Ozone-Depleting Substances" http://www.epa.gov/ozone/title6/phaseout/accfact.html.

US Environmental Protection Agency. 2008a. "Glossary of Climate Change Terms." http://www.epa.gov/climatechange/glossary.html#Climate_change.

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