4.3

AIR QUALITY

4.3.1 Introduction

The project-related displacement of aircraft to the identified diversion airports would increase aircraft operations at the diversion airports, resulting in an increase in air pollution emissions from aircraft at the diversion airports. This study evaluates the air quality effects of increased aircraft activity at the diversion airports and compares these changes to the applicable significance criteria in each location.

4.3.2 Regulatory Setting

Air quality is affected by the amount and location of pollutant emissions, and by meteorological conditions that influence movement and dispersal of pollutants. Local topography and atmospheric conditions such as wind speed, wind direction, and air temperature gradients provide the link between air pollutant emissions and air quality.

Air pollutants of concern can occur locally, near the source of emissions, or regionally, due to atmospheric interactions downwind of the source. Ozone and its precursors reactive organic gases (ROG; also known as volatile organic compounds, or VOC), and oxides of nitrogen (NOx), sulfates, visibility reducing particles, nitrogen dioxide (NO2), particulate matter of diameter 10 micrometers or less (PM10), and particulate matter of diameter 2.5 micrometers or less (PM2.5) are considered to be regional pollutants because they affect air quality on a regional scale. Ozone can be formed significantly downwind of the source of its precursors by photochemical reactions of NO2 with ROG, while PM10, PM2.5, sulfates, and decreased visibility can result from atmospheric chemical reactions involving NOx, oxides of sulfur (SOx), and ammonia. Pollutants such as carbon monoxide (CO), sulfur dioxide (SO2), lead (Pb), and particulates are considered to be local pollutants because they tend to disperse rapidly with distance from the source. Particulate matter can occur on a regional scale as a result of atmospheric interactions mentioned above, or as direct emissions from automobile exhaust, which can accumulate in the air locally near the emission sources.

Federal, state, and local agencies have adopted rules and regulations requiring evaluation of the impact on ambient air quality of a planned project and appropriate mitigation for air pollutant emissions. Most federal programs to monitor and regulate stationary source emissions are delegated to these regional air quality management districts. State programs administered through the California Air Resources Board (CARB) provide regulatory control over air pollution emissions from mobile sources.

The federal and state laws and regulations also define a group of pollutants called hazardous air pollutants (HAPs), toxic air contaminants (TACs), or air toxics. Exposure to these pollutants can cause or contribute to cancer, birth defects, genetic damage, and other adverse health effects. The source and effects of HAPs are generally local, rather than regional. Evaluation is based on case studies, not standards for ambient concentration. Examples of air toxics include benzene, asbestos, carbon tetrachloride, ammonia, hydrogen sulfide, hydrogen cyanide, and methane.

Certain pollutants, such as carbon dioxide (CO2), are responsible for affecting the earth's climate in what is commonly known as the greenhouse effect. These gases interact with infrared radiation (heat) escaping from the earth's surface, causing a warming of the lower atmosphere. Emissions of these greenhouse gases (GHGs) from combustion of fossil fuels such as gasoline and jet fuel have resulted in an increase in the concentration of GHGs in the atmosphere and, thus, a detectible warming of the planet. Atmospheric GHG concentrations affect climate on a global scale and do not directly affect local air quality. In general, regulations involving GHGs are rare and in early stages of development. A recent California law (Assembly Bill [AB] 32, the Global Warming Solutions Act) represents the first enforceable statewide program, capping GHG emissions to 1990 levels by 2020. Although AB 32 does not amend CEQA, it has established a strong argument for addressing climate change issues at the plan level and project level through CEQA documents.

4.3.2.1 Federal Laws, Standards, and Regulations

Under the authority of the CAA, EPA has established nationwide air quality standards to protect the public health and welfare with an adequate margin of safety. The significance of a measured air pollutant concentration in a geographic region or air basin is determined by comparing it to these federal and, if applicable, state ambient air quality standards.

The federal standards, known as the National Ambient Air Quality Standards (NAAQS), defined at 40 Code of Federal Regulations (CFR) 50, represent the maximum allowable atmospheric concentrations for the following so-called criteria pollutants: ozone, NO2, SO2, PM10, CO, PM2.5, and Pb. The NAAQS are defined in terms of concentration determined over a specified time period. Based on measured ambient criteria pollutant data, EPA designates regions as having air quality equal to or better than the NAAQS as "attainment" and those regions having worse than the NAAQS as "nonattainment." Where not enough data are available to support an attainment or nonattainment designation, the area is deemed unclassified, and treated as an attainment area.

CAA specifies future dates for achieving compliance with these standards and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting the NAAQS. SIPs must include pollution control measures that demonstrate how the NAAQS will be met within a time period determined by the level or classification of nonattainment.

Aircraft Emission Standards

The aircraft emission standards have a 30-year history in the U.S., with new emissions standards being set for different aspect of engines, including:

- 1974: Engine smoke and fuel venting
- 1984: Hydrocarbon emissions
- 1997: NOx and CO
- 2005: Updated NOx emission standards

The EPA standards are equivalent to the NOx emission standards of the United Nation International Civil Aviation Organization (ICAO), which is in alignment with the international standards. These standards are in effect since December 19, 2005 and apply to new aircraft engines utilized on commercial aircraft that include small jets.

Using recent FAA 2003 growth projections (68 *Federal Register* (FR) 56226), aircraft NOx emissions are projected to double by 2030. Aircraft engines produce emissions that are similar to other emissions resulting from fossil fuel combustion. However, aircraft emissions are unusual in that a significant proportion is emitted at high altitude. For the purpose of assessing the potential air quality impacts around airports, EPA suggested that the analysis of aircraft emissions should be between the ground level (airport) and the mixing height (inversion layer) of approximately 3,000 feet above ground level.

The EPA began regulating leaded fuel use in automobiles (tetraethyl lead) in the 1970s, but few restrictions are in place for aviation-use jet fuel. In 2005, EPA stated there is insufficient information to determine that aircraft lead emissions endanger public health and welfare. The EPA also stressed that because a suitable, safe, unleaded aviation fuel has not been developed, regulating leaded aviation fuel would present severe economic repercussions to general aviation businesses and operators.

Federal Climate Change Policy

Twelve U.S. states and cities (including California), in conjunction with several environmental organizations, sued to force EPA to regulate GHGs as a pollutant pursuant to the federal CAA (Massachusetts vs. EPA et al. 549 U.S. 497 (2007),]; . The Supreme Court ruled that the plaintiffs had standing to sue, that GHGs fit within the CAA's definition of a pollutant, and that EPA's reasons for not regulating GHGs were insufficiently grounded in the CAA. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions. In *Center for Biological Diversity v. National Highway Traffic Safety Admin*. 508 F.3d 508 (9th Cir. 2007), a federal court ruled that GHGs must be analyzed in National Environmental Policy Act documents. There are currently no GHG emissions controls on aircraft.

4.3.2.2 State Laws, Standards, and Regulations

The California Clean Air Act (CCAA) of 1988 establishes California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. The CCAA requires attainment of state ambient air quality standards by the earliest practicable date. Attainment plans are required for air basins in violation of the state ozone, CO, SO2, or NO2 standards. Preparation of and adherence to attainment plans are the responsibility of the local air pollution control districts or air quality management districts.

State and Federal Air Quality Standards

The state and federal air quality standards are listed in Table 4.3-1. As indicated, the averaging times for the various air quality standards (the duration over which they are measured) range from 1 hour to 1 year. The standards are read as a concentration, in parts per million (ppm), or as mass of material per a volume of air, in milligrams or micrograms of pollutant per cubic meter of air (mg/m^3 and $\mu g/m^3$, respectively). California's standard for visibility-reducing particles is measured by observation of the opacity of air under specific conditions.

Table 4.3-1. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone	8-Hour	0.08 ppm (157 µg/m3)	0.07 ppm (157 µg/m3)
	1-Hour	—	0.09 ppm (180 µg/m3)
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m3)	9 ppm (10 mg/m3)
	1-Hour	35 ppm (40 mg/m3)	20 ppm (23 mg/m3)
Nitrogen Dioxide (NO2)	Annual	0.053 ppm (100 µg/m3)	—
	1-Hour	—	0.25 ppm (470 µg/m3)
Sulfur Dioxide (SO2)	Annual	0.03 ppm (80 µg/m3)	—
	24-Hour	0.14 ppm (365 µg/m3)	0.04 ppm (105 µg/m3)
	3-Hour	0.5 ppm (1,300 µg/m3)	—
	1-Hour	—	0.25 ppm (655 µg/m3)
Respirable Particulate Matter (PM10)	Annual	—	20 µg/m3
	24-Hour	150 µg/m3	50 µg/m3
Fine Particulate Matter (PM2.5)	Annual	15 µg/m3	12 µg/m3
	24-Hour	35 µg/m3	—
Sulfates (SO4)	24-Hour	—	25 µg/m3
Lead (Pb)	30-Day	—	1.5 µg/m3
	3-Month	1.5 µg/m3	—
Hydrogen Sulfide (H2S)	1-Hour	—	0.03 ppm (42 µg/m3)
Vinyl Chloride (chloroethene)	24-Hour	—	0.010 ppm (26 µg/m3)
Visibility Reducing Particulates	1 Observation (8-hour)	—	Extinction coefficient of 0.23 per km; less than 70% relative humidity.

Source: California Air Resources Board, February 21, 2008.

Criteria Pollutants

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials.

Ozone is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. Ozone precursors (ROGs; equivalent to VOCs) and NOx react in the atmosphere in the presence of sunlight to form ozone. Ozone is primarily a summer air pollution problem because the photochemical reaction rates are directly related to the intensity of ultraviolet light and air temperature. Ozone is considered a regional pollutant; high levels often occur downwind of the emission source because of the length of time between when the ROG form and when they react with light to change to ozone.

Inhalable Particulate Matter

Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled (PM10 and PM2.5). Particulates also reduce visibility and corrode materials.

Particulate emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere.

Carbon Monoxide

CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

CO emissions can create so-called CO hotspots. Since motor vehicles are the dominant source of CO emissions, CO hotspots are normally located near roads and freeways with high traffic volume. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Nitrogen Oxides

NOx are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_x is emitted from the use of solvents and combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, nitrogen dioxide is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

Sulfur Dioxide

Sulfur dioxide is a colorless, pungent gas belonging to the family of SOx, formed primarily by combustion of sulfur-containing fossil fuels (mainly coal and oil), and during metal smelting and other industrial processes. Sulfur oxides can react to form sulfates, which significantly reduce visibility.

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen. Lead, which was used to increase the octane rating in fuel, was phased out of automotive gasoline starting in 1973 and banned completely in a final EPA ruling in 1996, but remains in use in aviation fuel (though not in jet fuel). Since gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels and the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically in recent years.

Toxic Air Contaminants

Although NAAQS exist for criteria pollutants, no ambient standards exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk. In the early 1980s, CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics. The Air Toxics Hot Spots Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, CARB identified particulate emissions from diesel-fueled engines as TACs. In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce diesel PM10 emissions and the associated health risk by 75% in 2010 and by 85% by 2020. The plan identifies 14 measures that CARB will implement over the next several years. Since CARB measures are not applicable to aircraft, the current long-term strategy is to work with EPA and FAA to develop more stringent emission standards for aircraft.

Senate Bill 97 Chapter 185, Statutes of 2007

Senate Bill (SB) 97 requires the Office of Planning and Research to prepare guidelines to submit to the California Resources Agency regarding feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by CEQA. The California Resources Agency is required to certify and adopt these revisions to the State CEQA Guidelines by January 1, 2010. The Guidelines will apply retroactively to any incomplete environmental impact report, negative declaration, mitigated negative declaration, or other related document. In the interim, OPR has released a technical advisory (*CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, OPR, June 19, 2008). OPR offers informal guidance regarding the steps lead agencies should take to address climate change in their CEQA documents. This guidance was developed in cooperation with the Resources Agency, the California Environmental Protection Agency (CalEPA), and the CARB.

Global Warming Solutions Act of 2006 (AB 32)

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this executive order is to reduce California's GHG emissions to 1) 2000 levels by 2010, 2) 1990 levels by the 2020, and 3) 80% below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, including market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

CARB has approved 44 early actions in its October 17, 2007 report (CARB 2007):

- Group 1—Three new GHG-only regulations are proposed to meet the narrow legal definition of "discrete early action greenhouse gas reduction measures" in Section 38560.5 of the Health and Safety Code. These include the Governor's Low Carbon Fuel Standard, reduction of refrigerant losses from motor vehicle air conditioning maintenance, and increased methane capture from landfills. These actions are estimated to reduce GHG emissions between 13 and 26 million metric tons of CO2 equivalent (MMT-CO2e) annually by 2020 relative to projected levels. If approved for listing by the Governing Board, these measures will be brought to hearing in the next 12 to 18 months and take legal effect by January 1, 2010. When these actions take effect, they would influence GHG emissions associated with vehicle fuel combustion and air conditioning, but would not otherwise affect project site design or implementation.
- Group 2—CARB is initiating work on another 23 GHG emission reduction measures in the 2007 through 2009 time period, with rulemaking to occur as soon as possible where applicable. These GHG measures relate to the following sectors: agriculture, commercial, education, energy efficiency, fire suppression, forestry, oil and gas, and transportation.
- Group 3—CARB staff has identified 10 conventional air pollution control measures that are scheduled for rulemaking in the 2007 through 2009 period. These control measures are aimed at criteria and toxic air pollutants, but will have concurrent climate co-benefits through reductions in CO2 or non-Kyoto pollutants (i.e., diesel particulate matter, other light-absorbing compounds and/or ozone precursors) that contribute to global warming.

In consultation with CARB and California Public Utilities Commission, the California Energy Commission (CEC) have published a GHG emission performance standard for local, public-owned electric utilities (pursuant to Senate Bill No. 1368). This standard limits the rate of GHG emissions to a level that is no higher than the rate of emissions of GHGs for combined-cycle natural gas baseload generation, or 1,100 pounds of CO2 per megawatt-hour. (Rulemaking R.06-04-009 at CPUC and Docket # 07-OIIP-01 at CEC).

Executive Order S-03-05 (2005)

California Executive Order S-03-05, put forth by Governor Arnold Schwarzenegger, established the following GHG emission reduction targets for California's state agencies:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels; and
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

The order also required that the Secretary of the California Environmental Protection Agency (CalEPA) to oversee and coordinate emission reduction efforts with the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the Air Resources Board, Chairperson of the Energy Commission, and the President of the Public Utilities Commission. The Secretary of CalEPA is required to report to the Governor and State Legislature biannually on the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing greenhouse gas emissions to meet the targets established in this executive order.

Executive Orders are directives to state agencies from the Governor of California. They do not govern local agency actions nor do they affect the State Legislature. While S-03-05 is an indicator of state policy as interpreted by the Governor, it may or may not reflect the view of the Legislature. It is, however, one of the factors being considered by state agencies such as CARB, California Energy Commission, and the Building Standards Commission in formulating their GHG reduction strategies.

Regulation of Air Pollution Transport between Air Basins

The California Clean Air Act of 1988 directs CARB to assess the contribution of ozone and ozone precursors in upwind basins or regions to ozone concentrations that violate the state ozone standard in downwind basins or regions. The movement of ozone and ozone precursors between basins or regions is referred to as *transport*. In addition, the California Clean Air Act directs CARB to establish mitigation requirements for upwind districts commensurate with their contributions to the air quality problems in downwind basins or regions.

Over the last decade, CARB has published several transport reports that include technical assessments of transport relationships between air basins and regions in California. Along with these technical assessments, the reports have included mitigation requirements for ensuring that upwind areas do their part to limit the effects of transport on their downwind neighbors. CARB originally established mitigation requirements in 1990, which are contained in Title 17, California Code of Regulations, Sections 70600 and 70601. These regulations were amended in 1993 and more recently in 2003. The most recent amendments added two new requirements for upwind districts. These amendments require upwind districts to 1) consult with their downwind neighbors and adopt "all feasible measures" for ozone precursors, and 2) amend their "no net increase" thresholds for permitting so that they are equivalent to those of their downwind neighbors. The amendments clarify that upwind districts are required to comply with the mitigation requirements, even if they attain the state ozone standard in their own district, unless the mitigation measures are not needed in the downwind district.

Air Quality Regions

For the purposes of the project, the potential air service area for the aviation activity consists of the southern California region, which covers the counties of Los Angeles, San Bernardino, and Ventura (Figure 2-2). This is an area generally referred to as the Greater Los Angeles Metropolitan Area and is hereinafter referred to as the Air Service Area (ASA). The proposed phaseout of the noisier and older aircraft from VNY would primarily relocate the aircraft to other airports in the ASA. Therefore, potential reallocation of aviation services must be viewed in the content of a system of airports in the ASA. For the purpose of this air quality analysis, six airports currently serve the ASA. Within the ASA for this project there are three air quality control regions: South Coast Air Basin, South Central Coast Air Basin, and Mojave Desert Air Basin. VNY is located in Los Angeles County, within the South Coast Air Basin. South Coast Air Basin includes Orange County and the non-desert portion of Los Angeles, Riverside, and San Bernardino Counties. Air quality conditions in South Coast Air Basin are under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The South Central Coast Air Basin includes Ventura, Santa Barbara, and San Luis Obispo Counties. For the South Central Coast Air Basin, each County has its own air districts. Ventura County is under the jurisdiction of Ventura County Air Pollution Control District (VCAPCD), and is the only air district in this basin affected by this project. Mojave Desert Air Basin includes the desert portion of Los Angeles County, under the jurisdiction of the Antelope Valley Air Pollution Control District (AVAPCD), which is the only air district in this basin affected by the project.

While this air quality analysis considers aircraft emissions across the three air basins, the project will involve six airports in three counties. Table 4.3-2 lists the airports, counties, air basins, and jurisdictions within the ASA study area.

Table 4.3-2. Summary of Project-related Airports in Counties and Air Basins

Airport	County	Air Basin	Jurisdiction
Van Nuys Airport – VNY	Los Angeles	South Coast	SCAQMD
Bob Hope Airport (Burbank)–BUR	Los Angeles	South Coast	SCAQMD
Los Angeles International Airport – LAX	Los Angeles	South Coast	SCAQMD
Chino Airport – CNO	San Bernardino	South Coast	SCAQMD
Camarillo Airport – CMA	Ventura	South Central Coast	VCAPCD
William J. Fox Airport (Lancaster) – WJF	Los Angeles	Mojave Desert	AVAPCD

Attainment status designations for the air basins containing the six airports relevant to this project are presented in Table 4.3-3. All six airports are in nonattainment air basins for the federal 8-hour ozone standard. South Coast Air Basin is also nonattainment for the federal PM10 and PM2.5 standards and in maintenance status for the federal CO standard as of June 11, 2007. Maintenance status means that the basin has only recently been designated as attainment, and is operating under a 10-year maintenance plan to ensure that pollutant levels are maintained below the relevant standard. All six airports are in nonattainment basins for the state ozone and PM10 standards. South Coast Air Basin and South Central Coast Air Basin are also designated as nonattainment for the state PM2.5 standard.

4.3.2.3 Local Standards and Regulations

Local air quality agencies have the authority to mange air quality and ensure that federal and state ambient air quality standards are achieved and maintained. This includes monitoring ambient air pollutant levels, development of air quality management plans that identify actions necessary to reach or maintain the standards, and implementation and enforcement of rules and regulations to improve air quality in each region.

VNY and three of the diversion airports (BUR, LAX, and CNO) fall within South Coast Air Basin and are under the regulatory jurisdiction of SCAQMD. CMA is located in the South Central Coast Air Basin and is regulated by VCAPCD. WJF is in the portion of the Mojave Desert Air Basin that is regulated by AVAQMD.

Table 4.3-3. Federal and State Attainment Designations for Regions Containing the Six Airports Potentially Affected by the Project

	Federal Designations			State Designations		
	South Coast	Ventura	Mojave	South Coast	Ventura	Mojave
Pollutant	VNY, BUR, LAX, CNO	CMA	WJF	VNY, BUR, LAX, CNO	CMA	WJF
Ozone (1-hour)	—	—	—	NA	NA	NA
Ozone (8-hour)	NA	NA	NA	NA	NA	NA
PM10	NA	A	A	NA	NA	NA
PM2.5	NA	A	A	NA	NA	A
CO	A*	A	A	A	A	A
NO2	A	A	A	A	A	A
SO2	A	A	A	A	A	A
Pb	A	A	A	A	A	A
Sulfates	—	—	—	A	A	A
H2S	—	—	—	A	A	A
Visibility	—	—	—	A	A	A

NA = Nonattainment
A = Attainment or Unclassified
A* = Recent attainment (maintenance status)

2007 Air Quality Management Plan

To ensure continued progress toward clean air and to comply with state and federal requirements, SCAQMD, in conjunction with CARB, SCAG, and EPA, updates its Air Quality Management Plan (AQMP) every 3 years. Each iteration of the plan is an update of the previous plan. The 2007 AQMP was adopted by the SCAQMD Governing Board on June 1, 2007.[1] The 2007 AQMP employs the most up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. The 2007 AQMP also addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. Additionally, the 2007 AQMP builds on the approaches taken in the 2003 AQMP for South Coast Air Basin

[1] South Coast Air Quality Management District. Available: <http://www.aqmd.gov/aqmp/AQMPintro.htm >.

for the attainment of the federal ozone air quality standard. However, the 2007 AQMP highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal CAA. Specifically the 2007 AQMP was prepared because the federal CAA requires an 8-hour ozone nonattainment area to prepare a SIP revision by June 2007 and a PM2.5 nonattainment area by April 2008.

The 2007 AQMP proposes attainment demonstration of the federal PM2.5 standards through a more focused control of SOx, directly emitted PM2.5, and NOx supplemented with volatile organic compounds (VOCs) by 2015. The 8-hour ozone control strategy builds on the PM2.5 strategy, augmented with additional NOx and VOC reductions to meet the standard by 2024, assuming a bump-up is obtained. A bump-up means that SCAQMD is considering requesting a voluntary reclassification. South Coast Air Basin is currently classified as a Severe-17 nonattainment area for the federal ambient 8-hour ozone air quality standard with an attainment date of 2021. “Bumping up” to extreme nonattainment classification for South Coast Air Basin would extend the attainment date to 2024 and allow for the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improving of existing control technologies (CAA Section 182(e)(5) measures).

Aircraft emissions are of great concern to SCAQMD because federal emissions sources, such as airplanes, are essentially unregulated compared to stationary sources within the air districts. As time goes on, aircraft emissions, for some criteria pollutants, become a greater part of the total inventory. For example, according to the 2007 AQMP, NOx emissions from aircraft operations in 2005 comprised about 2% of the annual inventory (15.4 tons per day out of a total inventory of 1,030 tons per day). By 2010 NOx emissions from aircraft operations will increase to almost 4% and by the year 2020 NOx emissions from airport operations will comprise approximately 7.5% of the total inventory.

The 2007 AQMP concluded that substantial emission reductions from all sources, including airports, are necessary. Without aggressive measures to reduce emissions, particularly of NOx, SOx, VOCs, and particulate matter, attaining the federal 8-hour ozone standard by 2023 and the PM2.5 standard by 2014 will be very difficult.

Regional Transportation Plan

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It addresses regional issues relating to transportation, economy, community development, and the environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG prepares the Regional Transportation Plan for the SCAG region every three years, which forms the basis for the land use and transportation components of the AQMP. These chapters are used to prepare the air quality forecasts and the consistency analysis that are included in the AQMP.

The local air districts have set significance criteria and thresholds for air pollutant emissions resulting from projects within their respective regions of jurisdiction. These criteria are presented below.

4.3.2.4 CEQA Thresholds of Significance

Section 15002(g) of the CEQA Guidelines defines "significant effect on the environment" as "a substantial adverse change in the physical conditions that exist in the area affected by the Proposed Project." When an environmental document identifies a significant environmental effect, the government agency approving the project must make findings as to whether the adverse environmental effects have been substantially reduced or if not, why they were not substantially reduced.

As based on Appendix G of the State CEQA Guidelines, the project would result in a significant air quality impact if it would:

- conflict with or obstruct implementation of the applicable AQMP;
- 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 in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- expose sensitive receptors to substantial pollutant concentrations or toxic air contaminants; or
- create objectionable odors affecting a substantial number of people.

The first four of these criteria are quantifiable, and CEQA allows for the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. Accordingly, the significance thresholds for the criteria listed above that are maintained by each air district related to the project formed the basis for analyzing this project's air quality impacts. These thresholds are presented below, beneath headers denoting each air district.

Additionally, in order to address the project's potential climate change and GHG emissions impacts, the project would have a significant air quality impact if it would

- result in an increase in GHG emissions.

CEQA requires that a project incorporate mitigation sufficient to reduce its impacts to levels that are not significant. If mitigation is available but does not reduce the project's impacts to a less-than-significant level, all feasible mitigation must be incorporated, but the impact must be identified as significant and unmitigated.

South Coast Air Quality Management District: VNY, BUR, LAX, and CNO

Criteria Pollutants

SCAQMD has established regional mass daily thresholds of significance for pollutant emissions during project operation. (July 2008). These thresholds are summarized below in Table 4.3-4.

Table 4.3-4. SCAQMD Daily Significance Criteria for Pollutant Emissions

Pollutant	Threshold
Carbon Monoxide (CO)	550 pounds per day
Volatile Organic Compounds (VOC)	55 pounds per day
Nitrogen Oxides (NOx)	55 pounds per day
Sulfur Oxides (SOx)	150 pounds per day
Particulate Matter (PM10)	150 pounds per day
Fine Particulates (PM2.5)	55 pounds per day
Lead (Pb)	3 pounds per day

Toxic Air Contaminants

The SCAQMD CEQA Air Quality Handbook states that the determination of the significance of TACs will be made on a case-by-case basis, considering the following factors:

- the regulatory framework for the toxic material(s) and process(es) involved;
- the proximity of the TACs to sensitive receptors;
- the quantity, volume, and toxicity of the contaminants expected to be emitted;
- the likelihood and potential level of exposure; and
- the degree to which project design will reduce the risk of exposure.

Based on these guidelines, the project would have a significant impact from TACs if:

- onsite stationary sources emit carcinogenic or TACs that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million

($1.0x10^{-5}$) or an acute or chronic hazard index of 1.0 (South Coast Air Quality Management District 1998);[2]

- hazardous materials associated with onsite stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety; or
- the project would be occupied primarily by sensitive individuals within 0.25 mile of any existing facility that emits TACs that could result in a health risk for pollutants identified in District Rule 1401 (South Coast Air Quality Management District 1993).

Thresholds for Odor Impacts

Odor issues are very subjective because of the nature of odors themselves, and because their measurements are difficult to quantify. As a result, this project will be evaluated focusing on the existing and potential surrounding uses and location of sensitive receptors.

SCAQMD Rule 402 (Nuisance) and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section 541700 prohibit the emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of the public. Projects required to obtain permits from SCAQMD, typically industrial and some commercial projects, are evaluated by SCAQMD staff for potential odor nuisance, and conditions may be applied (or control equipment required) where necessary to prevent occurrence of public nuisance.

SCAQMD suggests a threshold based on the distance of the odor source from people and complaint records for a facility or similar facility. The threshold would be more than one confirmed complaint per year averaged over a 3-year period, or three unconfirmed complaints per year averaged over a 3-year period.

Ventura County Air Pollution Control District: CMA

Criteria Pollutants

VCAPCD has established significance thresholds for criteria pollutants to safeguard against project impacts interfering with the attainment of regional air quality objectives in its VCAPCD Air Quality Assessment Guidelines (October 2003). The significance thresholds are based on daily pollutant mass thresholds. If project emissions are below these thresholds, the project is considered to conform to the Ventura County AQMP and would not have a significant air quality impact. Daily pollutant emission thresholds for Ventura County are presented in Table 4.3-5.

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[2] SCAQMD Risk Assessment Procedures for Rules 1401 and 212, November 1998.

Table 4.3-5. VCAPCD Daily Significance Criteria for Pollutant Emissions

Pollutant	Threshold
Reactive Organic Compounds (ROC)	25 pounds per day
Nitrogen Oxides (NO_x)	25 pounds per day

Toxic Air Contaminants

The VCAPCD Air Quality Assessment Guidelines state that the recommended significance thresholds for TACs would be exceeded if the project would:

- increase the lifetime probability of contracting cancer to greater than 10 in 1million (as identified in a Health Risk Assessment [HRA]); or
- cause ground-level concentration of noncarcinogenic toxic air pollutants to result in a hazard index of greater than 1 (as identified in an HRA).

Thresholds for Odor Impacts

VCAPCD suggests a threshold based on the distance of the odor source from people and complaint records for a facility or similar facility. The threshold would be more than one confirmed complaint per year averaged over a 3-year period, or 3 unconfirmed complaints per year averaged over a 3-year period.

Antelope Valley Air Quality Management District: WJF

Criteria Pollutants

AVAQMD has established regional mass daily thresholds of significance for pollutant emissions during project operation in its CEQA and Federal Conformity Guidelines (May 2008). AVAQMD has set both daily and annual emission thresholds, as shown in 4-3-6.

Table 4.3-6. AVAQMD Daily and Annual Significance Criteria for Pollutant Emissions

Pollutant	Daily Threshold	Annual Threshold
Carbon Monoxide (CO)	548 pounds per day	100 tons per year
Volatile Organic Compounds (VOC)	137 pounds per day	25 tons per year
Nitrogen Oxides (NO_x)	137 pounds per day	25 tons per year
Sulfur Oxides (SO_x)	137 pounds per day	25 tons per year
Particulate Matter (PM_{10})	82 pounds per day	15 tons per year

Toxic Air Contaminants

The AVAQMD CEQA Guidelines states that the project would have a significant impact from TACs if the project would:

- expose sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than 10 in 1 million ($1.0x10^{-5}$) and/or an acute or chronic hazard index greater than or equal to 1.0.

Thresholds for Odor Impacts

Thresholds for odor impacts were not listed in the AVAQMD's CEQA and Federal Conformity Guidelines.

4.3.3 Environmental Setting

4.3.3.1 State Greenhouse Gas Emissions

Worldwide, California is the 12th to 16th largest emitter of CO2 (California Energy Commission 2006), and is responsible for approximately 2% of the world's CO2 emissions (California Energy Commission 2006).

Transportation is responsible for 41% of the state's GHG emissions, followed by the industrial sector (23%), electricity generation (20%), agriculture and forestry (8%) and other sources (8%) (California Energy Commission 2006). Emissions of CO2 and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of CO2 include uptake by vegetation and dissolution into the ocean. California GHG emissions in 2004 totaled approximately 492.1 MMT CO_2e.[3]

Climate change could impact the natural environment in California in the following ways, among others:

- rising sea levels along the California coastline, particularly in San Francisco and the San Joaquin Delta resulting from ocean expansion;
- extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- an increase in heat-related human deaths and infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;

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[3] GHG emissions other than CO2 are commonly converted into a CO2 equivalent that expresses the global warming potential (GWP) of different gases. For example, the Intergovernmental Panel on Climate Change (IPCC) finds that NOx has a GWP of 310 and methane has a GWP of 21. The emission of 1 ton of nitrous oxide and 1 ton of methane is represented as the emission of 310 tons of CO2e and 21 tons of CO2e, respectively. This allows for the summation of different GHG emissions into a single total.

- reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- an increase in the severity of winter storms, affecting peak stream flows and flooding;
- changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- changes in distribution of plant and wildlife species as a result of changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission 2005). As such, both the number of people potentially affected by climate change and the amount of anthropogenic GHG emissions expected under a "business as usual" scenario are expected to increase. Similar changes as those noted above for California would also occur in other parts of the world with regional variations in resources affected and vulnerability to adverse effects. GHG emissions in California are attributable to human activities associated with the industry and manufacturing, utilities, transportation, residential, and agricultural sectors (California Energy Commission 2006) as well as natural processes.

4.3.3.2 Climate

California is divided into 15 air basins to regionally manage the state's air resources. An air basin generally has similar meteorological and geographic conditions throughout. VNY, BUR, LAX, and CNOs all lie within South Coast Air Basin, a region encompassing approximately 12,000 square miles within four counties: all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The other diversion airports (CMA and WJF) lie within the South Central Coast Air Basin and Mojave Desert Air Basin, respectively. The discussions on the climate, criteria pollutant emission background, and local air quality condition for the three air basins are provided below.

South Coast Air Basin: VNY, BUR, LAX, and CNO Airports

The distinctive climate of South Coast Air Basin is influenced by the regional geographic characteristics of a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the southwest and high mountains around its remaining perimeter. The general region lies in the semi-permanent high pressure zone of the eastern Pacific Ocean, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds bringing hot, dry air from the desert regions to the east.

The vertical dispersion of air pollutants in South Coast Air Basin is hampered by the presence of persistent temperature inversions. High pressure systems, such as the semi-permanent high pressure system in which the South Coast Air Basin is located, are characterized by an upper layer of dry air that warms as it descends. This upper layer restricts the mobility of cooler marine-influenced air near the surface, and results in the formation of subsidence inversions, which restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce conditions that result in the formation of photochemical smog.

The atmospheric pollution potential of an area is largely dependent on winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and persistent inversions produce the greatest concentration of air pollutants. On days without inversions, or days of wind speeds averaging 15 miles per hour or greater, smog potential is significantly reduced.

South Central Coast Air Basin (Ventura County): CMA

Ventura County is in the South Central Coast Air Basin, along with Santa Barbara and San Luis Obispo counties. Each county in the air basin has its own air pollution control agency. The Ventura County Air Pollution Control District (VCAPCD) is the air pollution control agency for Ventura County and, along with CARB, is charged by state law to protect the people and the environment of Ventura County from the harmful effects of air pollution.

The air above Ventura County often exhibits weak vertical and horizontal dispersion characteristics, which limit the dispersion of emissions and cause increased ambient air pollutant levels. Persistent temperature inversions prevent vertical dispersion. The inversions act as a "ceiling" that prevents pollutants from rising and dispersing. Mountain ranges act as "walls" that inhibit horizontal dispersion of air pollutants.

The diurnal land/sea breeze pattern common in Ventura County recirculates air contaminants. Air pollutants are pushed toward the ocean during the early morning by the land breeze and toward the east during the afternoon, by the sea breeze. This creates a "sloshing" effect, causing pollutants to remain in the area for several days. Residual emissions from previous days accumulate and chemically react with new emissions in the presence of sunlight, thereby increasing ambient air pollutant levels.

This pollutant "sloshing" effect happens most predominantly from May through October ("smog" season). Air temperatures are usually higher and sunlight more intense during the "smog" season. This explains why Ventura County experiences the most exceedances of the state and federal ozone standards during this 6-month period.

Mojave Desert Air Basin (Antelope Valley Area): WJF

The Antelope Valley Air Quality Management District (AVAQMD) covers a western portion of the Mojave Desert Air Basin. The Mojave Desert Air Basin is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds out of the west and southwest result from the proximity to coastal and central regions and the blocking nature of the Sierra Nevada to the north; air masses pushed onshore in southern California by differential heating are channeled through the Mojave Desert Air Basin. The Mojave Desert Air Basin is separated from the southern California coastal and central California Valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada in the north by the Tehachapi Pass (3,800-foot elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 feet).

During the summer the Mojave Desert Air Basin is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The Mojave Desert Air Basin is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time the reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. Precipitation averages between 3 and 7 inches per year (from 16 to 30 days with at least 0.01 inch of precipitation). The Mojave Desert Air Basin is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, indicating that at least 3 months have maximum average temperatures over 100.4° F.

4.3.3.3 Local Air Quality

The local air districts measure air pollution concentrations at various locations throughout each air basin. These monitoring efforts and the data they produce establish air quality conditions in the region, and the trends in pollutant concentrations can be used to track progress toward or maintenance of attainment goals.

The relative impact of a project on regional air quality can be gauged by comparing project-related increases to the significance thresholds described in Section 4.3.2.4, or to region-wide emissions of air pollutants. CARB publishes total emissions for each air basin, and subtotals for various categories such as stationary, area-wide, mobile, and natural (nonanthropogenic) sources. The mobile source category (i.e., onroad and offroad vehicles, ships, trains, etc.) includes a line item for aircraft, the data from which can be used for direct comparison with project-related aircraft emissions.

The tables presented in the following sections summarize the air quality monitoring data and regional emissions in the vicinity of each of the six airports.

South Coast Air Basin: VNY, BUR, LAX, and CNOs

Regional emissions from aircraft, mobile sources, and all sources within the South Coast Air Basin are summarized in Table 4.3-7. Aircraft comprise roughly 1% (varying by pollutant) of the total air pollution emissions in the basin.

Table 4.3-7. Estimated Annual Average Emissions, South Coast Air Basin, 2006

	Emissions (tons per day)					
Emission Source Category	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Aircraft	6.4	46.0	13.2	1.3	0.8	0.8
Mobile Sources	425.8	3,580.0	866.5	28.1	48.4	39.0
South Coast Air Basin Total	762.4	3,909.9	955.4	49.8	296.2	117.9

Ambient air concentrations of ozone, PM2.5, CO, and NO2 near VNY are monitored at the Reseda monitoring station. Table 4.3-8 shows ozone and PM2.5 data for the past 3 years. The closest PM10 data collection point is the West Palm Avenue monitoring station (Table 4.3-9). Because concentrations of other pollutants are below the state and federal standards, the region is designated attainment for the other pollutants.

The West Palm Avenue monitoring station in Burbank is the closest to the BUR and provides data for ozone, PM10, PM2.5, CO, and NO2. Table 4.3-9 shows the ozone and particulate matter data for the past 3 years. The region is designated as an attainment area for the other pollutants because concentrations of these pollutants are lower than the state and federal standards.

Ambient air concentrations of ozone, CO, and NO2 in the vicinity of LAX are monitored at the West Los Angeles VA Hospital monitoring station. PM10 and SO2 are monitored at the Westchester Parkway monitoring station; PM2.5 is monitored at the Lynwood monitoring station. Table 4.3-10 shows ozone and particulate matter data for the past 3years. Because concentrations of other pollutants are below the state and federal standards, the region is designated attainment for the other pollutants.

Ambient air concentrations of ozone and NO2 in the vicinity of CNO are monitored at the SCAQMD's Upland monitoring station. PM10 and PM2.5 are monitored at the Ontario monitoring station at 1408 Francis Street. Table 4.3-11 shows ozone and particulate matter data for the past 3 years. Because concentrations of other pollutants are below the state and federal standards, the region is designated attainment for the other pollutants.

Table 4.3-8. Ambient Air Quality Data Measured at Monitoring Station near VNY

	Reseda		
Pollutant Standards	**2005**	**2006**	**2007**
Ozone			
Maximum 1-hour concentration (ppm)	0.138	0.158	0.129
Maximum 8-hour concentration (ppm)	0.113	0.109	0.105
Days exceeded CAAQS 1-hour (> 0.09 ppm) [a]	30	34	21
Days exceeded NAAQS 8-hour (> 0.08 ppm) [a]	12	17	28
Days exceeded CAAQS 8-hour (> 0.07 ppm) [a]	43	55	43
Particulate Matter (PM2.5)			
National[c] maximum 24-hour concentration ($\mu g/m^3$)	39.5	44.0	43.3
State[d] maximum 24-hour concentration ($\mu g/m^3$)	39.5	44.0	43.3
National annual average concentration ($\mu g/m^3$)	13.9	—	—
State[c] annual average concentration ($\mu g/m^3$) [e]	—	—	—
Days exceeded NAAQS 24-hour (> 65 $\mu g/m^3$) [a]	0	0	0

Notes:

CAAQS = California ambient air quality standards.

NAAQS = national ambient air quality standards.

ppm = parts per million.

$\mu g/m^3$ = micrograms per cubic meter.

— = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2008b; U.S. Environmental Protection Agency 2008a.

Table 4.3-9. Ambient Air Quality Data Measured at Monitoring Station near BUR

Pollutant Standards	West Palm Avenue, Burbank		
	2005	**2006**	**2007**
Ozone			
Maximum 1-hour concentration (ppm)	0.142	0.166	0.116
Maximum 8-hour concentration (ppm)	0.108	0.128	0.096
Days exceeded CAAQS 1-hour (> 0.09 ppm) [a]	13	25	13
Days exceeded NAAQS 8-hour (> 0.08 ppm) [a]	2	12	13
Days exceeded CAAQS 8-hour (> 0.07 ppm) [a]	23	34	19
Particulate Matter (PM10)[b]			
National[c] maximum 24-hour concentration (μg/m^3)	92.0	71.0	109.0
State[d] maximum 24-hour concentration (μg/m^3)	90.0	69.0	107.0
State annual average concentration (μg/m^3)[e]	33.2	—	—
Days exceeded NAAQS 24-hour (> 150 μg/m^3) [a,f]	0	0	0
Days exceeded CAAQS 24-hour (> 50 μg/m^3) [a,f]	5	10	5
Particulate Matter (PM2.5)			
National[c] maximum 24-hour concentration (μg/m^3)	63.1	50.7	56.5
State[d] maximum 24-hour concentration (μg/m^3)	63.1	50.7	56.5
National annual average concentration (μg/m^3)	19.7	17.8	17.1
State[c] annual average concentration (μg/m^3) [e]	—	—	—
Days exceeded NAAQS 24-hour (> 65 μg/m^3) [a]	0	0	0

Notes:

CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
ppm = parts per million.
μg/m^3 = micrograms per cubic meter.
— = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements are usually collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2008b; U.S. Environmental Protection Agency 2008a.

Table 4.3-10. Ambient Air Quality Data Measured at Monitoring Station near LAX

	West Los Angeles VA Hospital		
Pollutant Standards	**2005**	**2006**	**2007**
Ozone			
Maximum 1-hour concentration (ppm)	0.114	0.099	0.117
Maximum 8-hour concentration (ppm)	0.090	0.074	0.087
Days exceeded CAAQS 1-hour (> 0.09 ppm) [a]	7	3	2
Days exceeded NAAQS 8-hour (> 0.08 ppm) [a]	1	0	0
Days exceeded CAAQS 8-hour (> 0.07 ppm) [a]	12	2	2
	Westchester Parkway		
Particulate Matter (PM10)[b]	**2005**	**2006**	**2007**
National[c] maximum 24-hour concentration (μg/m³)	44.0	45.0	128.0
State[d] maximum 24-hour concentration (μg/m³)	44.0	45.0	128.0
State annual average concentration (μg/m³)[e]	—	—	—
Days exceeded NAAQS 24-hour (> 150 μg/m³) [a,f]	0	0	0
Days exceeded CAAQS 24-hour (> 50 μg/m³) [a,f]	0	0	3
	Lynwood		
Particulate Matter (PM2.5)	**2005**	**2006**	**2007**
National[c] maximum 24-hour concentration (μg/m³)	54.6	55.0	48.9
State[d] maximum 24-hour concentration (μg/m³)	54.6	55.0	48.9
National annual average concentration (μg/m³)	17.5	16.7	16.0
State[c] annual average concentration (μg/m³) [e]	—	—	—
Days exceeded NAAQS 24-hour (> 65 μg/m³) [a]	20	—	—

Notes:

CAAQS = California ambient air quality standards. ppm = parts per million.

NAAQS = national ambient air quality standards. μg/m³ = micrograms per cubic meter.

— = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2008b; U.S. Environmental Protection Agency 2008a.

Table 4.3-11. Ambient Air Quality Data Measured at Monitoring Station near CNO

	Upland		
Pollutant Standards	**2005**	**2006**	**2007**
Ozone			
Maximum 1-hour concentration (ppm)	0.149	0.166	0.145
Maximum 8-hour concentration (ppm)	0.121	0.131	0.115
Days exceeded CAAQS 1-hour (> 0.09 ppm) [a]	34	52	32
Days exceeded NAAQS 8-hour (> 0.08 ppm) [a]	15	25	35
Days exceeded CAAQS 8-hour (> 0.07 ppm) [a]	45	64	55
	Ontario 1408 Francis Street		
Particulate Matter (PM10)[b]	**2005**	**2006**	**2007**
National[c] maximum 24-hour concentration (μg/m^3)	77.0	78.0	275.0
State[d] maximum 24-hour concentration (μg/m^3)	75.0	76.0	266.0
State annual average concentration (μg/m^3)[e]	39.5	40.9	45.7
Days exceeded NAAQS 24-hour (> 150 μg/m^3) [a,f]	0	0	1
Days exceeded CAAQS 24-hour (> 50 μg/m^3) [a,f]	18	14	12
Particulate Matter (PM2.5)			
National[c] maximum 24-hour concentration (μg/m^3)	87.7	53.6	72.8
State[d] maximum 24-hour concentration (μg/m^3)	87.7	53.6	72.8
National annual average concentration (μg/m^3)	18.8	18.4	18.3
State[c] annual average concentration (μg/m^3) [e]	—	—	—
Days exceeded NAAQS 24-hour (> 65 μg/m^3) [a]	1	0	1

Notes:

CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
ppm = parts per million.
μg/m^3 = micrograms per cubic meter.

— = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.
[b] Measurements usually are collected every 6 days.
[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.
[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.
[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
[f] Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2008b; U.S. Environmental Protection Agency 2008a.

South Central Coast Air Basin: CMA

Regional emissions from aircraft, mobile sources, and all sources in the South Central Coast Air Basin are summarized in Table 4.3-12. Aircraft comprise roughly 2% (varying by pollutant) of the total air pollution emissions in the basin.

Table 4.3-12. Estimated Annual Average Emissions, South Central Coast Air Basin, 2006

	Emissions (tons per day)					
Emission Source Category	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Aircraft	1.8	15.52	0.8	< 0.1	0.3	0.3
Mobile Sources	57.4	446.7	98.1	1.4	5.1	4.2
Total	**112.3**	**559.2**	**116.3**	**16.3**	**77.3**	**26.7**

Air quality in the vicinity of CMA is monitored at the Rio Mesa School No.1 monitoring station in El Rio, which provides data for ozone, PM10, PM2.5, and NO2. Table 4.3-13 shows the ozone and particulate matter data for the past 3 years. The region is designated as an attainment area for the other pollutants because concentrations of these pollutants are lower than the state and federal standards.

Table 4.3-13. Ambient Air Quality Data Measured at Monitoring Station near CMA

Pollutant Standards	**El Rio - Rio Mesa School #1**		
Ozone	**2005**	**2006**	**2007**
Maximum 1-hour concentration (ppm)	0.076	0.089	0.089
Maximum 8-hour concentration (ppm)	0.067	0.070	0.072
Days exceeded CAAQS 1-hour (> 0.09 ppm) [a]	0	0	0
Days exceeded NAAQS 8-hour (> 0.08 ppm) [a]	0	0	0
Days exceeded CAAQS 8-hour (> 0.07 ppm) [a]	0	0	1
Particulate Matter (PM10)[b]			
National[c] maximum 24-hour concentration (μg/m^3)	54.0	119.4	245.5
State[d] maximum 24-hour concentration (μg/m^3)	54.4	119.1	248.0
State annual average concentration (μg/m^3)[e]	12.1	24.1	12.2
Days exceeded NAAQS 24-hour (> 150 μg/m^3) [a,f]	0	0	1
Days exceeded CAAQS 24-hour (> 50 μg/m^3) [a,f]	2	4	2
Particulate Matter (PM2.5)			
National[c] maximum 24-hour concentration (μg/m^3)	35.2	29.8	39.9
State[d] maximum 24-hour concentration (μg/m^3)	35.2	37.9	75.0
National annual average concentration (μg/m^3)	1.5	9.8	10.6
State[c] annual average concentration (μg/m^3) [e]	1.5	9.8	10.6
Days exceeded NAAQS 24-hour (> 65 μg/m^3) [a]	0	0	0

Notes:

CAAQS = California ambient air quality standards. ppm = parts per million.

NAAQS = national ambient air quality standards. μg/m^3 = micrograms per cubic meter.

— = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2008b; U.S. Environmental Protection Agency 2008a.

Mojave Desert Basin: WJF

Regional emissions from aircraft, mobile sources, and all sources within the Mojave Desert Air Basin are summarized in Table 4.3-14. Aircraft comprise roughly 3% (varying by pollutant) of the total air pollution emissions in the basin.

Table 4.3-14. Estimated Annual Average Emissions, Mojave Desert Air Basin, 2006

	Emissions (tons per day)					
Emission Source Category	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Aircraft	4.8	21.9	3.2	0.4	3.0	3.0
Mobile Sources	66.2	422.9	221.0	4.9	13.4	11.9
MDAB Total	96.3	475.6	286.1	10.5	178.3	48.5

Air quality in the vicinity of WJF is monitored at the 43301 Division Street monitoring station in Lancaster, which provides data for ozone, PM10, PM2.5, and CO. Table 4.3-15 shows the ozone and particulate matter data for the past 3 years. The region is designated as an attainment area for the other pollutants, because concentrations of these pollutants are lower than the state and federal standards.

Table 4.3-15. Ambient Air Quality Data Measured at Monitoring Station near WJF

Pollutant Standards	**43301 Division Street, Lancaster**		
Ozone	**2005**	**2006**	**2007**
Maximum 1-hour concentration (ppm)	0.127	0.132	0.118
Maximum 8-hour concentration (ppm)	0.103	0.105	0.101
Days exceeded CAAQS 1-hour (> 0.09 ppm) a	42	22	16
Days exceeded NAAQS 8-hour (> 0.08 ppm) a	31	16	42
Days exceeded CAAQS 8-hour (> 0.07 ppm) a	73	66	63
Particulate Matter (PM10)b			
Nationalc maximum 24-hour concentration (µg/m3)	53.0	63.0	188.0
Stated maximum 24-hour concentration (µg/m3)	47.0	58.0	181.0
State annual average concentration (µg/m3)e	—	—	—
Days exceeded NAAQS 24-hour (> 150 µg/m3) a,f	0	0	1
Days exceeded CAAQS 24-hour (> 50 µg/m3) a,f	0	4	3
Particulate Matter (PM2.5)			
Nationalc maximum 24-hour concentration (µg/m3)	28.0	18.0	25.0
Stated maximum 24-hour concentration (µg/m3)	28.0	18.0	25.0
National annual average concentration (µg/m3)	8.9	7.4	8.0
Statec annual average concentration (µg/m3) e	8.9	7.4	8.0
Days exceeded NAAQS 24-hour (> 65 µg/m3) a	0	0	0

Notes:

CAAQS = California ambient air quality standards. ppm = parts per million.

NAAQS = national ambient air quality standards. µg/m3 = micrograms per cubic meter.

— = insufficient data available to determine the value.

a An exceedance is not necessarily a violation.

b Measurements usually are collected every 6 days.

c National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

d State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

e State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

f Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2008b; U.S. Environmental Protection Agency 2008a.

4.3.3.4 Health Effects of Criteria Air Pollutants

Air pollutants are recognized to have a variety of health effects on humans. Research by CARB shows that exposure to high concentrations of air pollutants can trigger respiratory diseases such as asthma and bronchitis, and cardiovascular diseases. A healthy person exposed to high concentrations of air pollutants may be become nauseated or dizzy, may develop a headache or cough, or may experience eye irritation and/or a burning sensation in the chest. Ozone is a powerful irritant that attacks the respiratory system, leading to the damage of lung tissue. Inhaled particulate matter (PM10 and PM2.5), NO2, and SO2 can directly irritate the respiratory tract, constrict airways, and interfere with the mucous lining of the airways. Exposure to CO, when absorbed into the bloodstream, can endanger the hemoglobin, the oxygen-carrying protein in blood, by reducing the amount of oxygen that reaches the heart, brain, and other body tissues. When air pollutants levels are high, a common occurrence in southern California, children, elderly, and people with respiratory problems are advised to remain indoors. Outdoor exercise also is discouraged because strenuous activity may cause shortness of breath and chest pains. A brief discussion of the criteria pollutants and their effect on human health and the environment is provided in Table 4.3-16.

Table 4.3-16. Health Effects Summary of the Major Criteria Air Pollutants

Pollutants	Sources	Primary Effects
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	Aggravation of respiratory and cardiovascular diseases. Irritation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide (NO2)	Motor vehicle exhaust. High temperature stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon containing substances, such as motor exhaust. Natural events, such as decomposition of organic matter.	Reduced tolerance for exercise. Impairment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart diseases (angina).
Particulate Matter (PM2.5 and PM10)	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions.	Reduced lung function. Aggravation of the effects of pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest discomfort. Reduced visibility.
Sulfur Dioxide (SO2)	Combustion of sulfur-containing fossil fuels. Smelting of sulfur bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, coatings, etc.
Lead (Pb)	Contaminated soil.	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.

Source: California Air Resources Board 2006.

TACs are gases, liquids, or particles that are emitted into the atmosphere and, under certain conditions, may cause adverse health effects such as cancer, acute non-cancer, and chronic non-cancer effects. The Office of Environmental Health Hazard Assessment (OEHHA) has compiled the health effects and health values for all toxic air pollutants into one document entitled *Consolidated Table of OEHHA/CARB Approved Risk Assessment Health Values* (Office of Environmental Health Hazard Assessment (OEHHA 2005), and has included these values in the Hot Spots Assessment and Reporting Program (HARP). Table 4.3-17 summarizes the health effects of TACs potentially emitted during typical airport operations for any of the project alternatives.

Table 4.3-17. Toxics Air Contaminants Health Effects

TAC	Cancer Unit Risk Factor (µg/m3)$^{-1}$	Chronic Inhalation Reference Exposure Level (µg/m3)	Chronic Hazard Index Target Organ Systems	Acute Inhalation Reference Exposure Level (µg/m3)	Acute Hazard Index Target Organ Systems
1,3-Butadiene	1.7×10^{-4}	20	Reproductive System		
Acetaldehyde	2.7×10^{-6}	9.0	Respiratory System		
Acrolein		0.06	Eyes; Respiratory System	0.19	Eyes; Respiratory System
Benzene	2.9×10^{-5}	60	Developmental; Hematopoietic System; Nervous System	1,300	Hematologic System; Immune System; Reproductive/ Developmental
Chromium		0.2	Respiratory System		
Formaldehyde	6.0×10^{-6}	3.0	Eyes; Respiratory System	94	Eyes; Immune System; Respiratory System
Lead	1.2×10^{-5}				
Naphthalene		9.0	Respiratory System		

Source: Office of Environmental Health Hazard Assessment (OEHHA 2005), Consolidated Table of OEHHA/CARB Approved Risk Assessment Health Values.

4.3.3.5 Sensitive Receptors

Air quality regulators typically define sensitive receptors as schools (preschool-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. Sensitive receptors were identified within a 1-mile radius of each airport using aerial photographs available in the electronic geographical information system (GIS) database from the Electric Power Research Institute (EPRI) and/or Google Earth. The locations of sensitive receptors around the airports are summarized by air basin below and shown in Figures 4.3-1 through 4.3-6. For informational purposes, these figures also show residential receptors, though residences do not necessarily qualify as sensitive receptors.

South Coast Air Basin: VNY, BUR, LAX, and CNOs

The sensitive receptors within 1 mile of VNY are shown in Figure 4.3-1 and listed below.

S4	Bassett Elementary School	0.7 mile	15756 Bassett St, Van Nuys
S5	Birmingham Senior High School	1.0 mile	17000 Haynes St, Van Nuys
S9	Cohasset Elementary School	0.7 mile	15810 Saticoy St, Van Nuys
S19	Gault Elementary School	0.8 mile	17000 Gault St, Van Nuys
S33	Mulholland Middle School	1.0 mile	17120 Vanowen St, Van Nuys
S40	Parthenia Street Elementary School	0.7 mile	16825 Napa St, Northride
S47	Saint Bridget School	0.4 mile	16711 Gault St, Van Nuys
S53	Stagg Elementary School	0.9 mile	7839 Amestoy Ave, Van Nuys
S57	Valley School	0.8 mile	15700 Sherman Way, Van Nuys

The sensitive receptors within 1 mile of BUR are shown in Figure 4.3-2 and listed below.

S7	Camellia Elementary School	1.0 mile	7451 Camelia Ave, N. Hollywood
S14	Fair Avenue Elementary School	0.7 mile	6501 Fair Ave, N. Hollywood
S20	Glenwood Elementary School	0.4 mile	8001 Ledge Ave, Sun Valley
S31	Luther Burbank Middle School	1.0 mile	3700 W. Jeffries Ave, Glendale
S39	Our Lady of the Holy Rosary School	0.6 mile	7802 Vineland Ave, Sun Valley
S43	Providencia Elementary School	0.7 mile	1919 N. Ontario St, Glendale
S44	Roscoe Elementary School	0.6 mile	10765 Strathern St, Sun Valley
S50	Saint Patrick School	1.0 mile	10626 Erwin St., N. Hollywood
S55	Sun Valley Middle School	0.6 mile	7330 Bakman Ave, Sun Valley
S60	Washington Elementary School	0.8 mile	2322 N. Lincoln Ave, Glendale
S64	Woodbury University	0.9 mile	750 Glenoaks Blvd, Burbank

The sensitive receptors within one mile of LAX are shown in Figure 4.3-3 and listed below.

S3	Arena High School	1.0 mile	641 Sheldon St, El Segundo
S6	Buford Elementary School	0.9 mile	4919 W 109th St, El Segundo
S8	Center Street Elementary School	1.0 mile	700 Center St, El Segundo
S11	El Segundo High School	1.0 mile	640 Main St, El Segundo

S12	El Segundo Middle School	0.6 mile	332 Center St, El Segundo
S13	Westchester-Emerson Community Adult School	0.3 mile	8810 Emerson Ave, Los Angeles
S15	Felton Elementary School	0.8 mile	10417 Felton Ave, Lennox
S25	Kentwood Elementary School	0.7 mile	8401 Emerson Ave, Los Angeles
S27	Lennox Middle School	0.9 mile	11033 Buford Ave, Lennox
S30	Loyola Village Elementary School	0.5 mile	8821 Villanova Ave, Los Angeles
S42	Paseo Del Rey Fundamental School	0.6 mile	7751 Paseo del Rey, Playa Del Rey
S46	Saint Bernard High School	0.4 mile	9100 Falmouth Ave, Playa Del Rey
S49	Saint Johns Lutheran Child Development Center	0.5 mile	1611 E Sycamore, El Segundo
S59	Visitation School	0.4 mile	8740 Emerson Ave, Los Angeles
S62	Westchester Senior High School	0.6 mile	7400 W Manchester Ave, Los Angeles

The sensitive receptors within 1 mile of CNO are shown in Figure 4.3-4 and listed below.

S54	Stark Youth Training School	0.5 mile	15180 Euclid Ave, Chino

South Central Coast Air Basin: CMA

The sensitive receptors within 1 mile of CMA are shown in Figure 4.3-5 and listed below.

S10	Ventura Training Center Academy	0.4 mile	425 Durley Ave, Camarillo
S17	Frontier High School	0.5 mile	545 Airport Way, Camarillo
S18	Gateway Community School	0.7 mile	200 Horizon Way, Camarillo

Mojave Desert Air Basin: WJF

There are no sensitive receptors within 1 mile of WJF. A GIS diagram of the airport and the surrounding residences is shown in Figure 4.3-6.

4.3.4 Air Quality Analysis Methodology

4.3.4.1 Construction Emissions Impact Approach

There is no construction activity associated with the project. Therefore, no construction emissions analysis was performed.

4.3.4.2 Operational Emissions Impact Approach

Criteria Pollutant Emissions

Emissions associated with aircraft flights and related support equipment are expected during operation of the project. All project-related aircraft are jet engine driven aircraft. Modern jet engine fuel is primarily composed of kerosene, and does not contain lead. In a jet engine, the fuel and an oxidizer combust (or burn) and the products of that combustion are exhausted through a narrow opening at high speed. Because leaded fuel (tetraethyl lead) is not used in jet engine aircraft, emissions of lead particles will not occur from proposed project-related aircraft activities. Criteria air pollutants associated with airport operation include CO, NO2, ozone, PM10, PM2.5, and SO2. One of these pollutants, ozone, is a photochemical oxidant that is not directly emitted, but forms from precursor compounds that react in the presence of sunlight. Therefore, the analysis of ozone is accomplished by estimating emissions of its precursors, which are VOCs and NOx. Aircraft flight data used in the analysis is based on data compiled by SH&E (SH&E 2008). Emissions from both aircraft and non-aircraft activities is estimated, as described below, for the 2014 and 2016 project scenarios.

Toxic Air Contaminants

Potential TAC impacts are evaluated by conducting a review of the TACs of concern around typical airports in southern California, as guided by CARB's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005). The screening-level evaluation consists of reviewing the project location to identify any new or modified TAC emission sources, and downwind sensitive receptor locations within 1 mile. If it is determined that the project would significantly increase TACs, or modify an existing TAC exposure on the nearby sensitive receptors, then a HRA would be required to determine project impacts.

For the TAC emission inventories, the chemicals of potential concern generated by sources located on airport property will be included. The chemicals of potential concern will consist of those TACs that are known or expected to be emitted by sources at the airport which are also listed federal HAPs identified in the federal CAA and/or California's AB 2588 Toxic Hot Spots program. Hydrocarbon and particulate matter emissions will be use to estimate TAC emissions for both aircraft and nonaircraft sources, including both metals and diesel exhaust particulate matter. The emission rates of specific chemicals of potential concern will then be estimated using speciation profiles suitable for each source/pollutant.

Eight TACs of concern for aircraft-related sources were selected: acetaldehyde; acrolein; benzene; 1,3-butadiene; chromium; formaldehyde; lead; and naphthalene. In combination, these TACs are expected to account for about 99% of all potency-weighted emissions that could be associated with aircraft operations.

Climate Change and Greenhouse Gas Emissions

No federal, state or regional air quality agency has adopted a methodology or quantitative threshold that can be applied to evaluate the significance of an individual project's contribution to GHG emissions, such as the quantitative thresholds that exist for criteria pollutants. Based on the threshold prescribed above, for the purpose of determining the impacts from GHG emissions for this project, any increase in GHG emissions would be considered a significant impact. Since the proposed project would result in reallocation of existing aircraft (and associated emissions) to different airports and no new emissions sources would result from the proposed project, there would be no adverse climate change or GHG impacts.

4.3.4.3 Analysis Scenarios

The primary air quality-related concern with the project is the potential air quality effects of the project on the potential diversion airports. As operations shift from VNY to the five diversion airports, the emissions of air pollutants by the planes during take-offs and landings would be relocated as well.

Additionally, with the conversion of selected noisy aircraft to quieter and more modern aircraft that would continue operations at VNY, it is possible that emissions of some pollutants may actually increase at VNY because of the different characteristics and emission profiles of the newer engines.

In this section, the air pollutant emissions by aircraft moving from VNY to the diversion airports, or aircraft staying at VNY with aircraft and/or engine conversions, are estimated under the project. Emissions at diversion airports are expected to increase in proportion to the number of aircraft operations being transferred to each airport and the emission levels per operation for each type of aircraft. Emissions at VNY would drop to zero for aircraft that are being phased out, and would either increase or decrease for aircraft that are converting and staying at VNY.

Project scenarios are for the years 2014 and 2016, as appropriate for each diversion airport. Emissions at diversion airports are evaluated as project-related increases only, without consideration for aircraft that are already operating at these airports. The emissions calculated for the year 2014 for aircraft moving to BUR, LAX, and CMA under the With Project scenario would directly increase in proportion to the number of operations and the emission profiles for each aircraft and associated power units and ground support equipment. The emissions calculated for the year 2016 for aircraft moving to CNO and WJFs would increase in a similar fashion. The No Project scenario for these diversion airports would be zero emissions for all aircraft in the study, and the calculated increases would be compared to significance thresholds for each region, as outlined in Section 4.3.2.4.

Emissions at VNY, on the other hand, are calculated for the years 2014 and 2016 under the With Project scenario (with aircraft converting in-place at VNY and vacating from VNY), and then compared to the emissions calculated for the No

Project scenario. The differences in emissions between the two scenarios would be compared to the significance thresholds for the region, as outlined in Section 4.3.2.4. The analysis scenarios are summarized in Table 4.3-18 for each airport and each year.

Table 4.3-18. Analysis Scenarios of Project-Related Aircraft Emission Changes by Airport and Year

Airport	Analysis Year	No Project	With Project
VNY	2014 and 2016	X	X
BUR	2014	(all zero)	X
LAX	2014	(all zero)	X
CMA	2014	(all zero)	X
CNO	2016	(all zero)	X
WJF	2016	(all zero)	X

X = denotes the scenarios where emissions were evaluated for the respective airports.

4.3.4.4 Aircraft Emissions

Aircraft emissions were estimated using the Emissions and Dispersion Modeling System (EDMS) version 5.0.2, released by FAA on June 29, 2007. EDMS is the model required by EPA and FAA for evaluating emissions from airports, and provides estimates for hydrocarbons, CO, NOx, SOx, and PM10.

EDMS is a combined emissions inventory and dispersion model used for assessing air quality at civilian airports and military air bases. The model incorporates both EPA-approved emissions inventory methodologies and dispersion models to ensure that analyses performed with the application conform to EPA guidelines. The model includes emissions and dispersion calculations, a rather comprehensive list of aircraft engines, aerospace ground support equipment, auxiliary power units, and vehicular and stationary source emission factor data. The model incorporates options for modifying some data to accurately represent unique characteristics at airfield locations, and also allows the user to add customized aircraft types to the system database.

The pollutants currently included in the emission inventory are CO, VOC, NOx, SOx, PM10, and PM2.5. Emissions of TACs may be estimated using VOC and particulate matter emissions and speciation factors based on the proportions of each TAC in the criteria pollutants for each emission source category and/or fuel characteristics. The model also provides fuel consumption data, which can be used to estimate CO2 emissions for analysis of Greenhouse Gas and climate change effects.

EDMS was used in accordance with the guidelines set forth in the FAA's Air Quality Procedures for Civilian Airport and Air Force Bases (Federal Aviation Administration 1997). According to the FAA's guidance, the aircraft emission inventory should be based on emissions occurring within the portion of the atmosphere that is completely mixed, beginning at the ground surface and extending to the mixing height. In general, the mixing height is assumed to have a default height above ground level of 3,000 feet. As used throughout this EIR, an aircraft operation is generally defined as a takeoff or a landing. As these relate to the FAA analysis procedures, these operations occur in the "landing and takeoff (LTO) cycle." The standard LTO cycle begins when the aircraft enters the mixing zone as it approaches the airport on its descent from cruising altitude, lands, and taxis to the gate. The cycle continues as the aircraft taxis back out to the runway, takes off, and climbs out of the mixing zone and back up to cruising altitude. The five specific operating modes in a standard LTO cycle are approach, taxi or idle in, taxi or idle out, takeoff, and climb-out. The approach, taxi, and idle-in modes relate to landing operations; the taxi, idle-out, takeoff, and climb-out modes relate to takeoff operations.

For each aircraft type involved in the action, the following steps were taken to calculate the emissions.

1. Determine the number of each type of aircraft and the number and type of engines per aircraft.
2. Determine the annual number of operations conducted per aircraft.
3. Determine the power settings for each operating mode in order to determine the fuel flow per engine and appropriate emission factors (usually given as pounds of pollutant per 1,000 pounds of fuel used).
4. Determine the time-in-mode for each operating mode.
5. Multiply the number of operations per aircraft for each operating mode by the number of aircraft, fuel flow rate per engine, number of engines, emission factor, time-in-mode and appropriate conversion factors to obtain the total emissions in tons per year for each operating mode.
6. Sum the emissions for all operating modes to obtain the total daily and annual emissions for the aircraft type.

EDMS default settings were used for engine emission factors, power settings, time-in-mode data, auxiliary power units, ground support equipment, and other parameters for each aircraft taking off and landing at the various airports. The data used in the model, including the aircraft-engine combinations and the number of operations by each type of aircraft at each airport for each of the study years and scenarios, were based on data compiled by SH&E (Phaseout of Noisy Aircraft at Van Nuys Regional Airport, 3/13/2008; SH&E Memorandum from LAWA: CEQA Airports Baseline Business Jet Fleet Forecast, 10/3/2007; personal communications with SH&E). In some cases, EDMS engines did not match the engine specified for a particular aircraft, in which case the EDMS default aircraft-engine pair was used instead. In the case of the L-39 Czech-made Albatross trainer, no data were available in EDMS so the emissions were calculated based on engine data for the T-38 aircraft in place of the L-39. The aircraft-engine combinations used in the EDMS model for each type of aircraft are shown in Table 4.3-19.

Table 4.3-19. Aircraft-Engine Combinations Used in Emissions Modeling

Aircraft Code	Aircraft Name	Engine Specification	Aircraft used in EDMS	Engine used in EDMS
B721	Boeing 727-100	JT8D-9	Boeing 727-100 Series	JT8D-9 Series Smoke Fix
B722	Boeing 727-200	JT8D-17	Boeing 727-200 Series	JT8D-17 Smoke Fix
B727	Boeing 727	JT8D-17	Boeing 727-200 Series	JT8D-17 Smoke Fix
F5	US-made military F-5	(no data)	Northrup F-5E/F Tiger II	J85-GE-5F
GLF2	Gulfstream II/G200	(no data)	Gulfstream II	SPEY MK.511-8
GLF3	Gulfstream III/G300	GIIB/GIII	Gulfstream G300	SPEY MK.511-8
H25A	BAe HS 125-600A	Viper 601-22	Hawker HS-125 Series 600	TFE731-2-2B
L39	Czech L39 Albatros trainer	(no data)	T-38 Talon	J85-GE-5H (w/AB)
LJ24	Bombadier Learjet 24D	CJ610-6	Bombadier Learjet 24D	CJ610-6
L25	Bombadier Learjet 25D	CJ610-8A	Bombadier Learjet 25	CJ610-6
L28	Bombadier Learjet 28	(no data)	Bombadier Learjet 28	CJ610-6
L35	Bombadier Learjet 35/36	(no data)	Bombadier Learjet 35	TFE731-2-2B
SBR1	Rockwell Sabre 60	JT12A-8	Rockwell Sabreliner 60	CF700-2D
T38	US-made military T-38	(no data)	T-38 Talon	J85-GE-5H (w/AB)

One aircraft operation is considered either a take-off or a landing, so, for each aircraft, the annual number of operations was divided by two for entry of LTO cycles (takeoffs and landings) into the model.

Peak daily operations at VNY were estimated using the assumption that operations are distributed evenly throughout the year. That is, the annual operations for each of the project-related aircraft types were divided by 365.25 (the number of days in a year, averaged to account for leap years) and rounded up, so that the minimum number of flights per day for each aircraft type based at VNY would be one flight per day, rather than a fractional number (in accordance with EDMS input requirements). For example, projections for the year 2014 under the No Project scenario predict 624 annual take-offs and 624 annual landings of GLF2 aircraft during 2014 at VNY. Dividing by 365.25 and rounding up to the nearest whole number results in a prediction that there would be a daily average of two take-offs and two landings of GLF2 aircraft during 2014 at VNY. By this method, each project-related aircraft type yields at least a fraction of a daily flight at VNY, and therefore the analysis assumed that all aircraft types would be operating on the same day. That is, the peak daily emissions for each aircraft type are summed to determine the peak daily emissions at VNY for a given year.

For the diversion airports, reliance on annual averages to determine daily peak emissions would yield unrealistically conservative results, because it would assume that in one day all aircraft types that are diverted to a particular airport would go through one LTO cycle. To provide a more realistic depiction of peak days at the diversion airports, SH&E reviewed the available 2006 data to determine the single day at VNY with the most operations by noise ordinance-affected aircraft, for each of the two analysis years. The busiest day at VNY for aircraft affected by the proposed 2014 noise limits was identified as having multiple operations of Gulfstream 2, Gulfstream 3, and H25, and a single operation of a Boeing 727; these operations would be diverted to LAX, BUR, and CMA, in accordance with the diversion methodology established by SH&E. The busiest day at VNY for aircraft affected by the 2016 expiration of the maintenance and historic-aircraft exemptions was identified as having multiple operations of Gulfstream 2, Gulfstream 3, and T34, and a single operation of a Lear 39; these operations would be diverted to CNO and WJF, in accordance with the diversion methodology established by SH&E.

The EDMS modeling method, required by the FAA policy (FAA Orders 1050 and 5050), does not allow fractions of LTO cycles to be input, and as a result can yield a very conservative estimate of project impacts, especially where the number of additional operations at a particular airport is small, because it can end up counting the same diverted LTO cycle multiple times. For example, one Boeing 727 operation occurring at VNY on a peak day would be transferred to three diversion airports (according to the diversion methodology established by SH&S), equating to an estimated 0.6 operation per day at BUR, 0.3 operation per day at CMA, and 0.1 operation per day at LAX. For input into the EDMS model, which allows a minimum of one flight per day, these numbers were divided by two and rounded up, resulting in one LTO at each of the three airports. Thus, the resulting modeled emissions are elevated and can be considered conservative. Actual project-related emissions are expected to be lower.

Table 4.3-20 shows the annual number of aircraft LTOs (i.e., one LTO equals one take-off and one landing, or two aircraft operations) used in the EDMS model for each type of aircraft at each airport. The numbers of operations shown in this table include only those aircraft types that have been identified as “noisy” aircraft and either are being converted to quieter aircraft and staying at the VNY or are moving to diversion airports by 2014 or 2016 as dictated by stricter noise ordinances at VNY. Projections for anticipated natural decreases in these populations under the No Project scenario are indicated in the first three columns under VNY for calendar years 2009, 2014, and 2016. The remaining columns show the expected number of landings and take-offs of noisy aircraft or converted aircraft at each airport under the With Project (WP) scenario.

Table 4.3-20. Annual Landing and Take-Off Cycles at Each Airport (Noisy or Converted Aircraft)

	VNY					BUR	LAX	CMA	CNO	WJF
	2009	**2014**	**2016**	**2014**	**2016**	**2014**	**2014**	**2014**	**2016**	**2016**
Aircraft		**NP**								
B721	7	6	4	—	—	—	6	—	—	—
B722	3	3	2	—	—	—	3	—	—	—
B727	9	8	5	—	—	—	8	—	—	—
F5	2	2	2	2	—	—	—	—	2	—
GLF2	624	383	316	65	—	12	2	7	—	65
GLF3	835	461	364	696	508	37	6	22	—	65
H25A	5	2	2	—	—	2	1	1	—	—
L39	29	29	29	29	—	—	—	—	29	—
LJ24	47	16	10	—	—	9	2	6	—	—
LJ25	371	245	207	—	—	38	6	23	—	—
LJ28	5	1	1	—	—	1	1	1	—	—
LJ35	—	—	—	179	152	—	—	—	—	—
SBR1	6	2	1	—	—	1	1	1	—	—
T38	19	19	19	19	—	—	—	—	19	—
Total per Year	**1,962**	**1,177**	**962**	**990**	**660**	**100**	**36**	**61**	**50**	**130**

NP = No Project; WP = Project

Source: SH&E, Phaseout of Noisy Aircraft at Van Nuys Regional Airport, 3/13/2008.

Table 4.3-21 shows the peak daily number of aircraft LTO cycles used in the EDMS model for a single day under the No Project and With Project scenarios for each type of aircraft at each airport. The numbers of operations shown in this table include only those aircraft types that have been identified as noisy aircraft and either are being converted to quieter aircraft and staying at the VNY or are moving to diversion airports by 2014 or 2016 as dictated by stricter noise ordinances at VNY. Projections for anticipated natural decreases in these populations under the No Project scenario are indicated in the first three columns under VNY for calendar years 2009, 2014, and 2016. The remaining columns show the expected number of landings and take-offs of noisy aircraft or converted aircraft at each airport under the Project scenario. Aircraft types that are not being moved or converted and will continue to operate at these airports are not included in this table.

Table 4.3-21. Peak Daily Landings and Take-Offs at Each Airport (Noisy or Converted Aircraft)

	Number of LTO (Landings and Take-Offs)									
	VNY					BUR	LAX	CMA	CNO	WJF
	2009	2014	2016	2014	2016	2014	2014	2014	2016	2016
Aircraft	NP					WP				
B721	1	1	1	—	—	—	—	—	—	—
B722	1	1	1	—	—	—	—	—	—	—
B727	1	1	1	—	—	1	1	1	—	—
F5	1	1	1	1	—	—	—	—	—	—
GLF2	2	2	1	1	—	2	1	1	—	1
GLF3	3	2	1	2	2	2	1	1	—	2
H25A	1	1	1	—	—	1	1	1	—	—
L39	1	1	1	1	—	—	—	—	1	—
LJ24	1	1	1	—	—	—	—	—	—	—
LJ25	2	1	1	—	—	—	—	—	—	—
LJ28	1	1	1	—	—	—	—	—	—	—
LJ35	—	—	—	1	1	—	—	—	—	—
SBR1	1	1	1	—	—	—	—	—	—	—
T38	1	1	1	1	—	—	—	—	1	—
Total Per Day	**17**	**15**	**13**	**7**	**3**	**6**	**4**	**4**	**2**	**3**

NP = No Project; WP = Project

Source: SH&E, Phaseout of Noisy Aircraft at Van Nuys Regional Airport, 3/13/2008; SH&E, personal communications, 9/17/2008

4.3.5 Impact Analysis

The project involves only aircraft emissions and emissions from auxiliary power units (APU) and ground support equipment (GSE) that are directly related to aircraft operations. No construction activities or changes in any other operational activities are expected to occur as a result of the implementation of the project. In other words, no indirect vehicular activity, no aircraft maintenance, and no additional energy consumption related to increases in building occupancy or other physical changes would result from the project.

4.3.5.1 Projected Emissions and Levels of Significance

South Coast Air Basin: VNY, BUR, LAX, and CNOs

Van Nuys Airport

Consistency with Regional Air Quality Management Plan

SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the South Coast Air Basin is in nonattainment (i.e., ozone, PM10, and PM2.5). The project would be subject to the SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

The project site is consistent with the City of Los Angeles General Plan. The project site is classified as public airport, consistent with the General Industrial in the Land Use Element of the General Plan. The project is consistent with this classification, as the whole of the project would consist of aircraft operations and supporting land uses.

Because the project is consistent with the local general plan, pursuant to SCAQMD guidelines, it is also considered consistent with the region's AQMP. As such, aircraft–related emissions are accounted for in the AQMP, which is crafted to bring the South Coast Air Basin into attainment for all criteria pollutants. Accordingly, the project would be consistent with the projections in the AQMP, and would have a less-than-significant impact.

A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The 2007 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates SCAG's 2004 Regional Transportation Plan socioeconomic forecasts of regional population and employment growth. The project would reallocate aircraft within the ASA region. It is expected that under the project aircraft operations reallocated from VNY to other airports would remain at the same level currently projected in the AQMP. Such levels of aircraft operation growth and aircraft fleet turnover are consistent with the aircraft forecasts for the region as adopted by SCAG. Because SCAQMD has incorporated these same projections into the AQMP, it can be concluded that the project would be consistent with the projections in the AQMP. In summary, the reduction in emissions that will occur at VNY would not conflict with or obstruct implementation of the AQMP. No mitigation is required.

Violation of any Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation

The transfer of aircraft away from VNY and the conversion of noisy aircraft to quieter models staying at VNY would result in a change in aircraft-related emissions at VNY that would be proportional to the changes in operational activity for each aircraft type and the emission factors for each aircraft and related support equipment, as outlined in the methodology section, above. SCAQMD evaluates the significance of project impacts based on daily emissions only (i.e., significance is not based on annual project-related emissions) of CO, ROGs (equivalent to VOCs), NOx, SOx, PM10, and PM2.5, as delineated in Table 4.3-4. The changes in peak daily emissions that would result from the project in calendar years 2014 and 2016 are summarized and compared to SCAQMD's daily significance thresholds in Tables 4-22 and 4-23, respectively. As shown in the two tables, the project would result in decreases in aircraft-related emissions at VNY for all six pollutants in 2014, relative to the No Project scenario based on the peak daily operational data shown in Table 4.3-21. In 2016, emissions would be even lower due to the retirement of older aircraft that is expected to occur independent of the project. Because the emissions at VNY would be lower under the With Project scenario than under the No Project scenario, emissions from the project would remain below the significance thresholds. Therefore, the VNY emissions impact is considered less than significant in 2014 and 2016 planning years.

Table 4.3-22. Changes in Aircraft-Related Peak Daily Emissions at VNY Resulting from the Project (Calendar Year 2014)

	Changes in Peak Daily Emissions (pounds per day)					
Aircraft	**CO**	**VOC**	**NOx**	**SOx**	**PM10**	**PM2.5**
B721	-58	-31	-23	-4	-1	-1
B722	-58	-36	-30	-5	-2	-2
B727	-58	-36	-30	-5	-2	-2
LJ24	-83	-12	-1	-1	—	—
LJ25	-83	-12	-1	-1	—	—
LJ28	-83	-12	-1	-1	—	—
LJ35	12	5	1	—	—	—
GLF3	—	—	—	—	—	—
GLF2	-32	-7	-17	-2	-1	-1
H25A	-12	-5	-1	—	—	—
F-5	—	—	—	—	—	—
SBR1	-81	-15	-2	-1	—	—
L-39	—	—	—	—	—	—
T-38	—	—	—	—	—	—
Peak Daily Total	**-536**	**-161**	**-105**	**-20**	**-6**	**-6**
Significance Threshold	*550*	*75*	*55*	*150*	*150*	*55*
Threshold Exceeded?	*No*	*No*	*No*	*No*	*No*	*No*

Table 4.3-23. Changes in Aircraft-Related Peak Daily Emissions at VNY Resulting from the Project (Calendar Year 2016)

	Changes in Peak Daily Emissions (pounds per day)					
Aircraft	**CO**	**VOC**	**NOx**	**SOx**	**PM10**	**PM2.5**
B721	-58	-31	-23	-4	-1	-1
B722	-58	-36	-30	-5	-2	-2
B727	-58	-36	-30	-5	-2	-2
LJ24	-83	-12	-1	-1	—	—
LJ25	-83	-12	-1	-1	—	—
LJ28	-83	-12	-1	-1	—	—
LJ35	+12	+5	+1	—	—	—
GLF3	+31	+7	+17	+2	+1	+1
GLF2	-32	-7	-17	-3	—	—
H25A	-12	-5	-1	—	—	—
F-5	-102	-32	-2	-1	-1	-1
SBR1	-81	-15	-2	-1	—	—
L-39	-101	-13	-2	-1	—	—
T-38	-101	-13	-2	-1	—	—
Peak Daily Total	**-809**	**-212**	**-94**	**-22**	**-5**	**-5**
Significance Threshold	*550*	*75*	*55*	*150*	*150*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Objectionable Odors from Aircraft and Related Support Equipment

Aircraft operations can generate potential odors and gaseous fumes by evaporative emissions and tailpipe emissions from aircraft, GSE, and APU during operations. Because the project would reduce operations at VNY, it would result in a reduction in odor emissions at VNY. Therefore, odor impacts would be less than significant. No mitigation is required.

Bob Hope Airport, Burbank (BUR)

Consistency with Regional Air Quality Management Plan

Refer to the discussion on consistency with AQMP under the VNY section. In summary, the project would not conflict with or obstruct implementation of the AQMP. This impact is less than significant at BUR, and no mitigation is required.

Violation of any Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation

The transfer of aircraft to BUR would result in an increase in aircraft-related emissions at BUR that would be proportional to the increase in operational activity for each aircraft type and the emission factors for each aircraft and related support equipment, as outlined in the methodology section, above. SCAQMD evaluates significance of project impacts based on daily emissions only (i.e., significance is not based on annual project-related emissions) of CO, ROGs (equivalent to VOCs), NOx, SOx, PM10, and PM2.5, as delineated in Table 4.3-4. As discussed in Section 4.3.2, ROG (equivalent to VOC) and NOx are regional pollutants, contributing to elevated ozone levels due to atmospheric photochemical reactions occurring significantly downwind of the source of the emissions. Therefore, when emission sources (i.e., aircraft) are transferred from one location within the South Coast Air Basin to another, as they are when aircraft are diverted from VNY to BUR, no changes in regional air pollution are expected to occur. On the other hand, pollutants such as CO, SOx, Pb, and PM are considered local pollutants because they tend to accumulate near the emissions source, and then disperse rapidly with distance. Because no new emissions of the regional pollutants ROG and NOx would occur within the South Coast Air Basin as a result of diverting operations from VNY to BUR, analysis of these pollutants is not presented. Analysis of CO, SOx, PM10, and PM2.5 are included in order to evaluate local emissions of these pollutants at BUR.

The peak daily emissions that would result from aircraft being transferred to BUR in calendar year 2014 are summarized and compared to the SCAQMD's daily significance thresholds in Table 4.3-24. As shown in the table, the increase in peak daily emissions at BUR resulting from the transfer of aircraft from VNY to BUR in 2014, based on the peak daily operational data shown in Table 4.3-21, is expected to be below the significance thresholds. The diversions occurring in 2016 would be fewer than in 2014, and would also be below the significance thresholds. Therefore, the impact is considered less than significant. No mitigation is required.

Table 4.3-24. Aircraft-Related Peak Daily Emission Increases at BUR Resulting from the Project (Calendar Year 2014)

	Peak Daily Emissions Increases (pounds per day)			
Aircraft	**CO**	**SOx**	**PM10**	**PM2.5**
GLF3	63	5	1	1
GLF2	63	5	1	1
H25A	12	< 1	< 1	< 1
B727	57	5	2	2
Peak Daily Total	**195**	**15**	**4**	**4**
Significance Threshold	*550*	*150*	*150*	*55*
Exceeding Threshold?	*No*	*No*	*No*	*No*

Objectionable Odors from Aircraft and Related Support Equipment

Aircraft have the potential to introduce objectionable odors and/or noxious fumes that could impact on- and off-site receptors. Under the peak-day scenario, the 6 LTO cycles per day would not generate a substantial amount of new odors that would result in such an impact. Odor impacts would be less than significant at BUR. No mitigation is required.

Los Angeles International Airport

Consistency with Regional Air Quality Management Plan

Refer to the discussion on consistency with AQMP under the VNY section. In summary, the project would not conflict with or obstruct implementation of the AQMP. This impact is less than significant, and no mitigation is required.

Violation of any Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation

The transfer of aircraft to LAX would result in an increase in aircraft-related emissions at LAX that would be proportional to the increase in operational activity for each aircraft type and the emission factors for each aircraft and related support equipment, as outlined in the methodology section, above. SCAQMD evaluates significance of project impacts based on daily emissions only (i.e., significance is not based on annual project-related emissions) of CO, ROG (equivalent to VOC), NOx, SOx, PM10, and PM2.5, as delineated in Table 4.3-4. As discussed in Section 4.3.2 and in the BUR section, above, the regional pollutants ROG and NOx are not included in the analysis because diverting aircraft from VNY to LAX would redistribute these regional pollutants within the South Coast Air Basin, and would not result in new emissions. Because the emissions are shifting from VNY to LAX, which are both within the South Coast Air Basin, no changes in regional air pollution are expected to occur as a result of the proposed project. The local pollutants CO, SOx, and PM are included in order to evaluate their local impacts near LAX.

The peak daily emissions resulting from aircraft being transferred to LAX in calendar year 2014 are summarized and compared to SCAQMD's daily significance thresholds in Table 4.3-25. As shown in the table, the increase in peak daily emissions at LAX resulting from the transfer of aircraft from VNY to LAX in 2014, based on the peak daily operational data shown in Table 4.3-21, is expected to be below the significance thresholds. The diversions occurring in 2016 would be fewer than in 2014, and would also be below the significance thresholds. Therefore, the impact is considered less than significant. No mitigation is required.

Table 4.3-25. Aircraft-Related Peak Daily Emission Increases at LAX Resulting from the Project (Calendar Year 2014)

	Peak Daily Emission Increases (pounds per day)			
Aircraft	**CO**	**SOx**	**PM10**	**PM2.5**
B727	57	5	2	2
GLF3	31	2	< 1	< 1
GLF2	31	2	< 1	< 1
H25A	12	< 1	< 1	< 1
Peak Daily Total	**131**	**9**	**2**	**2**
Significance Threshold	*550*	*150*	*150*	*55*
Exceeding Threshold?	*No*	*No*	*No*	*No*

Objectionable Odors from Aircraft and Related Support Equipment

Aircraft have the potential to introduce objectionable odors and/or noxious fumes that could impact on- and off-site receptors. Under the peak-day scenario, the 4 LTO cycles per day would not generate a substantial amount of new odors that would result in such an impact. Odor impacts would be less than significant at LAX. No mitigation is required.

Chino Airport

Consistency with Regional Air Quality Management Plan

Refer to the discussion on consistency with AQMP under the VNY section. In summary, the project would not conflict with or obstruct implementation of the AQMP. This impact is less than significant, and no mitigation is required.

Violation of any Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation

The transfer of aircraft to CNO would result in an increase in aircraft-related emissions at CNO that would be proportional to the increase in operational activity for each aircraft type and the emission factors for each aircraft and related support equipment, as outlined in the methodology section, above. SCAQMD evaluates the significance of project impacts based on daily emissions only (i.e., significance is not based on annual project-related emissions) of CO, VOC, NOx, SOx, PM10, and PM2.5, as delineated in Table 4.3-4. As discussed in Section 4.3.2 and in the BUR section, above, the regional pollutants ROG (equivalent to VOC) and NOx are not included in the analysis because diverting aircraft from VNY to CNO would redistribute these regional pollutants within the South Coast Air Basin, and would not result in new emissions. Because the emissions are shifting from VNY to CNO, which are both within the South Coast Air Basin, no changes in regional air pollution are expected to occur as a result of the proposed project. The local pollutants CO, SOx, and PM are included in order to evaluate their local impacts near CNO.

Diversions to CNO would not occur until 2016. The peak daily emissions resulting from aircraft being transferred to CNO in calendar year 2016 are summarized and compared to the SCAQMD's daily significance thresholds in Table 4.3-26. As shown in the table, the increase in peak daily emissions at CNO resulting from the transfer of aircraft from VNY to CNO in 2016, based on the peak daily operational data shown in Table 4.3-21, is expected to be below the significance thresholds. Therefore, the impact is considered less than significant. No mitigation is required.

Table 4.3-26. Aircraft-Related Peak Daily Emission Increases at CNO Resulting from the Project (Calendar Year 2016)

	Peak Daily Emission Increases (pounds per day)			
Aircraft	**CO**	**SOx**	**PM10**	**PM2.5**
L-39	100	1	< 1	< 1
T-38	100	1	< 1	< 1
Peak Daily Total	**200**	**2**	**< 1**	**< 1**
Significance Threshold	*550*	*150*	*150*	*55*
Exceeding Threshold?	*No*	*No*	*No*	*No*

Objectionable Odors from Aircraft and Related Support Equipment

Aircraft have the potential to introduce objectionable odors and/or noxious fumes that could impact on- and off-site receptors. Under the peak-day scenario, the 2 LTO cycles per day would not generate a substantial amount of new odors that would result in such an impact. Odor impacts would be less than significant at CNO. No mitigation is required.

South Central Coast Air Basin: CMA

Camarillo Airport

Consistency with Regional Air Quality Management Plan

VCAPCD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the South Central Coast Air Basin is in nonattainment (i.e., ozone, PM10, and PM2.5). The project would be subject to the VCAPCD's 2007 AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

The project site is consistent with the City of Camarillo General Plan. The project site is classified as public airport, consistent with the General Industrial in the Land Use Element of the General Plan. The project is consistent with this classification, as the whole of the project would consist of aircraft operations and maintenance land uses.

Because the project is consistent with the local general plan, pursuant to VCAPCD guidelines, the project is also considered consistent with the region's AQMP. As such, aircraft-related emissions are accounted for in the AQMP, which is crafted to bring the South Central Coast Air Basin into attainment for all criteria pollutants. Accordingly, the project would be consistent with the projections in the AQMP, and would have a less-than-significant impact.

A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The 2007 AQMP, the most recent AQMP adopted by VCAPCD, incorporates SCAG's 2004 Regional Transportation Plan socioeconomic forecasts of regional population and employment growth. The project would reallocate aircraft within the ASA region. Under the project, aircraft operations reallocated from VNY to CMA and other airports would remain at the same level currently projected in the AQMP. Such levels of aircraft operation growth and aircraft fleet turnover are consistent with the aircraft forecasts for the region as adopted by SCAG. Because VCAPCD has incorporated these same projections into the AQMP, it can be concluded that the project would be consistent with the projections in the AQMP. In summary, the project would not conflict with or obstruct implementation of the AQMP. This impact is less than significant, and no mitigation is required.

Violation of any Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation

The transfer of aircraft to CMA would result in an increase in aircraft-related emissions at CMA that is proportional to the increase in operational activity for each aircraft type and the emission factors for each aircraft and related support equipment, as outlined in the methodology section, above. VCAPCD evaluates the significance of project impacts based on daily emissions only (i.e., significance is not based on annual project-related emissions) of VOC and NOx, as delineated in Table 4.3-5. Diverting aircraft from VNY to CMA represents a transfer of emissions from the South Coast Air Basin to the South Central Coast Air Basin; therefore, the regional pollutants VOC and NOx were analyzed for this airport, along with the pollutants that would have an effect on local air quality.

The peak daily emissions resulting from aircraft being transferred to CMA in calendar year 2014 are summarized and compared to the VCAPCD's daily significance thresholds in Table 4.3-27. As shown in the table, the increases in emissions at CMA resulting from the transfer of aircraft from VNY to CMA in 2014, based on the operational data shown in Table 4.3-21, would exceed the emissions thresholds for VOC and NOx. Because the peak daily emissions for VOC and NOx would be exceeded at CMA, the project would result in a significant air quality impact at CMA. The project-related diversions occurring at CMA in 2016 and beyond would be fewer than in 2014, and fewer emissions would result, but VOC and NOx emissions would still likely exceed the respective thresholds.

Table 4.3-27. Aircraft-Related Peak Daily Emission Increases at CMA Resulting from the Project (Calendar Year 2014)

	Peak Daily Emission Increases (pounds per day)					
Aircraft	**CO**	**VOC**	**NOx**	**SOx**	**PM10**	**PM2.5**
GLF3	32	7	16	3	< 1	< 1
GLF2	32	7	16	3	< 1	< 1
H25A	12	5	1	< 1	< 1	< 1
B727	58	36	28	5	2	2
Peak Daily Total	**58**	**55**	**61**	**11**	**2**	**2**
Significance Threshold	*None*	*25*	*25*	*None*	*None*	*None*
Threshold Exceeded?	—	*Yes*	*Yes*	—	—	—

Significant Impact AQ-1: Exceedance of Ventura County Air Quality Management District Daily Emissions Thresholds at CMA

The project would result in emissions of VOC and NOx at CMA that exceed VCAQMD daily thresholds.

Mitigation Measures

There are no feasible measures to mitigate the project's exceedance of VCAQMD thresholds for VOC and NOx. To avoid or reduce this impact to a less-than-significant level, emissions from the project-related diversions to CMA would have to be eliminated or reduced in individual aircraft. Technology to reduce these aircraft emissions is not available, and cannot be imposed on the operating aircraft. Therefore, mitigation is infeasible and this is a significant and unavoidable impact.

Emissions at CMA represent pollutants that are being transferred to the South Central Coast Air Basin from the South Coast Air Basin. Therefore, they are new pollutants that are not accounted for in the 2007 AQMP. Because the South Central Coast Air Basin is in nonattainment for ozone and particulate matter and project-related emissions would contribute to this, the project would contribute to a significant cumulative impact. This issue is further discussed in Chapter 5 of this EIR.

Objectionable Odors from Aircraft and Related Support Equipment

The project would generate potential increases in odors and gaseous fumes by evaporative emissions and tailpipe emissions from aircraft, GSE, and APU. Odor impacts would be limited to the airport circulation routes and apron parking areas. Operation of the project may create a nuisance when located in close proximity to sensitive receptors. However, these potential increases in odors are not expected to affect a substantial number of sensitive receptor land uses for an extended period of time. Therefore, odor impacts would be less than significant. No mitigation is required.

Mojave Desert Air Basin: WJF

William J. Fox Airport in Lancaster

Consistency with Regional Air Quality Management Plan

AVAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Mojave Desert Air Basin is in nonattainment (i.e., ozone, PM10, and PM2.5). The project would be subject to the AVAQMD's Ozone Attainment Plan, which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

The project site is consistent with the City of Lancaster General Plan. The project site is classified as public airport, consistent with the General Industrial in the Land Use Element of the General Plan. The project is consistent with this classification, as the whole of the project would consist of aircraft operations and maintenance land uses.

Because the project is consistent with the local general plan, pursuant to AVAQMD guidelines, the project is also considered consistent with the region's Ozone Attainment Plan. As such, aircraft–related emissions are accounted for in the Ozone Attainment Plan, which is crafted to bring the Mojave Desert Air Basin into attainment for all criteria pollutants. Accordingly, the project would be consistent with the projections in the Ozone Attainment Plan, and would have a less-than-significant impact.

A project is consistent with the Ozone Attainment Plan if it is consistent with the population, housing, and employment assumptions that were used in the development of the Ozone Attainment Plan. The most recent Ozone Attainment Plan adopted by the AVAQMD incorporates SCAG's 2004 Regional Transportation Plan socioeconomic forecasts of regional population and employment growth. The project would reallocate aircraft within the ASA region. The aircraft operations reallocated from VNY in Los Angeles County to WJF and other airports would remain at the same level currently projected in the AQMP. Such levels of aircraft operation growth and aircraft fleet turnover are consistent with the aircraft forecasts for the region as adopted by SCAG. Because AVAQMD has incorporated these same projections into the OAP, the project would be consistent with the projections in the Ozone Attainment Plan. In summary, project development would not conflict with or obstruct implementation of the Ozone Attainment Plan. No mitigation is required.

Violation of any Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation

The transfer of aircraft to WJF would result in an increase in aircraft-related emissions at WJF (and the Mojave Desert Air Basin) that is proportional to the increase in operational activity for each aircraft type and the emission factors for each aircraft and related support equipment, as outlined in the methodology section, above. AVAQMD evaluates significance of project impacts based on peak daily and annual emissions of CO, VOC, NOx, SOx, and PM10, as delineated in Table 4.3-6. Diverting aircraft from VNY to WJF represents a transfer of emissions from the

South Coast Air Basin to the Mojave Desert Air Basin; therefore, VOC and NOx were analyzed along with the pollutants that would have an effect on local air quality.

Diversions to WJF would not occur until 2016. The peak daily and annual emissions resulting from aircraft being transferred to WJF in calendar year 2016 are summarized and compared to AVAQMD's daily and annual significance thresholds in Tables 4-28 and 4-29, respectively. As shown in the tables, the increases in peak daily and annual emissions at WJF resulting from the transfer of aircraft from VNY to WJF in 2016, based on the peak daily operational data shown in Tables 4.3-20 and 4.3-21, respectively, are expected to be below the significance threshold. Therefore, the impact is considered less than significant.

Table 4.3-28. Aircraft-Related Peak Daily Emission Increases at WJF Resulting from the Project (Calendar Year 2016)

	Peak Daily Emission Increases (pounds per day)					
Aircraft	**CO**	**VOC**	**NOx**	**SOx**	**PM10**	**PM2.5**
GLF3	63	14	35	5	1	1
GLF2	32	7	17	3	< 1	< 1
Peak Daily Total	**95**	**21**	**52**	**8**	**1**	**1**
Significance Threshold	*548*	*137*	*137*	*137*	*82*	*None*
Threshold Exceeded?	*No*	*No*	*No*	*No*	*No*	—

Table 4.3-29. Aircraft-Related Annual Emission Increases at WJF Resulting from the Project (Calendar Year 2016)

	Annual Emission Increases (pounds per year)					
Aircraft	**CO**	**VOC**	**NOx**	**SOx**	**PM10**	**PM2.5**
GLF3	2,048	450	1,132	163	20	20
GLF2	2,048	450	1,132	163	20	20
Peak Annual Total (lbs)	**4,097**	**901**	**2,263**	**326**	**40**	**40**
Peak Annual Total (tons)	**2.0**	**0.5**	**1.1**	**0.2**	**< 0.1**	**< 0.1**
Significance Threshold (tons)	*100*	*25*	*25*	*25*	*15*	*None*
Threshold Exceeded?	*No*	*No*	*No*	*No*	*No*	—

Emissions at WJF represent pollutants that are being transferred to the Mojave Desert Air Basin from the South Coast Air Basin. Therefore, they are new pollutants that are not accounted for in the 2007 AQMP. Because the Mojave Desert Air Basin is in nonattainment for ozone and particulate matter and project-related emissions would contribute to this, the project would contribute to a significant cumulative impact. This issue is further discussed in Chapter 5 of this EIR.

Objectionable Odors from Aircraft and Related Support Equipment

The project would generate potential increases in odors and gaseous fumes by evaporative emissions and tailpipe emissions from aircraft, GSE, and APU during operations. Odor impacts would be limited to the airport circulation routes and apron parking areas. Operation of the project may create a nuisance when located in close proximity to sensitive receptors. However, these increases in potential odors are not expected to affect a substantial number of sensitive receptor land uses for an extended period of time. Therefore, odor impacts would be less than significant. No mitigation is required.

4.3.5.2 Health Risk Associated with Airport Emissions

Based on CARB guidelines for determining the need for preparing Health Risk Assessments (HRA) for toxic air contaminants, a detailed OEHHA-methodology HRA is not warranted for this project due to the fact that all identified sensitive receptors are beyond one-quarter mile from diversion airports (California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, April 2005). Therefore, a screening level HRA analysis was performed based on CARB guidance.

The screening level HRA evaluation was conducted in the following steps:

1. Estimation of chemical emissions from operational sources;
2. Calculation of possible impacts to air quality using emissions estimates;
3. Selection of TACs of concern for airport operations;
4. Evaluation of possible exposures to TACs; and,
5. Review of the Health Risk Assessment performed for the LAX Master Plan EIS/EIR.

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005) provides recommendations for siting new sensitive land uses near major emission sources such as airports that may emit TACs.

Speciation profiles have been developed by CARB for various types of sources. Speciation profiles provide a breakdown of individual components of hydrocarbon emissions and particulate emissions. For aircraft engines, CARB had developed both an organic speciation profile and particulate matter speciation profile for aircraft engines. The speciation profile for organics was based on data presented in a report prepared in 1984. Since that time, other environmental planning documents (Oakland Airport Master Plan SEIR, LAX Master Plan EIS/EIR) have evaluated the applicability of that speciation profile and other source test data for aircraft engines.

It should be noted that the methods used in conducting an HRA are conservative; as a result, they are more likely to overestimate than underestimate possible health risks. For example, risks and hazards are calculated for individuals that are likely to be exposed at locations where TAC concentrations are predicted to be highest. Further, individuals are assumed to be exposed for 250 days of the year 24 hours per day, and for as many as (70) years to maximize estimates of possible exposure. It should also be noted that the estimated peak daily aircraft flights are very conservative for the proposed project. Consequently, the resulting incremental cancer risk estimates represent upper-range predictions of exposure, and therefore health risk, which may be associated with living near or working near and breathing emissions from the airports.

Peak daily and annual changes in TAC emissions that would occur at each airport as a result of the project are presented in Tables 4-30 and 4-31, respectively.

Table 4.3-30. Peak Daily Aircraft-Related Emission Changes in Toxic Air Contaminant Emissions at VNY and Diversion Airports as a Result of the Project

	Peak Daily Emission Increases (pounds per day)							
Toxic Air Contaminant	**Aircraft Total***	**VNY 2014**	**VNY 2016**	**BUR 2014**	**LAX 2014**	**CMA 2014**	**CNO 2016**	**WJF 2016**
1,3-Butadiene	309.6	-3.4	-4.4	1.5	1.2	1.2	0.6	0.4
Formaldehyde	2,541.2	-28.9	-37.7	12.4	9.8	9.8	4.8	3.7
Acetaldehyde	790.3	-8.9	-11.7	3.8	3.0	3.0	1.5	1.2
Acrolein	-	-4.4	-5.7	1.9	1.5	1.5	0.7	0.6
Benzene	388.7	-3.7	-4.9	1.6	1.3	1.3	0.6	0.5
Naphthalene	97.2	-1.1	-1.4	0.5	0.4	0.4	0.2	0.1
Chromium	—	—	—	—	—	—	—	—
Lead	3.99	—	—	—	—	—	—	—

Note:

Negative values denote decreases in emissions as a result of the project.

*Source: SCAQMD MATES III Study, Appendix VIII, 2005 Emissions by Major Source Category.

Table 4.3-31. Annual Aircraft-Related Changes in Toxic Air Contaminant Emissions at VNY and Diversion Airports as a Result of the Project

Toxic Air Contaminant	Annual Emission Increases (tons per year)							
	LA County Total**	VNY 2014	VNY 2016	BUR 2014	LAX 2014	CMA 2014	CNO 2016	WJF 2016
1,3-Butadiene	437	-0.04	-0.04	0.01	0.01	0.01	0.01	0.01
Formaldehyde	3,350	-0.31	-0.37	0.09	0.07	0.05	0.06	0.08
Acetaldehyde	1,343	-0.10	-0.12	0.03	0.02	0.02	0.02	0.02
Acrolein	-	-0.05	-0.06	0.01	0.01	0.01	0.01	0.01
Benzene	2,143	-0.04	-0.05	0.01	0.01	0.01	0.01	0.01
Naphthalene	—	-0.01	-0.01	—	—	—	—	—
Chromium	0.07*	—	—	—	—	—	—	—
Lead	—	—	—	—	—	—	—	—

Note:

* Includes only hexavalent chromium, which is a subset of total chromium emissions.

**Source: California Air Resources Board, 2008 California Almanac, Appendix C, Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants.

As indicated in Tables 4.3-30 and 4.3-31, under the project, the aircraft TAC emissions would be reallocated to different airports within the ASA region. The reduction in aircraft TAC emissions at VNY and WJM airports would offset the TAC emission increases at BUR, LAX, CMA, and CNOs. Table 4.3-30 presents the total daily TAC emissions for all aircraft in the South Coast Air Basin, as estimated in SCAQMD's *Multiple Air Toxics Exposure Study III* (South Coast Air Quality Management District 2008). The table also presents the net changes in the project's daily TAC emissions to the MATES III values using the same toxic speciation factors. Table 4.3-31 compares the net change in the annual project TAC emissions to the total annual TAC emissions from all sources in Los Angeles County, as provided by CARB in their *2008 California Almanac*. The reallocated aircraft operations and the net changes in TAC emissions from the project were already accounted for in the MATES III study. Therefore, impacts from regional TACs would be less than significant. No mitigation is required.

On the local level, the increase in TAC emissions at BUR, LAX, CMA, and CNO resulting from the project's phaseout at VNY may be a subject of concern to local communities. CARB's Air *Quality and Land Use Handbook: A Community Health Perspective* (April 2005) provides CARB for the siting of new sensitive land uses near major sources of emissions. CARB's air pollution studies indicate that sensitive receptors close to major sources of emissions may lead to adverse health effects beyond those associated with regional TAC emissions. There are five carcinogenic TACs that constitute the majority of the known health risk from aircraft: 1,3-butadiene, formaldehyde, acetaldehyde, benzene, and lead.

For the purpose of further evaluating the potential health risks on sensitive receptors near the diversion airports, a review of the HRA study from the LAX Master Plan (April 2004) was conducted. In April 2004, LAWA certified the LAX Master Plan EIR/EIS (LAWA 2004). The study contained the forecasted flight operations from 763,866 annual operations in 1996 to an unconstrained and conservative forecast of 1,004,591 annual operations in 2015. The addition of aircraft operations to the diversion airports as a result of the VNY phaseout under consideration in this EIR is far smaller than the addition of operations studied at LAX.

Due to changes in activity levels at airports associated with implementation of the proposed project, increased emissions of TAC are possible. According to the LAX Master Plan EIR/EIS under the No Project Scenario for year 2015, the predicted incremental cancer risks for residents would be 330 in ten million. The risk estimate was derived from a mathematical model that calculates risks to a hypothetically maximally exposed individual (MEI). The value represents an estimate of the greatest possible impact for any person on location near LAX. For the sensitive receptors, the LAX Master Plan EIR report also found that the incremental cancer risks would be lower for the MEI school child. The greatest incremental cancer risk would be 1 in 1 million, compared to the year 2000 condition. The largest incremental non-cancer hazard for the MEI school child would be 0.4 when compared to the year 2000 condition. Based on the LAX Master Plan EIR/EIS, the resultant health risks impacts on school children were found to be less than significant. The increases at the proposed VNY phaseout does not propose operations beyond the conservative estimate reviewed in the LAX Master Plan EIR/EIS; therefore, the project's impacts at LAX would also be less than significant.

CARB studies show that TAC levels can be significantly higher within 0.25 mile of major emission sources such as airports and then diminish rapidly as distance from the source increases. Actual concentrations of TAC will vary at a particular location depending on total aircraft volume, type of aircraft, prevailing winds and other variables. Based on the information provided in Section 4.3.3.5, Sensitive Receptors, all sensitive receptors were found to be located more than 0.25 mile from the airports. Therefore, it is unlikely that sensitive receptors downwind of more than 0.25 mile from the airport site would experience any significant cancer risk directly associated with aircraft TAC emissions from the project. As stated above in Section 4.3.3.5, there are no sensitive receptors located within 0.25 mile of the diversion airports that would receive additional emissions. In comparison to the LAX Master Plan EIR/EIS, which estimated a less-than-significant health-risk assessment for large-scale increases in operational traffic at LAX, it can be inferred that the proposed project related aircraft operations at BUR, LAX, CMA, and CNO would not incrementally increase the MEI cancer risk to above the 10 in 1 million threshold, nor would it exceed the 1.0 non-cancer hazard index for the MEI school child. Impacts would also be less than significant at WJF, because there are no sensitive receptors in the vicinity of that airport. Therefore, the impacts from local TACs associated with the project would be considered less than significant. No mitigation is required.

4.3.6 Summary of Significant Impacts and Mitigation Measures

Significant Impact AQ-1: Exceedance of Ventura County Air Quality Management District Daily Emissions Thresholds at CMA

The project would result in emissions of VOC and NOx at CMA that exceed VCAQMD daily thresholds.

Mitigation Measures

There are no feasible measures to mitigate the project's exceedance of VCAQMD thresholds. To avoid or reduce this impact to a less-than-significant level, emissions from the project-related diversions to CMA would have to be eliminated or reduced in individual planes. Technology to reduce these aircraft emissions is not available, and cannot be imposed on the operating aircraft. Therefore, mitigation is infeasible and this is a significant and unavoidable impact.