5.3 AIR QUALITY

5.3.1 METHODOLOGY

This section analyzes potential local and regional air quality impacts and is based on a general discussion of pollutant emissions that may be expected with construction and use/operation of the proposed facilities and improvements in the WNDBRA, as set forth in the MDPI. Because project designs and specific locations for individual facilities and improvements have not been developed, air quality emissions modeling has not been undertaken, and instead will have to be performed as part of subsequent environmental review. Greenhouse gas (GHG) emissions and climate change are addressed separately in Section 5.17, Greenhouse Gas Emissions, of this EIR.

5.3.2 EXISTING CONDITIONS

Criteria Air Pollutants

Concentrations of the following air pollutants are used as indicators of ambient air quality conditions: nitrogen dioxide (NO_2); ozone (O_3); particulate matter, including both particulate matter equal to or less than 10 microns in diameter (PM10) and particulate matter equal to or less than 2.5 microns in diameter (PM2.5), carbon monoxide (CO), sulfur dioxide (SO_2), and lead (Pb). These air pollutants are commonly referred to as "criteria air pollutants" since they are the most prevalent air pollutants known to be deleterious to human health. Extensive documentation is available on the health-effects criteria for these pollutants. A description of each criteria air pollutant, including source types and health effects, is provided below.

Nitrogen Dioxide

Nitrogen gas, normally relatively inert (nonreactive), comprises about 80 percent of the air. At high temperatures (e.g., in a combustion process) and under certain other conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitrogen oxides (NOx). Nitric oxide (NO), NO_2, and nitrous oxide (N_2O) are important constituents of NOx. NO is converted to NO_2 in the atmosphere. While the National Ambient Air Quality Standards (NAAQS) only address NO_2, NO and NO_2 are both precursors in the formation of O_3 and PM2.5. Because of this and the fact that NO emissions largely convert to NO_2, NOx emissions are typically examined when assessing potential air quality impacts. Motor vehicle emissions are the main source of NOx in urban areas. Other important sources of NOx are boilers; diesel engines in construction equipment, trains, and ships; gas turbines; and stationary reciprocating internal combustion engines.

NO_2 is a brownish, highly reactive gas that is present in all urban environments. NO_2 is toxic to various animals and to humans because of its ability to combine with water in the eyes, lungs, mucus membranes, and skin to form nitric acid. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations of NO_2 can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations among NO_2 concentrations and (1) daily mortality from causes related to respiratory and cardiovascular issues and (2) hospital admissions for respiratory conditions.

Ozone

Ozone (O_3) is a secondary pollutant so it is not directly emitted. It is a gas that is formed when volatile organic compounds (VOCs) (also referred to as reactive organic gases) and NOx undergo photochemical reactions that occur in the presence of sunlight. Thus, VOC and

NOx are the O_3 precursors. The primary source of VOC emissions is unburned hydrocarbons in motor vehicles and other internal combustion engine exhaust. NOx forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form; as a result, meteorology and terrain play a major role in O_3 formation. Generally, low wind speeds or stagnant air combined with warm temperatures and clear skies provide the optimum conditions for O_3 formation. As a result, O_3 is known as a summertime air pollutant.[1] Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind, and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when ozone levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level ozone exposure to a variety of problems, including:

- lung irritation that can cause inflammation much like a sunburn;
- wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities;
- permanent lung damage to those with repeated exposure to ozone pollution; and
- aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Particulate Matter

Particulate matter includes both aerosols and solid particles of a wide range of sizes and composition. Of particular concern are those particles smaller than 10 microns in size (PM10) and smaller than or equal to 2.5 microns (PM2.5). Particulate matter size refers to the aerodynamic diameter of the particle. Smaller particles are of greater concern because they can penetrate deeper into the lungs than large particles.

PM10 is generally emitted directly as a result of mechanical processes that crush or grind larger particles most typically through construction activities and vehicular travel; the emissions are described as fugitive dust.[2] Fugitive dust is also generated during moderate to high wind episodes. The principal sources of dust in the urban areas are grading, construction, disturbed areas of soil, and dust entrained by vehicles on roadways. PM10 generally settles out of the atmosphere rapidly and is not readily transported over large distances.

PM2.5, as well as being included in the PM10 sources described above, is directly emitted in combustion exhaust from diesel engines in trucks, construction equipment, and trains, and formed in atmospheric reactions between various gaseous pollutants including NOx, sulfur oxides (SOx), and VOCs. PM2.5 can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

[1] Ground-level O_3 is not to be confused with atmospheric O_3 or the "ozone layer", which occurs very high in the atmosphere and shields the planet from some ultraviolet rays.

[2] In air pollution discussion, "fugitive" describes sources that are not confined to specific emission points such as power plant stacks or vehicle exhaust pipes.

Airborne particulate matter principally affects the respiratory system. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing fine particles (i.e., PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses and premature death, and people with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to inhaling PM10 and PM2.5. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

Short-term exposures to high PM2.5 levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposures to high PM2.5 levels are associated with premature mortality and development of chronic respiratory disease. Short-term exposures to high PM10 levels are associated with hospital admissions for cardiopulmonary diseases, increased respiratory symptoms, and possible premature mortality. The USEPA has concluded that available evidence does not suggest an association between long-term exposure to PM10 at current ambient levels and health effects (USEPA and FHWA 2006).

Carbon Monoxide

Carbon monoxide (CO) is a colorless and odorless gas which, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease, and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow-moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within approximately 600 feet of heavily traveled roadways. The highest concentrations are generally associated with cold, stagnant weather conditions that occur during the winter. Overall, CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Sulfur Dioxide

Sulfur oxides (SOx) constitute a class of compounds of which sulfur dioxide (SO_2) and sulfur trioxide (SO_3) are of greatest importance. Ninety-five percent of pollution-related SOx emissions are in the form of SO_2. SOx emissions are typically examined when assessing potential air quality impacts of SO_2. The primary contributor of SOx emissions is fossil fuel combustion for generating electric power. Industrial processes, such as nonferrous metal smelting, also contribute to SOx emissions. SOx is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels, greatly reducing SOx emissions from vehicles.

SO_2 combines easily with water vapor, forming aerosols of sulfurous acid, a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air, forming the even more irritating and corrosive sulfuric acid. Peak levels of SO_2 in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO_2 gas and particles can cause respiratory illness and aggravate existing heart disease. SO_2 reacts with other chemicals in the air to form tiny sulfate particles which are measured as PM2.5.

Lead

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. When the USEPA adopted the lead standard in 1978, it was estimated that over 90 percent of ambient lead concentrations were attributable to the use of lead in gasoline. The phase-out of lead in gasoline began during the 1970s, and subsequent regulations virtually eliminated lead from the gasoline sold in California. Lead emissions from industrial sources such as battery recycling, lead smelters, cement and glass manufacturing, metal mining, and the use of non-leaded fuel in certain general aviation applications (but not in commercial passenger aircraft) can still pose "hot spot" problems in a few locations. On October 15, 2008, the USEPA revised the federal ambient air quality standard for lead, lowering it from 1.5 micrograms per cubic meter ($\mu g/m^3$) to 0.15 $\mu g/m^3$. The USEPA determined that numerous health studies are now available that demonstrate health effects at much lower levels of lead than previously thought (CARB 2009b).

Lead is a stable compound that persists and accumulates both in the environment and in animals. In humans, it affects the body's blood-forming, nervous, and renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological and gastrointestinal systems, although there is significant individual variability in response to lead exposure.

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different from the "criteria" pollutants previously discussed in that ambient air quality standards have not been established for them. TACs occurring at extremely low levels may still cause health effects, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk, and chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM. In 1998, California identified diesel exhaust PM as a TAC based on its potential to cause cancer, premature death, and other health problems. Diesel engines also contribute to California's fine particulate matter (i.e., PM2.5) air quality problems. Those most vulnerable are children whose lungs are still developing and the elderly who may have other serious health problems. Based on year 2005 emissions in California, diesel PM contributes each year to approximately 3,500 premature deaths and thousands of hospital admissions, asthma attacks and other respiratory symptoms, and lost workdays. Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. In addition, diesel soot causes visibility reduction and is a potent global warmer (CARB 2009c).

Regulatory Setting

Air quality in the Whittier Narrows area is regulated by the USEPA, the California Air Resources Board (CARB), and the South Coast Air Quality Management District (SCAQMD). Each of these

agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although USEPA regulations may not be superseded, both State and local regulations may be more stringent. The federal, State, and local regulations for criteria air pollutants and TACs are discussed below.

Federal

Clean Air Act

At the federal level, the USEPA has been charged with implementing national air quality programs. The USEPA's air quality mandates are drawn primarily from the Federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments were made by Congress in 1990.

The CAA requires the USEPA to establish NAAQS. As shown in Table 5.3-1, the USEPA has established primary and secondary NAAQS for the seven criteria pollutants. The primary standards protect the public health and the secondary standards protect public welfare. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. As part of its enforcement responsibilities, the USEPA requires each State with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain and maintain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution by using a combination of performance standards and market-based programs within the SIP-identified timeframe.

TABLE 5.3-1
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	State Standards[a,c]	Federal Standards[b]	
			Primary[c,d]	Secondary[c,]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Same as Primary
PM10	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
PM2.5	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	15.0 µg/m^3	Same as Primary
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (56 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (338 µg/m^3)	0.100 ppm	0.053 ppm (100 µg/m^3)

TABLE 5.3-1 (Continued)
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	State Standards[a,c]	Federal Standards[b]	
			Primary[c,d]	Secondary[c,]
SO_2[g]	AAM	–	0.030 ppm (80 µg/m^3)	–
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm	–
Lead[g]	30 day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride[f]	24 Hour	0.01 ppm (26 µg/m^3)		

–: No Standard; AAM: annual arithmetic mean; ppm: parts per million; µg/m^3: micrograms per cubic meter; mg/m^3: milligrams per cubic meter.

[a] California standards for O_3, CO (except Lake Tahoe), SO_2 (1 and 24 hour), NO_2, PM10, PM2.5, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards (other than O_3, PM10, PM2.5, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current federal policies.

[c] Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

[f] Annual Arithmetic Mean

[g] CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.[h] On June 2, 2010, the USEPA established a 1-hour primary standard for SO_2. In the same action, the 24-hour and annual standards were revoked, but they remain in this table, consistent with the table published by the USEPA.

Source: CARB 2010a; USEPA 2010c.

Hazardous Air Pollutant Programs

The USEPA has programs for identifying and regulating hazardous air pollutants (HAPs). Title III of the Clean Air Act Amendments (CAAA) directs the USEPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP may be different for major sources than for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (tpy) of any HAP or more than 25 tpy of any combination of HAPs; all other sources are considered area sources. The CAAA called on the USEPA to promulgate emissions standards in two phases. In the first phase (1992–2000), the USEPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring Maximum Achievable Control Technology (MACT). For area sources, the standards may be different based on generally available control technology. In the second phase (2001–2008), the USEPA is required to promulgate health risk-based emissions standards, where it is deemed necessary, to address risks remaining after implementation of the technology-based NESHAP standards.

The CAAA also requires the USEPA to promulgate vehicle or fuel standards containing reasonable requirements for controlling toxic emissions of benzene and formaldehyde at a minimum. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAAA requires the use of reformulated gasoline in selected areas with the most severe O_3 non-attainment conditions to further reduce mobile-source emissions.

State

California Clean Air Act

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and State air pollution control programs in California. In this capacity, CARB conducts research, and sets the California Ambient Air Quality Standards (CAAQS) shown in Table 5.3-1. In most cases, the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

CARB compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. For regions that do not attain the CAAQS, CARB requires the air districts to prepare plans for attaining the standards. These plans are then integrated into the State SIP. CARB establishes emissions standards for motor vehicles sold in California; consumer products (e.g., hair spray, aerosol paints, and barbecue lighter fluid); and various types of commercial equipment.[3] It also sets fuel specifications to further reduce vehicular emissions.

Tanner Air Toxics Act and Hot Spots Act

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Act) (AB 2588). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted the USEPA's list of HAPs as TACs. Diesel particulate matter (diesel PM) was added to CARB's list of TACs in 1998.

[3] In order to set vehicle emissions standards, CARB must obtain a waiver from the USEPA.

Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions (e.g., the ATCM limits truck idling to five minutes in accordance with 13 *California Code of Regulations* [CCR], Chapter 10 Section 2485).

CARB has adopted diesel-exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). Mobile-source emissions of TACs, including diesel PM, have been reduced significantly over the last decade, and will be reduced further in California through a progression of regulatory measures and control technologies. Compared with emissions in 2000, it was expected that diesel PM concentrations will be reduced by 75 percent in 2010 and 85 percent in 2020 (CARB 2000). The most recent data from CARB relative to that goal was in April 2008, which state that adopted regulations are anticipated to achieve 74 percent reduction, and regulations "in progress" would increase the reduction to 85 percent (Hand 2010, CARB 2008a).

CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective*, which provides guidance concerning land use compatibility with TAC sources (CARB 2005). While not a law or adopted policy, the handbook offers advisory recommendations for siting sensitive receptors near uses associated with TACs (such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities) to help keep children and other sensitive populations out of harm's way.

Regional

Air Quality Management Plan for the South Coast Air Basin

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin (SoCAB). To that end, the SCAQMD, a regional agency, works directly with the Southern California Association of Governments (SCAG), County transportation commissions, and local governments, and cooperates actively with all federal and State government agencies. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMPs). Two versions (2003 and 2007) of the AQMPs are in different stages of approval. The 2003 AQMP is an update to the 1997 AQMP. The 2003 AQMP updates the attainment demonstration with the federal standards for O_3 and PM10; replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a future CO maintenance plan; and updates the maintenance plan for the federal NO_2 standard, which the SoCAB has met since 1992. CARB submitted the 2003 State and Federal Strategy of the California SIP (which incorporates the 2003 AQMP) to the USEPA on January 9, 2004. However, this SIP has not been approved, and the 1997 AQMP with 1999 amendments remains the federally approved AQMP.

The SCAQMD Governing Board adopted the 2007 AQMP on June 1, 2007. The purpose of the 2007 AQMP for the SoCAB is to set forth a comprehensive program that will lead the region into compliance with federal 8-hour O_3 and PM2.5 air quality standards (SCAQMD 2007). Federal and State 8-hour O_3 and PM2.5 standards were implemented subsequent to 2003. CARB adopted the State Strategy for the 2007 SIP, including the 2007 AQMP as part of the 2007 SIP, on September 27, 2007. On November 28, 2007, CARB submitted a SIP revision to the USEPA for O_3, PM2.5, CO, and NO_2 in the SoCAB; this revision is identified as the "2007 South Coast SIP". The 2007 AQMP/2007 South Coast SIP demonstrates attainment of the federal PM2.5 standard in the SoCAB by 2014 and attainment of the federal 8-hour O_3 standard by 2023. The SIP also includes a request to reclassify the O_3 attainment designation from "severe" to "extreme" (CARB 2007). The USEPA approved the redesignation, and it became effective on June 4, 2010. The Extreme designation requires the attainment of the 8-hour O_3 standard in the SoCAB by June 2024 (USEPA 2010b).

In March 2009, CARB reported the following status:

> With its actions since adopting the State Strategy in September 2007, California now has in place programs and regulations that will achieve 87 percent of the reductions needed for PM2.5 attainment in the South Coast. California has also achieved 90 percent of the reductions needed from near-term measures for ozone attainment in the South Coast. Additional reductions are still needed from long term measures (CARB 2009a).

SCAQMD Rules

As mentioned earlier, the SCAQMD adopts rules and regulations for maintaining clean air in the region. All projects are subject to SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the proposed facilities and improvements at the WNDBRA may include, but are not limited to:

- ***Rule 401, Visible Emissions.*** A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.

- ***Rule 402,Nuisance.*** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property. The provisions of this rule do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- ***Rule 403, Fugitive Dust.*** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or man-made condition capable of generating fugitive dust.

- ***Rule 1113, Architectural Coatings.*** No person shall apply or solicit the application of any architectural coating within the SCAQMD, with a VOC content in excess of the values specified in a table incorporated in the Rule.

- ***Regulation XIV, Toxics and Other Non-Criteria Pollutants, and Rule 1401, New Source Review.*** Under SCAQMD Regulation XIV and Rule 1401, all sources that possess the potential to emit TACs are required to obtain permits from the SCAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. The SCAQMD limits emissions and public exposure to TACs through a number of programs and prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

Environmental Setting

Climate and Meteorology

Air quality is affected by both the rate and location of pollutant emissions and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions (such as wind speed, wind direction, and air temperature gradients), and local topography provide the link between air pollutant emissions and air quality.

The WNDBRA is located in the SoCAB, which consists of the developed portions of San Bernardino, Riverside, and Los Angeles Counties and all of Orange County. The distinctive climate of the SoCAB is determined by its terrain and geographic location. The SoCAB is a coastal plain with connecting broad valleys and low hills; it is bound by the Pacific Ocean to the southwest and has high mountains around the rest of its perimeter. The general region lies in the semi-permanent, high-pressure zone of the Pacific, resulting in a mild climate that is 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.

Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by the daytime onshore sea breezes. At night, the wind generally slows and reverses direction traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons. The vertical dispersion of air pollutants in the SoCAB is hampered by the presence of persistent temperature inversions. High-pressure systems, such as the semi-permanent, high-pressure zone in which the SoCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, which is called a subsidence inversion. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog. The basin-wide occurrence of inversions between 0 and 3,500 feet above sea level occurs an average of 191 days per year (SCAQMD 1993).

Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather (i.e., residences, schools, playgrounds, child-care centers, convalescent centers, retirement homes, and athletic fields) are defined as sensitive receptors by the SCAQMD (SCAQMD 1993).

Existing sensitive receptors within or near the WNDBRA include:

- Residential areas near the boundaries of the WNDBRA;
- Loma Elementary School to the north;
- South El Monte High School to the east;
- Dean L. Shively Middle School to the northeast; and
- Athletic fields, sports courts, and exercise areas of the WNDBRA.

Existing Air Quality and Attainment Status

Criteria air pollutant concentrations are measured at 35 monitoring stations in the SoCAB. The South San Gabriel monitoring station in Pico Rivera is the closest to the project site with recent data for O_3, 8-hour CO, PM2.5, Pb, and NO_2. Air quality data for 1-hour CO, PM10, and SO_2 is available from the Central Los Angeles monitoring station. In general, the ambient air quality measurements from these stations are representative of the air quality in the vicinity of the project site. Table 5.3-2 summarizes the air quality data for the last three years.

TABLE 5.3-2
AMBIENT AIR QUALITY AT PICO RIVERA AND CENTRAL LOS ANGELES MONITORING STATIONS

Pollutant	California Standard	National Standard	Year	Max. Level	Days State Standard Exceeded[a]	Days National Standard Exceeded[a]
O_3 (1 hour)	0.09 ppm	None	2009	0.131	8	N/A
			2008	0.107	7	N/A
			2007	0.135	6	N/A
O_3 (8 hour)	0.070 ppm	0.075 ppm for 8 hr.	2009	0.101	6	3
			2008	0.094	12	5
			2007	0.101	9	5
PM10 (24 hour)	50 µg/m^3	150 µg/m^3	2009	70.0	3	0
			2008	64.0	2	0
			2007	77.0	5	0
PM10 (AAM)	20 µg/m^3 AAM	None	2009	*	*	N/A
			2008	*	*	N/A
			2007	33.0	Yes	N/A
PM2.5 (24 hour)	–	35 µg/m^3	2009	71.0	N/A	2
			2008	47.2	N/A	4
			2007	63.6	N/A	5
PM2.5 (AAM)	12 µg/m^3	15.0 µg/m^3	2009	*	*	*
			2008	14.9	Yes	No
			2007	16.6	Yes	Yes
NO_2 (1 hour)	0.18 ppm	None	2009	0.096	0	N/A
			2008	0.099	0	N/A
			2007	0.108	0	N/A
NO_2 (AAM)	0.030 ppm	0.053 ppm	2009	0.026	No	No
			2008	0.027	No	No
			2007	0.096	Yes	Yes

TABLE 5.3-2 (Continued)
AMBIENT AIR QUALITY AT PICO RIVERA AND CENTRAL LOS ANGELES MONITORING STATIONS

Pollutant	California Standard	National Standard	Year	Max. Level	Days State Standard Exceeded[a]	Days National Standard Exceeded[a]
CO (1 hour)	20 ppm	35 ppm	2009	*	*	*
			2008	3	0	0
			2007	3	0	0
CO (8 hour)	9 ppm	9 ppm	2009	2.11	0	0
			2008	2.11	0	0
			2007	2.89	0	0
SO_2 (AAM)	–	0.030 ppm	2009	<0.001	N/A	No
			2008	0.0003	N/A	No
			2007	0.0009	N/A	No
SO_2 (24 hour)	0.04 ppm	0.14 ppm	2009	0.002	0	0
			2008	0.003	0	0
			2007	0.005	0	0
SO_2 (1 hour)	0.25 ppm	0.075 ppm	2009	*	*	*
			2008	0.01	No	No
			2007	0.01	No	No
Pb (30 day avg.)	1.5 µg/m^3	–	2009	*	*	N/A
			2008	0.02	No	N/A
			2007	0.05	No	N/A
Pb (Calendar quarter)	–	1.5 µg/m^3	2009	*	N/A	*
			2008	0.02	N/A	No
			2007	0.02	N/A	No

µg/m^3: micrograms per cubic meter; ppm: parts per million; SSG: South San Gabriel Station; CLA: Central Los Angeles Station
[a] For annual averaging times a "yes" or "no" response is given if the annual average concentration exceeded the applicable standard. N/A indicates that there is no applicable standard.
[b] Annual Arithmetic Mean
* Data Not Reported or insufficient data available to determine the value.
Source: CARB 2010; SCAQMD 2010.

Attainment Designations

Based on monitored air pollutant concentrations, the USEPA and CARB designate an area's status in attaining the NAAQS and the CAAQS, respectively, for the criteria pollutants identified above. As previously addressed, when a region is designated as a nonattainment area, the State is required to prepare a SIP and the air district is required to prepare a regional attainment plan. When an area has been reclassified from nonattainment to attainment status for a federal standard, the status is identified as "maintenance", and there must be a plan and measures that will keep the region in attainment for the following ten years. Table 5.3-3 summarizes the attainment status in the SoCAB for the criteria pollutants.

TABLE 5.3-3
ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SOUTH COAST AIR BASIN

Pollutant	State	Federal
O_3 (1 hour)	Nonattainment	No standard
O_3 (8 hour)		Extreme Nonattainment[a]
PM10	Nonattainment	Serious Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Nonattainment[b]	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Nonattainment[c/]/Attainment	Attainment
All others	Attainment/Unclassified	No standards

[a] The USEPA approved redesignation from Severe 17 to Extreme Nonattainment on May 5, 2010, to be effective June 4, 2010.
[b] The SoCAB was reclassified from attainment to nonattainment for NO_2 on March 25, 2010.
[c] Los Angeles County was reclassified from attainment to nonattainment for lead on March 25, 2010; the remainder of the SoCAB is in attainment of the State standard.

Sources: CARB 2010b, CARB 2007, USEPA 2010a, USEPA 2010b.

Toxic Air Contaminants

Carcinogenic risks (i.e., cancer risks) are estimated as the incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a probability (e.g., 10 in 1 million). A risk level of 1 in a million implies a likelihood that up to 1 person, out of 1 million equally exposed people, would contract cancer if exposed continuously (24 hours per day) to the specific concentration over 70 years (an assumed lifetime). This would be in addition to those cancer cases that would normally occur in an unexposed population of one million people (USEPA 2009). The Hazard Index (HI) expresses the potential for chemicals to result in non-cancer-related health impacts. HIs are expressed using decimal notation (e.g., 0.001). A calculated HI exposure less than 1.0 will likely not result in adverse, non-cancer-related health effects over a lifetime of exposure. However, an HI greater than 1.0 does not necessarily mean that adverse effects will occur (USEPA 2009). Pursuant to SCAQMD Rule 1401(d)(1), the risks associated with potential exposure to emissions from a source equipped with the best available control technology for toxics (T-BACT) and from all emissions sources included within a "project" are acceptable if the incremental cancer risk (1) is less than 10 in 1 million and (2) is less than 1 in 1 million for sources not equipped with T-BACT.

The Multiple Air Toxics Exposure Study III (MATES III) is a monitoring and evaluation study conducted in the SoCAB. The study is a follow up to previous air toxics studies in the SoCAB and is part of the SCAQMD Governing Board's 2003–2004 Environmental Justice Workplan.

The MATES III Study consists of several elements, including a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the SoCAB. The study focuses on the carcinogenic risk from exposure to air toxics. It does not estimate mortality or other health effects from particulate exposures.

The MATES III study estimates that the carcinogenic risk from air toxics in the SoCAB, based on the average concentrations at the fixed monitoring sites during 2004, 2005, and 2006 is about 1,200 per 1 million. This risk refers to the expected number of additional cancers in a population of 1 million individuals that are exposed over a 70-year lifetime. Using the MATES III methodology, about 94 percent of the risk is attributed to emissions associated with mobile sources, and about 6 percent of the risk is attributed to toxics emitted from stationary sources, which include industries and businesses such as dry cleaners and chrome plating operations. The results indicate that diesel exhaust is the major contributor to air toxics risk, accounting, on average, for about 84 percent of the total (SCAQMD 2008b).

The MATES III study used monitored data to model risk throughout the SoCAB. The modeled carcinogenic risk for the area that includes the WNDBRA is 1,281 to 1,449 per 1 million, which is higher than the SoCAB average (SCAQMD 2008c).

Existing Emissions from the Project Site

Existing emissions at the WNDBRA include pollutants from both area and mobile sources, as generated by the vehicle trips of employees, visitors, and users of the facilities at the site and various stationary equipment at the site.

According to the CARB Community Health Air Pollution Information System, oil wells at Montebello Hills to the west, industrial uses to the north, and the Sanitation Districts of Los Angeles County's (LACSD's) wastewater treatment plant in the WNDBRA are existing stationary sources of TACs within and near the WNDBRA (CARB 2009e). The SCAQMD's Facility Information Detail (FIND) database shows the LACSD's wastewater treatment plant, South El Monte High School, and the LA County Maintenance Yard as regulated uses in the WNDBRA, including various other commercial and industrial uses near the site. Vehicles on the freeways and roadways adjacent to the project area are also sources of diesel PM and other TACs associated with vehicle exhaust.

5.3.3 THRESHOLDS OF SIGNIFICANCE

The following significance criteria are derived from Appendix G of the State CEQA Guidelines. The project would result in a significant adverse impact related to air quality if it would:

Threshold 5.3.1: *Conflict with or obstruct implementation of the applicable air quality plan;*

Threshold 5.3.2: *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*

Threshold 5.3.3: *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors);*

Threshold 5.3.4: *Expose sensitive receptors to substantial pollutant concentrations; or*

Threshold 5.3.5: *Create objectionable odors affecting a substantial number of people.*

5.3.4 ENVIRONMENTAL IMPACTS

Project Design Features

The proposed MDPI includes an improvement program that would indirectly benefit air quality:

PDF 5.3.1 ***Green Streets.*** Green Streets will be developed on roadways within and near the WNDBRA to provide pedestrian and bicycle safety, storm water management, and streetscape aesthetics. Landscape edges that treat runoff or transformation of concrete medians to landscaped medians that treat runoff would help improve storm water quality in the Rio Hondo and San Gabriel River. While existing travel lanes would be maintained, parkways and bike lanes would be added to promote alternatives to vehicle use.

Standard Conditions

There are existing State, regional and local regulations that would directly or indirectly reduce air quality emissions and compliance with these regulations would be required for proposed facilities and improvements in the WNDBRA. These include:

SC 5.3.1 Proposed facilities and improvements shall comply with pertinent rules and regulations of the SCAQMD, including Rule 401, Visible Emissions; Rule 402, Nuisance; Rule 403, Fugitive Dust; Rule 1113, Architectural Coatings; Regulation XIV, Toxics and Other Non-Criteria Pollutants; and Rule 1401, New Source Review, among others.

The following standard condition is included in Section 5.15, Transportation and Traffic, and would also reduce criteria pollutant emissions from vehicle use:

SC 5.15.3 *In accordance with the 2010 Draft Title 24 Green Building Standards, future recreational facilities in the WNDBRA shall provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one 2-bike capacity rack.*

The following standard condition is included in Section 5.16, Utilities and Service Systems, and would also reduce energy consumption and associated criteria pollutant emissions, when compared to the energy use by existing facilities at the WNDBRA:

SC 5.16.7 *Proposed facilities in the WNDBRA shall comply with all Title 24 Energy Efficiency Standards in effect at the time of application for building permits (Title 24). Title 24 covers the use of energy-efficient building standards, including ventilation, insulation, and construction, and the use of energy-saving appliances, conditioning systems, water heating, and lighting. Plans submitted for building permits shall include written notes demonstrating compliance with energy standards and shall be reviewed and approved by the Building and Safety Division of the County Department of Public Works prior to building permit issuance.*

Impact Analysis

AQMP Consistency

Threshold 5.3.1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

The two principal criteria for determining conformance to the AQMP are (1) whether a project will result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards and (2) whether a project will exceed the assumptions in the AQMP (SCAQMD 1993).

With respect to the first criterion, the analysis for Threshold 5.3.2 (see later discussion) demonstrates that the total long-term emissions from proposed facilities and improvements in the WNDBRA could exceed SCAQMD regional emissions thresholds and therefore would result in a long-term increase in pollutant emission that (1) could lead to an increase the frequency or severity of existing regional air quality violations; (2) could cause or contribute to new violations; or (3) could delay timely attainment of air quality standards. The exceedances cannot be mitigated to less than significant levels and will remain unavoidable.

With respect to the second criterion, the land use designations for the WNDBRA are primarily Open Space (in Los Angeles County and the Cities of Pico Rivera, Rosemead, and Whittier), except for the western half of the conservation pool (which is designated as Residential Agriculture in the City of Montebello) and the privately-owned parcel in the City of South El Monte (which is designated as Commercial). See Exhibit 5.9-1 in Section 5.9, Land Use and Planning.

The AQMP assumptions for mobile source emissions are based on assumed trip generation and trip distances, which are, in turn, based upon existing uses and general plans. It is assumed that the assumptions in the AQMP are consistent with the primarily Open Space designation of the site under applicable general plans. No facilities are proposed on the Commercial parcel in the City of South El Monte, and only invasive removal and native plant restoration are proposed in Montebello's Residential Agriculture parcel. The proposed MDPI does not propose any change in land use or development capacity that exceeds the allowable development in the applicable General Plans; therefore, the MDPI would not conflict with or exceed the assumptions in the AQMP.

However, with the potential for long-term, unavoidable increases in the frequency or severity of existing regional air quality violations, contributions to new violations or delays in the attainment of air quality standards, the MDPI would not be consistent with the AQMP. This impact would be significant and unavoidable.

Violation of Standards

Threshold 5.3.2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction Emissions

Proposed facilities and improvements under the MDPI would generate short-term construction emissions from the construction of individual projects and facilities proposed in the WNDBRA. Air pollutants would be emitted by off-road and on-road construction equipment and worker vehicles; fugitive dust would be generated during demolition and grading within individual construction sites. Construction activities could also emit pollutants during painting, surface coating, and asphalt paving operations.

Construction activities would occur in stages as each facility or improvement in the WNDBRA is undertaken, with potential overlap between stages. The first stage of construction would involve demolition and site clearing. This would be followed by grading and excavation. Below grade construction and utilities installation would begin immediately after the excavation phase is completed, and would be followed by building construction. Paving and architectural coating activities would occur during the building construction phase.

Construction of the proposed facilities and improvements would not occur all together, but would be constructed incrementally through time, as each project is sponsored and funded. Some of the proposed facilities and improvements in the WNDBRA would have relatively small disturbance areas and involve limited building or infrastructure construction that they are likely to have minor impacts on air quality. These include fitness routes, loop trails, entry signage, fishing areas, and water quality treatment at drainage outlets. However, the cumulative construction emissions from all facilities and improvements set forth in the MDPI are expected to exceed SCAQMD thresholds, as provided in Table 5.3-4 below.

TABLE 5.3-4
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants		
TACs[b]	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to Rule 402[a]	
Ambient Air Quality For Criteria Pollutants		
NO_2	1-hour average ≥ 0.18 ppm Annual average ≥ 0.03 ppm	
PM10	24-hour average ≥ 10.4 µg/m^3 (construction)[c] 24-hour average ≥ 2.5 µg/m^3 (operation) Annual average ≥ 1.0 µg/m^3	
PM2.5	24-hour average ≥ 10.4 µg/m^3 (construction)[c] 24-hour average ≥ 2.5 µg/m^3 (operation)	
Sulfate	24-hour average ≥ 1.0 µg/m^3	
CO	1-hour average ≥ 20.0 ppm (State) 8-hour average ≥ 9.0 ppm (State/federal)	

lbs/day: pounds per day; ppm: parts per million; µg/m^3: micrograms per cubic meter

[a] Rule 402 states that a project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals".

[b] Includes carcinogens and non-carcinogens

[c] Ambient air quality threshold based on SCAQMD Rule 403.

Source: SCAQMD 2009b.

Thus, construction-related emissions of criteria air pollutant and precursor emissions would contribute to existing or projected air quality violations in Los Angeles County and the SoCAB. This impact would be significant.

Compliance with SCAQMD Rules is required under Standard Condition (SC) 5.3.1, including Rule 403, Fugitive Dust, and Rule 1113, Architectural Coatings. Therefore, emissions reductions consistent with SCAQMD rules would occur. In addition, a number of mitigation measures are provided below to reduce construction emissions from proposed facilities and improvements in the WNDBRA.

Local Significance Thresholds

Absent project details to determine local pollutant concentrations, exceedance of SCAQMD's Local Significance Thresholds (LST) cannot be quantified with just the MDPI at this point in time. Due to the presence of sensitive receptors in and near the WNDBRA, it is assumed that emissions could exceed the thresholds at nearby receptors, including the residences and schools to the north and east and the users of athletic fields, court sports, and exercise areas in the WNDBRA.

Proposed facilities and improvements would be required to implement SCAQMD Rule 403, Fugitive Dust (SC 5.3.1), to reduce particulate emissions from construction activities. Mitigation Measures (MMs) 5.3.1 to 5.3.5 would also reduce pollutant emissions during construction that could affect adjacent receptors. To further reduce dust emissions to nearby receptors, MM 5.3.6 would be incorporated into individual projects, requiring a temporary six-foot-high barrier between excavation areas and sensitive receptors (such as the residences that are located near the proposed sites for the soccer field expansion in Area A and the amphitheater in Area B). However, the effectiveness of this barrier cannot be quantified until specific site locations and project designs are developed. Therefore, the local PM10 and PM2.5 impact would be significant and unavoidable for the short-term periods when large excavations would occur near sensitive receptors.

Operational Emissions

Proposed improvements under the MDPI (such as the Arundo Removal and Riparian Enhancement, Reintroduction of Native Species, and Water Quality Improvement Programs in Natural Areas; storm water BMPs; water quality treatment at drainage outlets on the Rio Hondo; entry signage; riparian restoration at islands at Legg Lake; Green Streets; and traffic calming measures) would only generate short-term construction emissions but would not generate long-term emissions. However, proposed facilities (e.g., skate park or court sports, expansion of existing soccer fields, natural area river parks, and river crossings along the Rio Hondo in Area A, amphitheater/special events area, playground, and loop trails in Area B, disc golf areas, mountain bike facility, archery range reconstruction in Area C, waterplay/splash park, welcome center, fitness stations, and additional fishing areas in Area D, performance pavilions or small event areas, group picnic area, and campground restoration in Area F) would attract a user population, and thus, would generate regional area- and mobile-source emissions from vehicle trips due to the use of these facilities and the increase in visitors to the WNDBRA. Based on the Traffic Study, the proposed facilities in the MDPI are estimated to generate a total of approximately 2,698 new weekday daily trips and approximately 2,875 weekend daily trips. It is projected that future visitation would range from 2.0 to 2.6 million users (similar to visitation estimates from 2006 to 2009), to as much as 7 percent above these estimates to reflect population growth.

While these facilities would not be constructed at one time and would be located at scattered locations in the WNDBRA, they would generate vehicle trips and require energy that would result in the emission of criteria air pollutants in the SoCAB. Some facilities (i.e., loop trails, river crossings, fitness stations, and fishing areas) are not expected to generate a substantial number of vehicle trips and associated emissions since they would be used in conjunction with other

facilities. However, all proposed facilities, when taken together, are expected to generate vehicles trips and pollutant emissions that would have the potential to add to existing air pollution levels in the project area and that may exceed the SCAQMD thresholds outlined in Table 5.3-4 above. While no project details are available, it is conservatively assumed that emissions from these facilities would exceed SCAQMD CEQA thresholds due to the potential for concurrent and maximum use of all facilities at one time. Due to existing pollutant levels in the County and the SoCAB, the pollutant emissions that would be generated by the proposed facilities could add to existing violations of O_3, NO_2, and PM levels in the SoCAB.

SC 5.15.3 requires the provision of bike racks with proposed recreational facilities to encourage bicycle use and reduce automobile use by area residents. In addition, PDF 5.3.1, Green Streets, would improve pedestrian and bicycle safety and would promote alternatives to vehicle use. Compliance with Title 24 energy standards (SC 5.16.7) in Section 5.16, Utilities and Service Systems, would also reduce energy use by individual facilities and the corresponding NOx emissions from area sources, when compared to the energy use by existing facilities at the WNDBRA. As discussed further in Section 5.17, Greenhouse Gas Emissions, the proposed structures in the WNDBRA would be built to incorporate sustainable design features to demonstrate compliance with the County's Green Building Program.

However, pollutant emissions from the MDPI are expected to exceed SCAQMD CEQA significance thresholds and impacts would be significant and unavoidable.

Cumulative Increase in Pollutants

Threshold 5.3.3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

The SoCAB is in nonattainment for O_3, NO_2, PM10, and PM2.5 and Los Angeles County is in nonattainment for Lead. As discussed above, implementation of the proposed facilities and improvements under the MDPI could result in short-term and long-term emissions of CO, PM10, PM2.5, and the O_3 precursors (VOC and NOx), which would contribute to existing clean air violations for these pollutants. Although there would be no non-vehicular Pb emissions that would result in a cumulative impact. Therefore, the proposed MDPI would have a significant cumulative air quality impact because of its contribution to regional pollutant concentrations for which the SoCAB is currently in nonattainment. Impacts would be significant and unavoidable.

Sensitive Receptors

Threshold 5.3.4: Would the project expose sensitive receptors to substantial pollutant concentrations?

Carbon Monoxide Hotspots

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. Due to the relatively low levels of CO concentrations in the South San Gabriel Valley area when compared to federal and State standards (see Table 5.3-2 above), the increase in CO from vehicle trips to and from the proposed facilities is not expected to result in CO levels that are three to four times the existing levels. Thus, CO levels would not exceed federal and State standards, and no CO hotspots are expected from implementation of the MDPI. Impacts would be less than significant, and no mitigation is required.

Criteria Pollutants from On-site Construction

As discussed above, there is a potential to expose nearby residents and other sensitive receptors to pollutant emissions during grading and excavation activities. These would be associated with amphitheater construction and soccer field expansion that could occur near existing residences and a school; Green Streets construction on roadways leading into the WNDBRA that have abutting schools, residences, and other sensitive receptors; and construction of traffic calming measures near schools. Users of the athletic fields, court sports, and exercise areas in the WNDBRA would also be exposed to pollutant emissions when construction activity occurs near these areas.

Mitigation measures have been provided to reduce these impacts on nearby residences and sensitive receptors (MMs 5.3.1 to 5.3.6). The exposure will also be short-term, incremental, and scattered as individual facilities and improvements are constructed in different locations in the WNDBRA over time. As discussed above, the effectiveness of this barrier cannot be quantified. Therefore, the local PM10 and PM2.5 impacts could be significant and unavoidable for the short-term periods when large excavations occur near sensitive receptors.

Toxic Air Contaminants

Construction-related Emissions

Construction activities would result in short-term, project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment used for site preparation (e.g., excavation, grading, and clearing); paving; building construction; application of architectural coatings; and other miscellaneous activities. CARB identified diesel PM as a TAC in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential non-cancer health impacts.

The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the proposed project.

Because the use of off-road, heavy-duty diesel equipment for construction activities at the WNDBRA would be temporary (short in duration when compared to 70 years); would be in combination with the highly dispersive properties of diesel PM; and further reductions in exhaust emissions from improved equipment are expected, project-generated, construction-related emissions of TACs would not expose sensitive receptors to substantial emissions of TACs. This impact would be less than significant; no mitigation is required.

Operational Emissions from Stationary Sources within the Project Area

There are no stationary sources of TACs in the recreational areas of the WNDBRA, although several uses in the WNDBRA generate TACs. These include the LACSD's Whittier Narrows Water Reclamation Plant (WNWRP), which has a diesel generator and a storage tank with vapor control ammonia; South El Monte High School, which has a diesel generator and several boilers; a cell tower on Lexington-Gallatin Road, which has a diesel generator; and the County

Department of Parks maintenance yard, which has a gasoline dispensing station (SCAQMD 2010). These uses are subject to permitting by the SCAQMD and would not be affected by the MDPI.

The MDPI does not propose any industrial use that would generate TACs; therefore, proposed facilities and improvements in the WNDBRA would not be sources of TACs. This impact would be less than significant, and no mitigation is required.

Operational Emissions from Mobile Sources within the Project Area

Diesel engine delivery trucks and transportation refrigeration units (TRUs) may come to the WNDBRA. Trucks equipped with TRUs typically result in higher TAC emissions because they are equipped with separate diesel generator sets to keep perishable food cold, in addition to the truck engine. CARB defines a screening level of 100 commercial trucks or 40 TRU-equipped trucks per day, which may occur at a large warehouse or distribution center (CARB 2005). The anticipated truck traffic to the proposed facilities and improvements under the MDPI would be intermittent and would not approach those volumes. Impacts would be less than significant, and no mitigation is required.

Exposure to Emissions from Off-Site Stationary Sources

In addition to uses in the WNDBRA that generate TACs, as listed above, off-site stationary sources of TACs include the oil wells to the west and the industrial uses to the northeast and east of the WNDBRA. Due to the short-term use of the WNDBRA for recreational purposes, exposure to stationary sources of TACs would also be short-term. Therefore, users of the proposed facilities and improvements in the WNDBRA would not be exposed to significant amounts of TACs, and impacts would be less than significant. No mitigation is required.

Exposure to Off-Site Emissions from Mobile Sources (Traffic and Rail)

The CARB guidance document, *Air Quality and Land Use Handbook: A Community Health Perspective*, includes the recommendation to avoid the siting of new sensitive land uses (e.g., residences, schools) within 500 feet of freeways, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The MDPI does not propose new residential development or schools near State Route (SR-60) and Interstate 605 (I-605) or on major roadways in the project area.

With respect to proximity to emissions from railroad sources, CARB recommends avoiding siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. The nearest railroad to the WNDBRA is the Union Pacific Railroad (UPRR) tracks to the southeast, parallel to I-605. There is no service and maintenance rail yard near the railroad segment near the WNDBRA, and this railroad is located approximately 1,200 feet from Bicentennial Park and the Sports Arena. Impacts would be less than significant, and no mitigation is required.

Objectionable Odors

Threshold 5.3.5: Would the project create objectionable odors affecting a substantial number of people?

The use of construction equipment and construction activities for the proposed facilities and improvements in the WNDBRA could generate odors from diesel exhaust and roofing, painting, and paving operations that may be noticeable to nearby residents, students, and employees, as

well as users of the WNDBRA. As these odors are typical with construction, they would not be unfamiliar or necessarily objectionable. The odors would be temporary and would dissipate rapidly from the source with an increase in distance. Therefore, the construction odor impacts would be short-term, would not likely be objectionable, and would be less than significant.

During the long-term, recreational uses and activities at the WNDBRA are not expected to generate odors, except for occasional barbecue odors from the picnic areas. These odors would be no different than any other barbecue use and would not be considered objectionable by a substantial number of people. Long-term odor impacts would be less than significant. No mitigation is required.

Field observation of nearby oilfield operations and the Whittier Narrows wastewater treatment plant did not detect objectionable odors. Future WNDBRA employees, park users, and other groups of people that would gather at the WNDBRA would not be exposed to objectionable odors. Therefore, impacts would be less than significant and no mitigation is required.

5.3.5 CUMULATIVE IMPACTS

Cumulative air quality impacts are considered in terms of project contributions to air pollution levels in the San Gabriel Valley, Los Angeles County, and the SoCAB.

AQMP Consistency

The proposed MDPI would not conflict with or change the land use assumptions used in the development of the AQMP. Thus, no cumulative impact related to AQMP consistency would occur at the plan level.

Construction-related (Short-Term) Cumulative Impacts

Construction activities in the WNDBRA would contribute to a cumulatively considerable net increase in regional and local emissions of VOC, NOx, PM10, and PM2.5. Also, there could be a direct long-term impact resulting from emissions of VOC, NOx, PM2.5, and PM10 that would exceed the SCAQMD CEQA significance thresholds. Implementation of the SCs and MMs would reduce emissions, but the proposed facilities and improvements set forth in the MDPI would still contribute to existing clean air standard violations. Thus, the MDPI would result in a cumulatively considerable increase in pollutant levels in the SoCAB when added to other construction emissions in the San Gabriel Valley and the region. No project-specific mitigation is feasible to reduce these emissions to less than the SCAQMD thresholds. Since impacts from the MDPI would be significant and unavoidable, the project's contribution to a cumulative impact would also be significant and unavoidable.

Operational (Long-Term) Cumulative Impacts

The proposed facilities and improvements set forth in the MDPI would result in significant and unavoidable long-term regional air quality impacts, as discussed above. Emissions attributable to the MDPI, along with emissions from other reasonably foreseeable future projects associated with growth and development in the San Gabriel Valley, would continue to contribute to long-term increases in pollutant emissions that would exacerbate existing and projected non-attainment conditions. Thus, the project would contribute to a significant and unavoidable cumulative air quality impact.

Sensitive Receptors

The proposed facilities and improvements set forth in the MDPI would not create CO hotspots or generate TACs that would affect sensitive receptors. Thus, the MDPI would have no cumulative impact on these issues. Since construction emissions could affect nearby sensitive receptors, the cumulative impacts of the MDPI on sensitive receptors in the San Gabriel Valley are also expected to be significant.

Objectionable Odors

The proposed facilities and improvements set forth in the MDPI would not create objectionable odors or expose users to objectionable odors. Thus, the MDPI would not contribute to cumulative odor impacts.

5.3.6 MITIGATION PROGRAM

To reduce or avoid significant adverse impacts related to air quality, the following mitigation measures are required, but do not supersede SCAQMD rules and other existing regulations:

MM 5.3.1 Construction documents shall specify that during construction, construction contractors shall implement the following measures or provide information and data that demonstrates that implementation would not be feasible prior to issuance of a grading permit:

a. Electricity shall come from power poles rather than diesel- or gasoline-fueled generators, compressors, or similar equipment;

b. Construction parking shall be configured to minimize traffic interference;

c. Construction trucks shall be routed away from congested streets and sensitive receptors;

d. Construction activities that affect traffic flow on the arterial system shall be scheduled to off-peak hours to the extent practicable;

e. Temporary traffic controls, such as a flag person(s), shall be provided where necessary to maintain smooth traffic flow; and

f. Dedicated turn lanes for movement of construction equipment on- and off-site and signal synchronization shall be provided as necessary to maintain smooth traffic flow.

MM 5.3.2 Construction documents shall specify that during construction, construction contractors shall implement the following measures:

a. All construction equipment shall be tuned and maintained in accordance with the manufacturer's specifications;

b. Diesel truck idling time shall be five minutes or less, both on- and off-site; and

c. Work crews shall shut off diesel equipment when not in use.

MM 5.3.3 Construction documents shall specify that construction contractors shall support and encourage ridesharing and transit incentives for the construction crews.

MM 5.3.4 Construction documents shall specify that during construction, construction contractors shall implement the following measures:

a. The contractor shall suspend grading operations when wind gusts exceed 15 miles per hour;

b. The contractor shall take measures (such as additional watering or the application of chemical suppressants) to stabilize disturbed areas and stockpiles prior to non-work days if windy conditions are forecasted for a weekend, holiday, or other day when site work is not planned.

c. The contractor shall re-apply water, as necessary, during grading and earthmoving to ensure that visible emissions do not extend to residences or schools.

MM 5.3.5 Construction documents shall specify that during construction, construction contractors shall sweep paved roads within and adjacent to the project site if visible soil materials are carried to the streets. Street sweepers or roadway washing trucks shall comply with SCAQMD Rule 1186 and shall use reclaimed water, if available.

MM 5.3.6 Prior to grading activities involving more than 10 acres or excavating more than 500 cubic yards per day the contractor shall erect a dust control barrier adjacent to the excavation site when there are residential receptors within 250 feet of the excavation. The barrier shall be solid, thereby preventing dust transmission through the barrier, and at least six feet tall. Where feasible, openings in the barrier to allow equipment access shall be located on the side of the excavation furthest from sensitive receptors.

5.3.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Even with implementation of PDF 5.3.1, the SCs and MMs above, short-term construction, and long-term operational emissions from the proposed facilities and improvements set forth by the MDPI are expected to result in significant adverse impacts due to inconsistency with the AQMP and contribution to existing violations of clean air standards for O_3, NO_2, PM10, and PM2.5 in the SoCAB. Impacts from the MDPI would be significant and unavoidable, and would contribute to cumulative air quality impacts in the SoCAB.

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