# LAGUNA NIGUEL TO SAN JUAN CAPISTRANO PASSING SIDING PROJECT

# AIR QUALITY

## DRAFT TECHNICAL REPORT

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# Table of Contents



# Figures



# Tables

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# 1 INTRODUCTION

This technical report presents the results of the air quality impact assessment performed for the Laguna Niguel to San Juan Capistrano Passing Siding Project in Orange County, California.

This report provides a description of the proposed project, an identification of air pollutants associated with motor vehicle exhaust, a review of applicable standards and regulations, a summary of existing air quality monitored data representative of ambient conditions in the project study area, and an evaluation of estimated project-related air quality effects.

The LOSSAN rail corridor serves Metrolink commuter trains, Amtrak intercity trains, and BNSF freight trains and is identified as the second most heavily traveled intercity passenger rail corridor in the nation. The segment of the corridor north of the project between Fullerton and Laguna Niguel is a double-track main-line. A transition to single track occurs just south of the Laguna Niguel/Mission Viejo (LNMV) Metrolink station and the single track continues for most of the remaining distance to San Diego. This single-track segment limits the reliability of overall train operations in the area and slows the more intense commuter operation to the north, since many of the trains terminate at the LNMV Station. The potential for service interruption increases when trains become delayed in San Diego and south Orange County and are caused to arrive/depart outside their assigned or usual time slots. The passing siding project would reduce existing congestion at the LNMV Metrolink Station, thereby providing more reliable corridor operations and fewer delays. The project would not affect or be affected by trains already planned for Metrolink, Amtrak, and BNSF service. The project also would not affect the number or frequency of trains operating along the LOSSAN corridor.

The project is currently funded with the Public Transportation Modernization, Improvement, and Service Enhancement Account Program (PTMISEA) created by Proposition 1B of the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006.

The principal objective of the project is to assist in facilitating a faster, safer and more reliable passenger rail system for Amtrak and Metrolink operations. The proposed project would provide the necessary flexibility to allow trains to pass through the City of San Juan Capistrano more quickly by reducing the amount of time trains may “dwell” on either end of the existing single track infrastructure.

The proposed project would enhance the operational efficiency of passenger service within the rail corridor, which in turn allows for improvements to the speed and reliability of the passenger rail system. The goals and solutions outlined in the 2006 OCTA Long Range Transportation Plan (LRTP) support the objectives of this project within the LOSSAN corridor.

The LRTP highlights improved mobility as one of its primary objectives. To accomplish this goal, the LRTP identifies the expansion of Metrolink service as a solution to provide a fast, high frequency and high capacity transit backbone within Orange County. The proposed project would help to meet the mobility goals of the LRTP by providing better operations through allowing existing train service within the corridor to pass more quickly and consistently through the San Juan Capistrano station.

# 2 PROJECT DESCRIPTION

The Orange County Transportation Authority (OCTA), in cooperation with Metrolink (operated by the Southern California Regional Rail Authority), the City of Laguna Niguel, and the City of San Juan Capistrano, proposes the addition of approximately 1.8 miles of new passing siding railroad track adjacent to the existing main track between milepost (MP) 193.9 in the City of San Juan Capistrano (just south of the Laguna Niguel/Mission Viejo Metrolink Station) and MP 195.7 in the City of San Juan

Capistrano (approximately 500 feet north of Trabuco Creek). A portion of the project from approximately MP 194.0 to MP 194.2 passes through the Cith of Laguna Niguel.

The project consists of the following features:

- Construct 1.8 miles of new passing siding railroad track
- Relocation of an existing spur track currently south of the Laguna Niguel/Mission Viejo Metrolink Station with a new spur track within the City of San Juan Capistrano at around MP 194.6
- Construction of new retaining walls
- Relocation of existing power poles, fiber optic cables, water and sewer lines
- Extension of existing casings for gas, water, and sewer lines
- Culvert extensions and other drainage refinements
- Addition of a railroad bridge or box culvert at MP 194.6
- Asphalt paving adjacent to Camino Capistrano to accommodate parking for use by railroad at MP 194.6
- Reprofiling of approximately 600 feet of Camino Capistrano adjacent to Rancho Capistrano in order to improve grades

The new passing siding and switches would be built on a bed of ballast approximately 13 to 15 feet wide and 12 to 14 inches above existing grade, occupying about 3.2 acres within the existing right-of-way.

Construction of the proposed project would occur over a period of 24 months and be confined to the area within the existing right-of-way with the exception of the asphalt paving for parking, which would be located east of the existing right-of-way and south of the crossing at Rancho Capistrano and the reprofiling of approximately 600 feet of Camino Capistrano adjacent to Rancho Capistrano in order to improve grades. Staging areas for personal vehicles, construction equipment and supplies would be established by the contractor. Train schedules would be maintained during construction.

## 2.1 PROJECT LOCATION

The project is located in the urban Orange County cities of Laguna Niguel and San Juan Capistrano within existing Southern California Regional Rail Authority (SCRRA) right-of-way along Interstate 5 (I-5) and Camino Capistrano. The new passing siding track would run from south of the LNMV Station at the end of the existing double track and terminate north of the Trabuco Creek crossing. The project location is shown in Figure 1, and the project study area is shown in Figure 2. As shown in Figure 2, Oso Creek runs parallel to the project alignment, and Trabuco Creek crosses under the existing tracks approximately 500 feet south of the project. Regional access to the LNMV station and San Juan Capistrano station is provided by I-5 and State Route 73 (SR-73).

Adjacent to the proposed project in the City of Laguna Niguel, land use designations are primarily hospitality commercial and open space, with automotive commercial uses near the Laguna Niguel-San Juan Capistrano city boundary. Oso Creek is designated as general open space. In the City of San Juan Capistrano, adjacent land use designations are community-park, general open space, medium low density, planned community, and special study. This portion of the project is also adjacent to areas zoned agricultural-business, planned community, general open space, and single-family residential. South of the project, Trabuco Creek is designated as general open space.

**Figure 1: Project Location**

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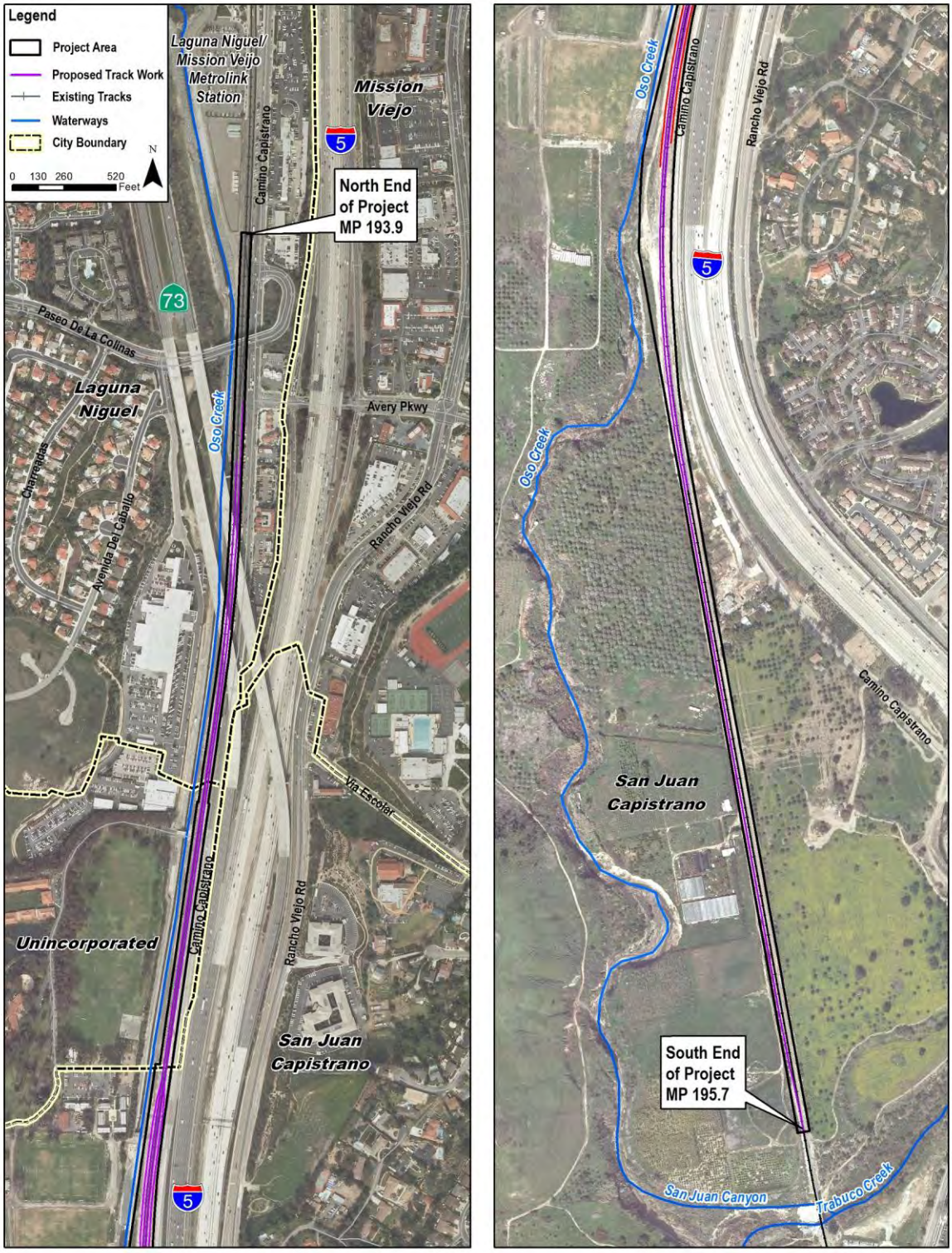
**Figure 2: Project Study Area**



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# 3 REGULATORY SETTING

"Air Pollution" is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, reducing the productivity or vigor of crops or natural vegetation, and/or reducing human or animal health. Air quality is a term used to describe the amount of air pollution the public is exposed to.

Air quality in the United States is governed by the Federal Clean Air Act (CAA) and is administered by the U.S. Environmental Protection Agency (EPA). In addition to being subject to the requirements of the CAA, air quality in California is also governed under the California Clean Air Act (CCAA).

The CCAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain State Ambient Air Quality Standards. The California Air Resources Board (CARB) administers the CCAA statewide. A brief description of these and other involved agencies are described below, as is the CAA.

## 3.1 U.S. ENVIRONMENTAL PROTECTION AGENCY

The EPA is responsible for establishing the National Ambient Air Quality Standards and enforcing the Clean Air Act, and regulates emission sources under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The EPA also has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by CARB. For additional information about the EPA, the reader can contact its general internet address found at www.epa.gov. Additional information on the activities of EPA Region IX, which includes California, can be found at www.epa.gov/region9.

## 3.2 CALIFORNIA AIR RESOURCES BOARD

CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the CCAA, meeting state requirements of the CAA, and establishing State Ambient Air Quality Standards. It is also responsible for setting emission standards for vehicles sold in California and for other emission sources such as consumer products and certain off-road equipment. CARB also established passenger-vehicle fuel specifications. CARB also oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. The CCAA is administered by CARB at the state level and by the Air Quality Management Districts at the regional level.

## 3.3 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The South Coast Air Quality Management District (SCAQMD) is the air-pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties. The SCAQMD was created to protect the public from the harmful effects of air pollution, achieve and maintain air quality standards, foster community involvement, and develop and implement cost-effective programs meeting state and federal mandates, considering environmental and economic impacts.

Specifically, the SCAQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Programs developed include air quality rules and regulations that regulate stationary source emissions, including area sources and point sources and certain mobile source emissions. The SCAQMD is also responsible for establishing permitting requirements for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases and, therefore, are

consistent with the region's air quality goals. The SCAQMD enforces air quality rules and regulations through a variety of means, including inspections, educational or training programs, or fines, when necessary.

## 3.4 SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

The Southern California Association of Governments (SCAG) is the metropolitan planning organization (MPO) for the study area. SCAG is the largest MPO in the United States, functioning as the MPO for Los Angeles County, Orange County, San Bernardino County, Riverside County, Ventura County and Imperial County. SCAG is mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management and air quality. SCAG is responsible for the development of the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP). The RTP provides a vision for transportation in the SCAG region using an assessment of growth and economic trends over 25 years. The RTIP is a capital listing of all transportation projects proposed over a six-year period. The current RTIP evaluates projects in fiscal years 2012/2013 to 2017/2018. The RTIP is developed to implement the programs and projects in the RTP.

## 3.5 CLEAN AIR ACT AMENDMENTS OF 1990

The Clean Air Act Amendments of 1990 (CAAA) and the Final Conformity Rule (40 CFR Parts 51 and 93) direct the EPA to implement environmental policies and regulations that will ensure acceptable levels of air quality.

The Clean Air Act and the Final Conformity Rule affect proposed transportation projects such as the Gold Line Project. According to Title I, Section 101, Paragraph F of the amendments:

> "No federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program, or project has been found to conform to any applicable State Implementation Plan (SIP) in effect under this act."

The Final Transportation Conformity Rule defines conformity as follows:

Conformity to an implementations plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards; and that such activities will not:

- Cause or contribute to any new violation of any NAAQS in any area;
- Increase the frequency or severity of any existing violation of any NAAQS in any area; or
- Delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in any area.

If federal approval or funding for the proposed project would be required, compliance with the Conformity Rule would have to be demonstrated.

## 3.6 NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

As required by the Clean Air Act, National Ambient Air Quality Standards have been established for six major air pollutants. These pollutants, known as criteria pollutants, are carbon monoxide; nitrogen dioxide; ozone; particulate matter ($PM_{10}$ and $PM_{2.5}$); sulfur dioxide; and lead.

**Table 1: State and Federal Ambient Air Quality Standards**

## Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards [1] | | National Standards [2] | | |
|---|---|---|---|---|---|---|
| | | Concentration [3] | Method [4] | Primary [3,5] | Secondary [3,6] | Method [7] |
| **Ozone ($O_3$)** | 1 Hour | 0.09 ppm (180 µg/m$^3$) | Ultraviolet Photometry | — | Same as Primary Standard | Ultraviolet Photometry |
| | 8 Hour | 0.070 ppm (137 µg/m$^3$) | | 0.075 ppm (147 µg/m$^3$) | | |
| **Respirable Particulate Matter (PM10)** | 24 Hour | 50 µg/m$^3$ | Gravimetric or Beta Attenuation | 150 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 20 µg/m$^3$ | | — | | |
| **Fine Particulate Matter (PM2.5)** | 24 Hour | — | — | 35 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 12 µg/m$^3$ | Gravimetric or Beta Attenuation | 15 µg/m$^3$ | | |
| **Carbon Monoxide (CO)** | 1 Hour | 20 ppm (23 mg/m$^3$) | Non-Dispersive Infrared Photometry (NDIR) | 35 ppm (40 mg/m$^3$) | — | Non-Dispersive Infrared Photometry (NDIR) |
| | 8 Hour | 9.0 ppm (10 mg/m$^3$) | | 9 ppm (10 mg/m$^3$) | — | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m$^3$) | | — | — | |
| **Nitrogen Dioxide ($NO_2$)[8]** | 1 Hour | 0.18 ppm (339 µg/m$^3$) | Gas Phase Chemiluminescence | 100 ppb (188 µg/m$^3$) | — | Gas Phase Chemiluminescence |
| | Annual Arithmetic Mean | 0.030 ppm (57 µg/m3) | | 53 ppb (100 µg/m$^3$) | Same as Primary Standard | |
| **Sulfur Dioxide ($SO_2$)[9]** | 1 Hour | 0.25 ppm (655 µg/m$^3$) | Ultraviolet Fluorescence | 75 ppb (196 µg/m$^3$) | — | Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method) |
| | 3 Hour | — | | — | 0.5 ppm (1300 µg/m$^3$) | |
| | 24 Hour | 0.04 ppm (105 µg/m$^3$) | | 0.14 ppm (for certain areas)[9] | — | |
| | Annual Arithmetic Mean | — | | 0.030 ppm (for certain areas)[9] | — | |
| **Lead[10,11]** | 30 Day Average | 1.5 µg/m$^3$ | Atomic Absorption | — | — | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | — | | 1.5 µg/m$^3$ (for certain areas)[11] | Same as Primary Standard | |
| | Rolling 3-Month Average | — | | 0.15 µg/m$^3$ | | |
| **Visibility Reducing Particles[12]** | 8 Hour | See footnote 12 | Beta Attenuation and Transmittance through Filter Tape | **No National Standards** | | |
| **Sulfates** | 24 Hour | 25 µg/m$^3$ | Ion Chromatography | | | |
| **Hydrogen Sulfide** | 1 Hour | 0.03 ppm (42 µg/m$^3$) | Ultraviolet Fluorescence | | | |
| **Vinyl Chloride[10]** | 24 Hour | 0.01 ppm (26 µg/m$^3$) | Gas Chromatography | | | |

**See footnotes on next page …**

**For more information please call ARB-PIO at (916) 322-2990** **California Air Resources Board (2/7/12)**

## Table 1: State and Federal Ambient Air Quality Standards (Cont'd)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three 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 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration 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.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

9. On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

   Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

10. The ARB 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.

11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

**For more information please call ARB-PIO at (916) 322-2990** **California Air Resources Board (2/7/12)**

The current $PM_{2.5}$ standards were presented in the Federal Register on July 30, 2004, and became effective on that date. New $PM_{2.5}$ standards were adopted by EPA on October 17, 2006, and went into effect on December 17, 2006. They consist of a stricter 24-hour standard for $PM_{2.5}$ (35 $\mu g/m^3$) and no change to the annual $PM_{2.5}$ standard. In addition, the EPA has not as yet developed a methodology for estimating annual $PM_{2.5}$ impacts, which should be evaluated on a "neighborhood," and not on a discrete receptor, basis. For $PM_{10,}$ the 24-hour standard remained the same, and the annual standard was dropped. EPA will re-designate non-attainment areas for $PM_{2.5}$ based on the new 24-hour $PM_{2.5}$ standard. Compliance with the recently adopted $PM_{2.5}$ 24-hour standard is not yet required.

The State of California has also established ambient air quality standards, known as the California Ambient Air Quality Standards (CAAQS). These standards are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Both State and Federal standards are summarized in Table 1. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

### 3.6.1 Criteria Pollutants and Effects

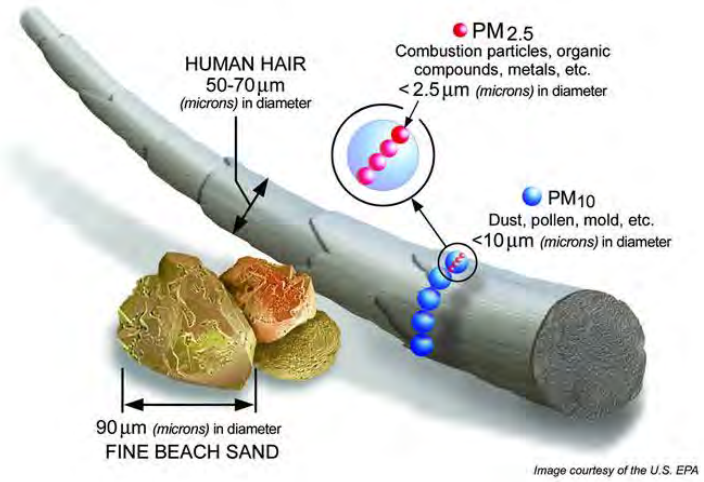
Pollutants that have established national standards are referred to as "criteria pollutants". The sources of these pollutants, their effects on human health and the nation's welfare, and their final deposition in the atmosphere vary considerably. A brief description of each pollutant is given below.

**Ozone**. $O_3$, a colorless toxic gas, enters the blood stream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. $O_3$ also damages vegetation by inhibiting their growth. Although $O_3$ is not directly emitted, it forms in the atmosphere through a chemical reaction between reactive organic gases (ROG) and nitrogen oxides ($NO_x$), which are emitted from industrial sources and from automobiles. Substantial $O_3$ formations generally require a stable atmosphere with strong sunlight.

**Particulate Matter**. Particulate pollution is composed of solid particles or liquid droplets that are small enough to remain suspended in the air. In general, particulate pollution can include dust, soot, and smoke; these can be irritating but usually are not poisonous. Particulate pollution also can include bits of solid or liquid substances that can be highly toxic. Of particular concern are those particles that are smaller than, or equal to, 10 microns ($PM_{10}$) and 2.5 microns ($PM_{2.5}$) in size.

**$PM_{10}$.** $PM_{10}$ refers to particulate matter less than 10 microns in diameter, about one/seventh the thickness of a human hair (Figure 3). Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when industry and gases emitted from motor vehicles undergo chemical reactions in the atmosphere. Major sources of $PM_{10}$ include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Suspended particulates produce haze and reduce visibility. Additionally, $PM_{10}$ poses a greater health risk than larger-sized particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{10}$ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections.

**Figure 3: Relative Particulate Matter Size**




Data collected through numerous nationwide studies indicates that most of the $PM_{10}$ comes from:

- Fugitive dust
- Wind erosion
- Agricultural and forestry sources

**$PM_{2.5}$.** A small portion of particulate matter is the product of fuel combustion processes. In the case of $PM_{2.5}$, the combustion of fossil fuels accounts for a significant portion of this pollutant. The main health effect of airborne particulate matter is on the respiratory system. $PM_{2.5}$ refers to particulates that are 2.5 microns or less in diameter, roughly 1/28th the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds. Like $PM_{10}$, $PM_{2.5}$ can penetrate the human respiratory system's natural defenses and damage the respiratory tract when inhaled. Whereas, particles 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues.

**Carbon Monoxide.** CO, a colorless gas, interferes with the transfer of oxygen to the brain. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. Prolonged exposure to high levels of CO can cause headaches, drowsiness, loss of equilibrium, or heart disease. CO concentrations can vary greatly over relatively short distances. Relatively high concentrations of CO are typically found near congested intersections, along heavily used roadways carrying slow-moving traffic, and in areas where atmospheric dispersion is inhibited by urban “street canyon” conditions. Consequently, CO concentrations must be predicted on a localized, or microscale, basis.

**Nitrogen Dioxide**. $NO_2$, a brownish gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Like $O_3$, $NO_2$ is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and $NO_2$ are collectively referred to as nitrogen oxides ($NO_x$) and are major contributors to ozone formation. $NO_2$ also contributes to the formation of $PM_{10}$, small liquid and solid particles that are less than 10 microns in diameter (see discussion of $PM_{10}$ below). At atmospheric concentration, $NO_2$ is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. There is some indication of a relationship between $NO_2$ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm).

**Lead.** Pb is a stable element that persists and accumulates both in the environment and in animals. Its principal effects in humans are on the blood-forming, nervous, and renal systems. Lead levels in the urban environment from mobile sources have significantly decreased due to the federally mandated switch to lead-free gasoline.

**Sulfur Dioxide.** $SO_2$ is a product of high-sulfur fuel combustion. The main sources of $SO_2$ are coal and oil used in power stations, industry and for domestic heating. Industrial chemical manufacturing is another source of $SO_2$. $SO_2$ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. $SO_2$ can also yellow plant leaves and erode iron and steel.

## 3.7 TOXIC AND NON CRITERIA POLLUTANTS AND EFFECTS

A toxic air contaminant (TAC) is defined by California law as an air pollutant that "may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." EPA uses the term *hazardous air pollutant* (HAP) in a similar sense. Controlling air toxic emissions became a national priority with the passage of the CAA, whereby Congress mandated that EPA regulate 188 air toxics, also known as HAPs. TACs can be emitted from stationary and mobile sources.

### 3.7.1 Asbestos

Asbestos has also become a pollutant of concern in regard to demolition and soil disturbance. Asbestos minerals occur in rock and soil as the result of natural geologic processes, often in veins near earthquake faults in the coastal ranges and the foothills of the Sierra Nevada Mountains and other areas of California. Naturally occurring asbestos (NOA) takes the form of long, thin, flexible, separable fibers. Natural weathering or human disturbance can break NOA down to microscopic fibers, easily suspended in air. When inhaled, these thin fibers irritate tissues and resist the body's natural defenses. Asbestos is a known human carcinogen. It causes cancers of the lung and the lining of internal organs, as well as asbestosis and pleural disease that inhibit lung function. The EPA is working to address concerns about potential effects of NOA in a number of areas in California.

### 3.7.2 Mobile Source Air Toxics

In addition to the NAAQS criteria pollutants, EPA regulates MSATs. In February 2007, EPA finalized a rule (Control of Hazardous Air Pollutants from Mobile Sources) to reduce hazardous air pollutant (HAP) emissions from mobile sources. The rule limits the benzene content of gasoline and reduces toxic emissions from passenger vehicles and gas cans. EPA estimates that in 2030 this rule would reduce total emissions of MSATs by 330,000 tons and volatile organic compound (VOC) emissions (precursors to $O_3$ and PM2.5) by more than 1 million tons. The latest revision to this rule occurred in October of 2008. This revision added additional specific benzene control technologies that the previous rule did not include.

By 2010, EPA's existing programs will reduce MSATs by more than 1 million tons from 1999 levels (EPA 2011). In addition to controlling pollutants, such as hydrocarbons, PM, and nitrogen oxides (NOx), recent EPA regulations controlling emissions from highway vehicles and nonroad equipment will result in large reductions in toxic emissions to the air. Furthermore, EPA has programs under development that would provide additional benefits (further controls) for small nonroad gasoline engines, diesel locomotives, and marine engines. A variety of EPA programs reduce risk in communities. These programs include Clean School Bus USA, the Voluntary Diesel Retrofit Program, Best Workplaces for Commuters, and the National Clean Diesel Campaign.

CARB has adopted regulations to reduce emissions from both on-road and off-road heavy duty diesel vehicles (e.g., equipment used in construction). These regulations, known as Airborne Toxic Control Measures, reduce the idling of school buses and other commercial vehicles, control DPM, and limit the emissions of ocean-going vessels in California waters (CARB 2009b). The regulations also include various measures to control emissions of air toxics from stationary sources. The California Toxics Inventory (CTI), developed by speciating CARB estimates of total organic gas (TOG) and PM, provides emissions estimates by stationary, area-wide, on-road mobile, off-road mobile, and natural sources (CARB 2011a).

No federal or California ambient standards exist for MSATs. Specifically, EPA has not established NAAQS or provided standards for hazardous air pollutants.

# 4 AMBIENT AIR QUALITY IN THE STUDY AREA

The nature of the surrounding atmosphere is an important element in assessing the ambient air quality of an area. Air pollutant levels in the South Coast Air Basin are measured at a series of monitoring stations maintained by the SCAQMD and the CARB.

## 4.1 LOCAL CLIMATE

The climate of Orange County is normally pleasant and mild through the year. The Pacific Ocean is the primary moderating influence. The coastal ranges east of the project area act as a buffer against extremes of summer heat and winter cold that occur in desert and plateau regions further east. A variable balance between mild sea breezes, and either hot or cold winds from the interior, results in some variety in weather conditions, but temperature and humidity are usually well within the limits of human comfort. An important, and somewhat unusual, aspect of the climate of Orange County is the pronounced difference in temperature, humidity, cloudiness, fog, rain, and sunshine over fairly short distances.

These differences are closely related to the distance from, and elevation above, the Pacific Ocean. Both high and low temperatures become more extreme and the average relative humidity becomes lower as one goes inland and up foothill slopes. Relative humidity is frequently high near the coast, but may be quite low along the foothills. During periods of high temperatures, the relative humidity is usually below normal so that discomfort is rare, except for infrequent periods when high temperatures and high humidity occur together.

Like other Pacific Coast areas, most rainfall comes during the winter, with nearly 85 percent occurring from November through March, while summers are practically rainless. As in many semi-arid regions, there is a marked variability in monthly and seasonal totals. Precipitation generally increases with distance from the ocean, from a yearly total of around 12 inches in coastal sections to over 20 inches in the foothill areas. Destructive flash floods occasionally develop in and below some mountain canyons. Snow is often visible on nearby mountains in the winter, but is extremely rare in the coastal basin. Thunderstorms are infrequent.

Prevailing winds are from the west during the spring, summer, and early autumn, with northeasterly wind predominating the remainder of the year. At times, the lack of air movement, combined with a frequent and persistent temperature inversion, is associated with concentrations of air pollution in the basin and some adjacent areas. In fall, winter, and early spring months, occasional Santa Ana winds come from the northeast over ridges and through passes in the coastal mountains. These Santa Ana winds may pick up considerable amounts of dust and reach speeds of 35 to 50 mph in eastern sections of the county, with higher speeds in outlying areas to the east.

Sunshine, fog and clouds depend a great deal on topography and distance from the ocean. Low clouds are common at night and in the morning along the coast during spring and summer, but form later and clear earlier near the foothills so that annual cloudiness and fog frequencies are greatest near the ocean, and sunshine totals are highest in the inland portions of the county. The sun shines about 75 percent of daytime hours. Light fog may accompany the usual night and morning low clouds, but dense fog is more likely to occur during the night and early morning hours of the winter months.

## 4.2 MONITORED AIR QUALITY

The South Coast air pollutant levels are measured at monitoring stations that the California Air Resources Board (CARB) maintains. The monitoring station nearest the project study area is located in Mission Viejo at 26081 Via Pera. Three years of monitored data for this location are summarized in Table 2 to illustrate the study area's general air quality trends.

**Table 2: Monitored Ambient Air Quality Levels 2009-2011**

| Air Pollutant | Standard/ Exceedance** | Mission Viejo 26081 Via Pera | | |
|---|---|---|---|---|
| | | 2009 | 2010 | 2011 |
| Carbon Monoxide (CO) | Year Coverage* | 97% | 98% | 98% |
| | Max. 1-hour Concentration (ppm) | 1.5 | 1.2 | 1.4 |
| | Max. 8-hour Concentration (ppm) | 1.0 | 0.9 | 0.95 |
| | # Days>Federal 1-hour Std. of >35 ppm | 0 | 0 | 0 |
| | # Days>Federal 8-hour Std. of >9 ppm | 0 | 0 | 0 |
| | # Days>California 1-hour Std. of >20 ppm | 0 | 0 | 0 |
| | # Days>California 8-hour Std. of >9.0 ppm | 0 | 0 | 0 |
| Ozone ($O_3$) | Year Coverage* | 97% | 94% | 98% |
| | Max. 1-hour Concentration (ppm) | 0.121 | 0..117 | 0.094 |
| | Max. 8-hour Concentration (ppm) | 0.095 | 0.83 | 0.083 |
| | # Days>California 8-hour Std. of >0.070 ppm | 14 | 2 | 5 |
| | # Days>Federal 8-hour Std. Of >0.075 ppm | 10 | 2 | 2 |
| | # Days>California 1-hour Std. Of >0.09 ppm | 7 | 2 | 0 |
| Nitrogen Dioxide ($NO_2$) | Year Coverage* | NM | NM | NM |
| | Max. 1-hour Concentration (ppm) | NM | NM | NM |
| | Annual Arithmetic Mean (ppm) | NM | NM | NM |
| | % AAM Exceeded (Federal) | NM | NM | NM |
| | # Days>California 1-hour Std. of >0.18 ppm | NM | NM | NM |
| Sulfur Dioxide ($SO_2$) | Year Coverage* | NM | NM | NM |
| | Max. 24-hour Concentration (ppm) | NM | NM | NM |
| | Annual Arithmetic Mean (ppm) | NM | NM | NM |
| | # Days>Federal 24-hour Std. of >0.14 ppm | NM | NM | NM |
| | # Days>California 24-hour Std. of >0.04 ppm | NM | NM | NM |
| Suspended Particulates ($PM_{10}$) | Year Coverage* | 99% | 95% | 100% |
| | Max. 24-hour Concentration (µg/m$^3$) | 554 | 44 | 37 |
| | #Days>Fed. 24-hour Std. of>150 µg/m$^3$ | 0 | 0 | 0 |
| | #Days>California 24-hour Std. of>50 µg/m$^3$ | 1 | 0 | 0 |
| | National Annual Average (µg/m$^3$) | 23.6 | 18.1 | 19.2 |
| Suspended Particulates ($PM_{2.5}$) | Year Coverage* | 95% | 94% | 86% |
| | Max. 24-hour Concentration (µg/m$^3$) | 39.2 | 19.9 | 33.4 |
| | State Annual Average (µg/m$^3$) | 9.5 | NA | NA |
| | #Days>Fed. 24-hour Std. of>35 µg/m$^3$ | 1 | 0 | 0 |
| | National Annual Average (µg/m$^3$) | 9.4 | 7.9 | 8.5 |
| Lead | Maximum Monthly Concentration (µg/m$^3$) | NM | NM | NM |
| | # Months Exceeding Federal Std. | NM | NM | NM |
| | # Months Exceeding State Std. | NM | NM | NM |
| Sulfates | Max. 24-hour Concentration (µg/m$^3$) | NM | NM | NM |
| | #Samples>California 24-hour Std.>=25 µg/m$^3$ | NM | NM | NM |

*Source: California Air Resources Board, 2012 (http://www.arb.ca.gov/adam/welcome.html)*

*US EPA for CO 1hr data only, 2012 (http://www.epa.gov/airdata/ad_rep_mon.html)*

* Year Coverage indicates how extensive monitoring was during the time of year when high pollutant concentrations were expected.

** The number of days above the standard is not necessarily the number of violations of the standard for the year.

NM: Pollutant not monitored

NA: Not available

## 4.3 ATTAINMENT STATUS OF THE STUDY AREA

Section 107 of the 1977 Clean Air Act Amendment requires that the EPA publish a list of all geographic areas in compliance with the NAAQS, plus those not attaining the NAAQS. Areas not in NAAQS compliance are deemed non-attainment areas. Areas that have insufficient data to make a determination are deemed unclassified, and are treated as being attainment areas until proven otherwise. An area's designation is based on the data collected by the state monitoring network on a pollutant-by-pollutant basis.

The project area is located in Orange County. As shown in Table 3, the EPA has classified Orange County as a severe nonattainment area for ozone, a serious nonattainment area for $PM_{10}$, and a nonattainment area for $PM_{2.5}$. Orange County is listed as a maintenance area for carbon monoxide, as it was previously a nonattainment area. This analysis focuses on these criteria pollutant(s).

**Table 3: Project Area Attainment Status**

| Pollutant | Federal Attainment Status |
|---|---|
| Ozone ($O_3$) | Nonattainment |
| Nitrogen Dioxide ($NO_2$) | Attainment |
| Carbon Monoxide (CO) | Maintenance |
| Particulate Matter ($PM_{10}$) | Nonattainment |
| Particulate Matter ($PM_{2.5}$) | Nonattainment |
| All others | Attainment/Unclassified |

*Source: EPA, 2012*

## 4.4 CONFORMANCE WITH AIR QUALITY STANDARDS

Pursuant to section 6005 of SAFETEA-LU, under the Surface Transportation Project Delivery Pilot Program, Caltrans assumed all of FHWA's responsibilities under the National Environmental Policy Act (NEPA) for the State Highway System and local street and road projects in California. As of October 1, 2012, Section 6005 of SAFETEA-LU is now codified as 23 USC 327, as amended by the surface transportation reauthorization act, Moving Ahead for Progress in the 21st Century Act (MAP-21). Section 1313 of MAP-21 amends 23 USC making the Pilot Program permanent as the Surface Transportation Project Delivery Program. Proposed transportation projects must be derived from a long-range transportation plan (LRP) or RTP that conforms with the state air quality plans as outlined in the SIP. The SIP sets forth the state's strategies for achieving air quality standards. Projects must also be included in a Transportation Improvement Program (TIP) that conforms with the SIP, and localized impacts from proposed projects must conform to state air quality plans in non-attainment and maintenance areas.

SCAG, as the federally designated MPO for most of Southern California, is required to adopt and periodically update a long-range transportation plan and develop an RTP and TIP for Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial Counties.

This project is classified as exempt from conformity per 40 CFR 90.126 since it is a rehabilitation/reconstruction of track in existing rights-of-way. Furthermore, this project is listed separately on the Regional Transportation Improvement Plan under Project ID ORA111209. The regional emissions analysis conducted by Southern California Association of Governments (SCAG) for the conforming 2012

Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is available at http://scagrtp.net/. FHWA determined the RTP/SCS to conform to the SIP in June 2012.

The 2013 Federal Transportation Improvement Plan (FTIP adopted by SCAG in September 2012) is available at http://www.scag.ca.gov/ftip/2013/final.htm. The FTIP gives priority to eligible Transportation Control Measures (TCMs) identified in the SIP and provides sufficient funds to provide for their implementation. Conformity determination by federal agencies on the 2013 FTIP is expected mid-December 2012.

# 5 IMPACT ASSESSMENT

The pollutants that are most important to this air quality impact analysis are those that can be traced principally to motor vehicles and diesel train operations. In the project area, emissions of $SO_x$ and Pb are associated mainly with various stationary sources. Emissions of HC, $NO_x$ and $PM_{10}$ come from both mobile and stationary sources. Emissions of CO, $PM_{2.5}$ and MSAT (including DPM) are predominantly influenced by motor vehicle activity.

HC and $NO_x$ are examined on a regional level. While the EPA is concerned with $PM_{10}/_{2.5}$ levels, no quantitative guidelines have been established for their analysis and, as the study area is designated as being a non-attainment area for both $PM_{10}$ and $PM_{2.5}$, a qualitative analysis, following the EPA and FHWA/FTA guidelines, is required. In addition, CEQA requires that airborne impacts from both NOA and structural asbestos be addressed.

## 5.1 REGIONAL AIR QUALITY ANALYSIS

The relative regional or “mesoscale” air quality impacts are directly related to how the project affects overall air quality levels in the entire study area. This regional or “mesoscale” procedure utilizes vehicle miles traveled (VMT) (vehicle kilometers traveled [VKT]) and associated speed projections as estimated in the traffic analysis. Emission burdens are then determined using average hourly VMT/VKT data and vehicular emission rates for each alternative.

As this project is not expected to affect VMT or traffic speeds in the project area, no regional air quality impacts are projected.

## 5.2 CARBON MONOXIDE (CO) ANALYSIS

This project will have no effects on existing traffic in the project area. There will be no increase in roadway capacity and no effects at crossings. Operationally, the size of the parking area is too small to expect any impacts. The existing railroad right-of-way will accommodate the passing siding track, which will improve train headways and through-put. However, there will be no increase in the number or frequency of trains in the project corridor. Therefore, no CO impacts are expected and a microscale analysis is not necessary. The project is not predicted to cause or exacerbate a violation of the applicable State or National Ambient Air Quality Standards.

## 5.3 PARTICULATE MATTER ($PM_{2.5}$/$PM_{10}$)

The proposed project is not considered a project of air quality concern (POAQC) as defined in the EPA’s Transportation Conformity Guidance. The project will not affect existing traffic or railroad crossings in the project area. Further, the project will not increase the number or frequency of trains in the LOSSAN corridor. The project will not increase the number of diesel vehicles in the area. Finally, this project does

not involve the construction of new or expanded bus and rail terminals. Since the project is classified as exempt from conformity per 40 CFR 90.126, a PM hot-spot analysis is not required.

## 5.4 AIRBORNE ASBESTOS ANALYSIS

Asbestos minerals occur in rock and soil as the result of natural geologic processes, often in veins near earthquake faults in the coastal ranges and the foothills of the Sierra Nevada Mountains and other areas of California. NOA takes the form of long, thin, flexible, separable fibers. Natural weathering or human disturbance can break NOA down to microscopic fibers, easily suspended in air. When inhaled, these thin fibers irritate tissues and resist the body's natural defenses.

Asbestos is a known human carcinogen. It causes cancers of the lung and the lining of internal organs, as well as asbestosis and pleural disease that inhibit lung function. The EPA is working to address concerns about potential effects of NOA in a number of areas in California.

The California Geological Survey identifies ultramafic rocks in California to be the source of NOA, and in August 2000, they published a report titled *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* (available at ftp://ftp.consrv.ca.gov /pub /dmg/pubs/ofr/ofr_2000-019.pdf). Based on this report, Orange County does not contain ultramafic rocks and, therefore, is not an NOA area.

In addition to NOA, airborne asbestos impacts could occur with the demolition of existing structures that contain asbestos. No existing structures will be demolished for this project.

In conclusion, there would be no airborne asbestos impacts associated with this project.

## 5.5 MSAT ANALYSIS

On February 3, 2006, the FHWA released “Interim Guidance on Air Toxic Analysis in NEPA Documents”. This guidance was superseded on September 30, 2009 by FHWA’s “Interim Guidance Update on Air Toxic Analysis in NEPA Documents”. The purpose of FHWA’s guidance is to advise on when and how to analyze Mobile Source Air Toxics (MSATs) in the NEPA process for highways. This is an interim guidance, because MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

Technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying the potential differences in MSAT emissions, if any, from the project. The qualitative assessment presented below is derived in part from a study conducted by the FHWA titled, A Methodology for Evaluating Mobile Source Air Toxic Emissions among Transportation Project Alternatives, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm.

FHWA’s Interim Guidance groups projects into the following categories:

- Exempt Projects and Projects with no Meaningful Potential MSAT Effects;
- Projects with Low Potential MSAT Effects; and,
- Projects with Higher Potential MSAT Effects.

FHWA’s Interim Guidance provides examples of "Projects with No Meaningful Potential MSAT Effects or Exempt Projects." Since the proposed project is exempt from conformity requirements under the Clean Air Act pursuant to 40 CFR 93.126, no analysis or discussion of MSAT is necessary.

The purpose of this project is to facilitate a faster, safer and more reliable passenger rail system by constructing 1.7 miles of new railroad passing siding track. This will provide better operations while allowing existing train service within the corridor to pass more quickly and consistently through the San Juan Capistrano station. This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while vehicle-miles of travel are projected to increase by 145 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

## 5.6 CONSTRUCTION IMPACTS

In general, construction-related effects of the project would be limited to short-term increased fugitive dust and mobile-source emissions during construction. State and local regulations regarding dust control and other air quality emission reduction controls would be followed.

### 5.6.1 Fugitive Dust Emissions

Fugitive dust is airborne particulate matter, generally of a relatively large particulate size. Construction-related fugitive dust would be generated by haul trucks, concrete trucks, delivery trucks, and earth-moving vehicles operating around the construction sites. This fugitive dust would be caused by particulate matter that is re-suspended (“kicked up”) by vehicle movement over paved and unpaved roads, dirt tracked onto paved surfaces from unpaved areas at access points, and material blown from uncovered haul trucks.

Generally, the distance that particles drift from their source depends on their size, the emission height, and the wind speed. Small particles (30 to 100 micron range) can travel several hundred feet before settling to the ground. Most fugitive dust, however, is comprised of relatively large particles (that is, particles greater than 100 microns in diameter). These particles are responsible for the reduced visibility often associated with construction. Given their relatively large size, these particles tend to settle within 20 to 30 feet of their source.

To minimize the amount of construction dust generated, the guidelines below would be followed. The following prevention and minimization measures would minimize the potential particulate pollution:

#### 5.6.1.1 Site Preparation

- Minimize land disturbance.
- Use watering trucks to minimize dust.
- Cover trucks when hauling dirt.
- Stabilize the surface of dirt piles if they are not removed immediately.
- Use windbreaks to prevent accidental dust pollution.
- Limit vehicular paths and stabilize temporary roads.
- Pave all unpaved construction roads and parking areas to road grade for a length no less than 50 feet from where such roads and parking areas exit the construction site to prevent dirt from washing onto paved roadways.

#### 5.6.1.2 Construction

- Cover trucks when transferring materials.
- Use dust suppressants on unpaved traveled paths.
- Minimize unnecessary vehicular and machinery activities.
- Minimize dirt track-out by washing or cleaning trucks before leaving the construction site. An alternative to this strategy is to pave a few hundred feet of the exit road just before entering the public road.

#### 5.6.1.3 Post-Construction

- Re-vegetate any disturbed land not used.
- Remove unused material.
- Remove dirt piles.
- Re-vegetate all vehicular paths created during construction to avoid future off-road vehicular activities.

### 5.6.2 Mobile Source Emissions

Since CO emissions from motor vehicles generally increase with decreasing vehicle speed, disruption of traffic during construction (such as a temporary reduction of roadway capacity and increased queue lengths) could result in short-term, elevated concentrations of CO. To minimize the amount of emissions generated, every effort would be made during construction to limit disruption to traffic, especially during peak travel hours.

## 6 CONCLUSIONS

The proposed project is not predicted to cause or exacerbate any violations of the currently applicable NAAQS. Further, the project would not affect regional emissions or MSATs.

In summary, this project will not cause any air quality impacts. No mitigation in necessary.

# 7 REFERENCES

California Air Resources Board, *California Air Quality Data*. http://www.arb.ca.gov/aqd/aqd.htm

California Department of Conversation, Division of Mines and Geology. *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos.* August 2000. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf

Federal Highway Authority, *A Methodology for Evaluating Mobile Source Air Toxic Emissions among Transportation Project Alternatives.* http://www.fhwa.dot.gov/environment /airtoxic /msatcompare /msatemissions.htm

South Coast Air Quality Management District, *CEQA Air Quality Handbook*. April 1993.

Southern California Association of Governments. *2012-2035 Regional Transportation Plan/Sustainabile Communities Strategy Towards A Sustainable Future.* April 2012. http://scagrtp.net/

Southern California Association of Governments. *Final Federal Transportation Improvement Program FY 2012/13-2017/18*. . September 2012. http://scag.ca.gov/FTIP/2013/final.htm