

3.7 Air Quality

The following information is summarized from the Air Quality Technical Report for the Winchester to Temecula Corridor (LSA, 2002). Please refer to the technical report for detailed information on air quality in the study area.

3.7.1 Regional Air Quality and Climate/Meteorology

The project site is located in western Riverside County. This portion of Riverside County (west of San Geronio Pass) is located within the South Coast Air Basin (SCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. Air quality conditions in the SCAB are under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The middle part of the County is within the Salton Sea Air Basin (SSAB). The eastern part of the County is within the Mojave Desert Air Basin (MDAB).

The SCAQMD regulates stationary sources of pollution throughout its jurisdiction area. Direct emissions from motor vehicles are regulated by the California Air Resources Board (CARB).

3.7.1.1 Climate/Meteorology

Air quality in the planning area is not only affected by various emission sources (mobile, industry, etc.), but is also affected by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall, etc. The combination of topography, low mean mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the SCAB the worst air pollution problem in the nation.

Although the SCAB has a semi-arid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore 8 to 12 miles per hour (mph) daytime breeze and an offshore 3 to 5 mph nighttime breeze. The typical wind flow pattern fluctuates only with occasional winter storms, or strong northeasterly Santa Ana winds from the mountains and deserts northeast of the SCAB. Summer wind flow patterns represent worst case conditions, as this is the period of higher temperatures and more sunlight, which results in ozone formation.

During spring and early summer, pollution produced during any one day is typically blown out of the SCAB through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. The vertical dispersion of air pollutants in the SCAB is limited by temperature inversions in the atmosphere close to the earth's surface. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino counties. In the winter, the greatest pollution problems are carbon monoxide and oxides of nitrogen because of extremely low inversions and air stagnation during the night and early morning hours. In the