APPENDIX D

AIR QUALITY & NOISE ASSESSMENTS

WESTFIELD FAHSION SQUARE EXPANSION PROJECT
AIR QUALITY AND NOISE IMPACT REPORT

taha
environmental planners

Prepared for

PLANNING ASSOCIATES

Prepared by

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WESTFIELD FASHION SQUARE EXPANSION PROJECT

AIR QUALITY AND NOISE IMPACT REPORT

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1.0 SUMMARY OF FINDINGS

Terry A. Hayes Associates LLC completed an air quality and noise impact analysis for the proposed Westfield Fashion Square Expansion Project. Key findings are listed below.

1.1 AIR QUALITY

- Construction of the proposed project would result in maximum daily regional emissions of approximately 68 pounds per day (ppd) of volatile organic compounds (VOC), 133 ppd of nitrogen oxides (NO_X), 56 ppd of carbon monoxide (CO), <1 ppd of sulfur oxides (SO_X), 16 ppd of particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), and 58 ppd of particulate matter ten microns or less in diameter (PM_{10}). Daily construction emissions are anticipated to exceed than the South Coast Air Quality Management District's (SCAQMD) regional significance thresholds for NO_X and, as such, would not result in a significant impact.

- Construction of the proposed project would result in maximum daily localized emissions of approximately 29 ppd of NO_X, 12 ppd of CO, 12 ppd of $PM_{2.5}$, and 53 ppd of PM_{10}. Daily construction emissions are anticipated to exceed the SCAQMD localized significance thresholds for $PM_{2.5}$ and PM_{10} and, as such, would result in a significant impact.

- Weekday operation of the proposed project would result in net daily emissions of approximately 22 ppd of VOC, 34 ppd of NO_X, 232 ppd of CO, less than one ppd of SO_X, 8 ppd of $PM_{2.5}$, and 42 ppd of PM_{10}. Weekend operation of the proposed project would result in net daily emissions of approximately 27 ppd of VOC, 42 ppd of NO_X, 291 ppd of CO, less than one ppd of SO_X, 10 ppd of $PM_{2.5}$, and 53 ppd of PM_{10}. Daily operational emissions are anticipated to be less than the SCAQMD regional significance thresholds and, as such, would result in a less-than-significant impact.

- Weekday one-hour CO concentrations under "project" conditions would be approximately 5 parts per million (ppm) at worst-case sidewalk receptors. Weekday eight-hour CO concentrations under "project" conditions would range from approximately 3.2 ppm to 3.5 ppm. Weekend one- and eight-hour CO concentrations under "project" conditions would be approximately 5 and 3.2 ppm, respectively. The State one- and eight-hour standards of 20 and 9.0 ppm, respectively, would not be exceeded. Thus, a less-than-significant impact is anticipated.

- The proposed project would not expose sensitive receptors to significant emissions of toxic air contaminants as a result of activities associated with proposed project construction or operations. Toxic air contaminant emissions would result in a less-than-significant impact.

- The proposed project would not expose people to objectionable odors.

- The proposed project would comply with Air Quality Management Plan (AQMP) Consistency Criteria No. 1 and No. 2, and this is considered consistent with the SCAQMD 2003 Air Quality Management Plan. Therefore, a less-than-significant impact is anticipated.

- The ratio of daily project-related employment vehicle miles traveled (VMT) to countywide VMT would not exceed the ratio of daily project-related employment to countywide employment. As such, the proposed project would not significantly contribute to cumulative emissions.

- The proposed project would result in net carbon equivalent emissions of 5,056 tons per year of carbon dioxide (CO_2), methane (CH_4), and nitrogen dioxide (N_2O). The proposed project would not generate a disproportionate amount of vehicle miles traveled and would not have unusually high fuel consumption characteristics. As such, the proposed project would have a negligible effect on any increase in regional and national greenhouse gas emissions.

1.2 NOISE

- Implementation of Mitigation Measures **N1** through **N9** would result in construction noise levels less than the 5-dBA significance threshold. As such, construction noise would result in a less-than-significant impact.

- Regarding weekday mobile noise, the greatest project-related mobile noise increase would be 0.4 dBA CNEL and would occur along Riverside Drive between Hazeltine and Woodman Avenues. The roadway noise increase attributed to the proposed project would be less than the 3-dBA CNEL incremental threshold at all analyzed segments. As such, there would not be a perceptible change in audible noise as a result of increased traffic.

- Regarding weekend mobile noise, the greatest project-related mobile noise increase would be 0.5 dBA CNEL and would occur along Riverside Drive between Hazeltine and Woodman Avenues. The roadway noise increase attributed to the proposed project would be less than the 3-dBA CNEL incremental threshold at all analyzed segments. As such, there would not be a perceptible change in audible noise as a result of increased traffic.

- Non-vehicular noise (e.g. mechanical equipment and parking activity) would not increase ambient noise levels by more than 5 dBA. This impact would be less than significant.

- The proposed project would not include any significant sources of ground-borne vibration. The ground-borne vibration operational impact would be less than significant.

- The proposed project would not significantly contribute to a cumulative noise or vibration impact.

2.0 INTRODUCTION

2.1 PURPOSE OF STUDY

The purpose of this study is to evaluate the potential air quality and noise impacts of the proposed Westfield Fashion Square Expansion Project. Potential air quality and noise impacts are analyzed for construction and operation of the proposed project. Mitigation measures for air quality and noise are recommended, where necessary.

2.2 PROJECT DESCRIPTION

2.2.1 LOCATION

The project site is located along Riverside Drive between Woodman Avenue and Hazeltine Avenue, at the existing Fashion Square shopping center. The project is bordered by Riverside Drive to the north, Hazeltine Avenue to the west, the US-101 to the south, and Woodman Avenue to the east. The project site is roughly rectangular and covers all of the 28.8-acre shopping center, except for an approximately 3.0-acre parcel in the southwest corner of the Riverside Drive/Woodman Avenue intersection.

2.2.2 PROPOSED PROJECT

The Fashion Square shopping center has been a vital commercial and retail asset for the Sherman Oaks community. The proposed project would entail construction of approximately 280,000 gross leasable square feet (GLSF) of additional retail and restaurant uses. The building footprint is approximately 482,740 square feet in size, 426,556 square feet of which include the proposed project. The proposed project would require the following actions:

- A zone change to consolidate and make zoning consistent across the property
- A Conditional Use Permit for construction of a “Major Development Project” that exceeds the threshold of 100,000 square feet of non-residential development
- A Conditional Use Permit for Commercial Corner development
- A Zone Variance to deviate from the 45-foot height restriction
- A Conditional Use Permit for the on-site sale and consumption of a full line of alcoholic beverages for the new sit-down restaurants
- A request for Shared Parking

2.2.3 CONSTRUCTION

The project would be completed in one phase with three stages. The first stage would include the construction of a new two-level parking structure, (1 at-grade level and 2 above-grade levels) at the eastern edge of the project site. The second stage would include the construction of a new seven-level parking structure, (1 below-grade, 1 at-grade, and 5 above-grade levels) south of the existing Macy’s parking lot. The third stage would include construction of the shopping mall and subterranean parking.

2.2.4 PROJECT DESIGN FEATURES

PDF AQ-1: The proposed project will be designed to reduce exposure of sensitive receptors to excessive levels of air quality. The proposed project will also be designed, built, and operated in a manner consistent with the requirements to achieve Leadership in Energy and Environmental Design (LEED) certification from the United States Green Building Council.[1] LEED is a green building rating system that was designed to guide and distinguish high-performance commercial projects. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. The Expansion Project will implement a variety of design and operational features to achieve LEED certification. As a result, the Expansion Project would be proactive in reducing GHG emissions. Examples of design features to be implemented for the Expansion Project in order to achieve LEED certification include, but are not limited to, the following or their equivalent:

- A construction activity pollution prevention program.
- Encouraging the use of mass transit.
- Providing transportation amenities, such as alternative fueling stations, carpool/vanpool programs, bicycle racks, and showering/changing facilities.
- Implementing a stormwater management plan that reduces impervious cover, promotes infiltration, and captures and treats the stormwater runoff from 90 percent of the average annual rainfall using acceptable best management practices.
- Adopting site lighting criteria to maintain safe light levels while avoiding off-site lighting and night sky pollution, minimizing site lighting where possible, and reducing light pollution.
- Providing tenants with a description of the sustainable design and construction features incorporated in the core and shell project.
- Using high-efficiency irrigation technology or reducing potable water consumption for irrigation by 50 percent by using a combination of plant species factor, irrigation efficiency, use of captured rainwater, use of recycled wastewater, use of water treated and conveyed by public agency specifically for non-potable uses.
- Employing strategies that, in aggregate, use 20 percent less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.
- Designing the building envelope and building system to maximize energy performance.
- Selecting refrigerants that reduce ozone depletion while minimizing direct contributions to global warming.
- Implementing a construction waste management plan that identifies the materials to be diverted from disposal and whether the materials will be sorted on-site or comingled. The waste management plan would include recycling and/or salvaging at least 50 percent of non-hazardous construction and demolition debris.

[1] United States Green Building Council, *Leadership in Energy and Environmental Design*, www.usgbc.org/LEED, 2007.

- Using materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least ten percent of the total value of the materials in the project.
- Using a minimum of ten percent of the total materials value on building materials or products extracted, harvested, or recovered and manufactured within 500 miles of the project site.
- Adopting an indoor air quality management plan to protect the HVAC system during construction, control pollutant sources, and interrupt contamination pathways.
- Specifying low-volatile organic compounds paints and coatings in construction documents.
- Designing the building with the capability for occupant controls for airflow, temperature and ventilation. Strategies will include underfloor HVAC systems with individual diffusers, displacement ventilation systems with control devices, ventilation walls and mullions, and operable windows.

PDF AQ-2 The Expansion Project would install carbon monoxide and airflow measurement equipment that would transfer the information to the HVAC system and/or Building Automation System to trigger corrective action, if applicable, and/or use the measurement equipment to trigger alarms that inform building operators or occupants of a possible deficiency in outdoor air delivery. Installation of such a system in areas where carbon monoxide concentrations may escalate (such as in the vicinity of loading docks or valet parking drop-offs) would improve both indoor and localized “hotspot” air quality.

PDF AQ-3 The Expansion Project would provide bicycle racks at a ratio of 2% of the total number of parking spaces on-site, as well as lockers, changing rooms and showers inside the shopping center. A minimum of 20 additional bicycle spaces (in racks) would be provided at multiple locations through out the site. Four showers (two per each gender) would be provided in a dedicated shower facility area. Lockers would be provided in conjunction with the shower facilities.

PDF AQ-4 The Expansion Project would provide a shuttle service connecting the site to a nearby Orange Line station (e.g., Van Nuys Boulevard). This service could be provided by either the provision of a private shuttle or the funding of extended hours for the existing Los Angeles Department of Transportation (LADOT) DASH line. The Orange Line shuttle would complement existing transit services (i.e., the LADOT DASH service) such that the shuttle would operate during hours when other public transit services connecting the site to the Orange Line are not available (e.g., during weekdays evenings and general weekend hours). The shuttle would operate during regular shopping center hours corresponding with periods of peak parking demand at the site and peak holiday season demand (i.e., everyday during the holiday shopping period between November 15 and January 1, and every Saturday/Sunday throughout the year).

3.0 AIR QUALITY

This section examines the degree to which the proposed project may result in significant adverse changes to air quality. Both short-term construction emissions occurring from activities, such as site grading and haul truck trips, and long-term effects related to the ongoing operation of the proposed project, are discussed in this section. The analysis contained herein focuses on air pollution from two perspectives, daily emissions and pollutant concentrations. “Emissions” refer to the quantity of pollutant released into the air, measured in ppd. “Concentrations” refer to the amount of pollutant material per volumetric unit of air, measured in ppm or micrograms per cubic meter ($\mu g/m^3$).

3.1 POLLUTANTS & EFFECTS

Criteria air pollutants are defined as pollutants for which the federal and State governments have established ambient air quality standards or criteria for outdoor concentrations to protect public health. The federal and State standards have been set at levels above which concentrations may be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include CO, ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), $PM_{2.5}$, PM_{10}, and lead (Pb). These pollutants are discussed below.

Carbon Monoxide. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spacial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February.[2] The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood’s ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG), which includes VOC, and NO_X react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of ROG and NO_X, the components of O_3, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile. Short-term exposure (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

[2]Inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air.

Nitrogen Dioxide. NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X and are major contributors to O_3 formation. NO_2 also contributes to the formation of PM_{10}. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase of bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries. Generally, the highest levels of SO_2 are found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. 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.

Particulate Matter. 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 gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g. 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 SO_2, NO_X, and VOC. Inhalable particulate matter, or PM_{10}, is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; 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.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and 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. Very small particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead. Pb in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturers of batteries, paint, ink, ceramics, and ammunition and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans. A toxic substance released into the air is considered a toxic air contaminant (TAC). TACs are identified by State and federal agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act, Assembly Bill 1807, Tanner. This two-step process of risk identification and risk management was designed to protect residents from the health effects of toxic substances in the air.

The SCAQMD has a long and successful history of reducing air toxics and criteria emissions in the South Coast Air Basin. SCAQMD has an extensive control program, including traditional and innovative rules and policies. These policies can be viewed in the SCAQMD's *Air Toxics Control Plan for the Next Ten Years (*March 2000*)*.

Greenhouse Gases. Greenhouse gas (GHG) emissions refer to a group of emissions that are generally believed to affect global climate conditions. Simply put, the greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), keep the average surface temperature of the Earth close to 60 degrees Fahrenheit (˚F). Without the greenhouse effect, the Earth would be a frozen globe with an average surface temperature of about 5˚F.

In addition to CO_2, CH_4, and N_2O, GHGs include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and water vapor. Of all the GHGs, CO_2 is the most abundant pollutant that contributes to climate change through fossil fuel combustion. CO_2 comprised 81 percent of the total GHG emissions in California in 2002 and non-fossil fuel CO_2 comprised 2.3 percent.[3] The other GHGs are less abundant but have higher global warming potential than CO_2. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e. The CO_2e of CH4 and N2O represented 6.4 and 6.8 percent, respectively, of the 2002 California GHG emissions. Other high global warming potential gases represented 3.5 percent of these emissions. In addition, there are a number of man-made pollutants, such as CO, NO_X, non-methane VOC, and SO_2, that have indirect effects on terrestrial or solar radiation absorption by influencing the formation or destruction of other climate change emissions.

3.2 REGULATORY SETTING

The Federal Clean Air Act (CAA) governs air quality in the United States. In addition to being subject to the requirements of CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, CAA is administered by the United States Environmental Protection Agency (USEPA). In California, the CCAA is administered by the California Air Resources Board (CARB) at the State level and by the air quality management districts and air pollution control districts at the regional and local levels.

United States Environmental Protection Agency. USEPA is responsible for enforcing the federal CAA. USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). NAAQS are required under the 1977 CAA and subsequent amendments.

[3] California Environmental Protection Agency, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006, p. 11.

USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. USEPA 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 stricter emission standards established by CARB.

California Air Resources Board. CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for meeting the State requirements of the federal CAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. CARB is 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 established passenger vehicle fuel specifications, which became effective on March 1996. CARB 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 levels.

South Coast Air Quality Management District. SCAQMD monitors air quality within the project area. SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of Orange County; the non-desert portions of Los Angeles, Riverside, and Bernardino counties; and the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. The 1977 Lewis Air Quality Management Act created SCAQMD to coordinate air quality planning efforts throughout Southern California. This Act merged four county air pollution control agencies into one regional district to better address the issue of improving air quality in Southern California. Under the Act, renamed the Lewis-Presley Air Quality Management Act in 1988, SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin (Basin). Specifically, SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain State and federal ambient air quality standards in the district. Programs that were developed include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The Basin is a subregion of the SCAQMD and covers an area of 6,745 square miles. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto mountains to the north and east; and the San Diego County line to the south (**Figure AQ-1**).

Global Climate Change. Global climate change refers to variances in Earth's meteorological conditions, which are measured by wind patterns, storms, precipitation, and temperature. There is general scientific agreement that the Earth's average surface temperature has increased by 0.3 to 0.6 degrees Celsius over the past century.[4] The reasons behind the increase in temperature are not well understood and are the subject of intense research activity. Many scientific studies have been completed to determine the extent that CHG emissions from human sources (e.g., fossil fuel combustion) affect the Earth's climate. The interrelationships between atmospheric composition,

[4] Finlayson-Pitts, Barbara J., and James N. Pitts, Jr., *Chemistry of the Upper and Lower Atmosphere*, 1999.

LEGEND:

South Coast Air Basin

State of California

APPROX. SCALE

0 75 150 MILES

SOURCE: California Air Resources Board, State and Local Air Monitoring Network Plan, October 1998

Westfield Fashion Square Expansion Project
Air Quality and Noise Impact Report

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FIGURE AQ-1

SOUTH COAST AIR BASIN

chemistry, and climate change are very complex. For example, historical records indicate a natural variability in surface temperature.[5] Historical records also indicate that atmospheric concentrations of a number of GHG have increased significantly since the beginning of the industrial revolution.[6] As such, significant attention is being given to anthropogenic (human) GHG emissions.

Many chemical compounds found in the Earth's atmosphere act as GHGs. These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to the Earth's surface should be approximately equal to the amount of energy radiated from Earth back into space, leaving the temperature of the Earth's surface roughly constant. Some GHG are emitted naturally (water vapor, CO_2, CH_4, and N_2O), while others are exclusively human-made (e.g., gases used for aerosols). According to the California Energy Commission (CEC), emissions from fossil fuel consumption represent approximately 81 percent of GHG emissions and transportation creates 41 percent of GHG emissions in California.[7]

The State of California has traditionally been a pioneer in efforts to reduce air pollution, dating back to 1963 when the California New Motor Vehicle Pollution Control Board adopted the nation's first motor vehicle emission standards. Likewise, California has a long history of actions undertaken in response to the threat posed by climate change. Assembly Bill (AB) 1493, signed by California's governor in July 2002, requires passenger vehicles and light duty trucks to achieve maximum feasible reduction of GHG emissions by model year 2009.[8] AB 1493 was enacted based on recognition that passenger cars are significant contributors to the State's GHG emissions. in response to the threat posed by climate change. AB 1493, signed by California's governor in July 2002, requires passenger vehicles and light duty trucks to achieve maximum feasible reduction of GHG emissions by model year 2009.[9] AB 1493 was enacted based on recognition that passenger cars are significant contributors to the State's GHG emissions.

Following the passage of the bill, the CARB was tasked to determine the reduction targets based on CARB's analysis of available and near-term technology and cost. After evaluating the options, the CARB established limits that will result in approximately a 22-percent reduction in GHG emissions from new vehicles by 2012, and approximately a 30-percent reduction by 2016.[10] The Federal Clean Air Act reserves the control of emissions from motor vehicles to the federal government,with the exception of California due to its early activity and special conditions (i.e., high density of motor vehicles, topography conducive to pollution formation in heavily populated basins—e.g., Los Angeles and the San Joaquin Valley), and any states that opt for the California regulations. For California to implement a modification such as that represented in AB 1493, it must request a waiver pursuant to Section 209 of the Federal Clean Air Act. The United States Environmental Protection Agency (USEPA) has not ruled on California's request for a waiver, thereby possibly delaying CARB's proposed implementation schedule.

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[5] *Ibid*.

[6] *Ibid*.

[7] California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF, December 2006.

[8] State of California, AB 1493, July 22, 2002.

[9] State of California, AB 1493, July 22, 2002.

[10] Green Car Congress, *EPA Concludes Public Hearings on California Waiver for New Vehicle CO_2 Regulations*, http://www.greencarcongress.com/2007/05/epa_concludes_p.html, May 31, 2007.

On September 27, 2006, AB 32, the California Global Warming Solutions Act of 2006, was enacted by the State of California.[11] In that statute, the Legislature stated that "Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." AB 32 seeks to, among other things, cap California's GHG emissions at 1990 levels by 2020. Relevant gases defined by AB 32 as GHG pollutants include CO_2, CH_4, N_2O.[12] While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB 32 lays out a program to inventory and reduce GHG emissions in California. This bill represents the first enforceable Statewide program in the United States to cap all GHG emissions from major industries and include penalties for non-compliance.

AB 32 charges CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. On June 1 2007, the CARB adopted three discrete early action measures to reduce GHG emissions. These measures involve complying with a low carbon fuel standard, reducing refrigerant loss from motor vehicle air conditioning maintenance and increasing methane capture from landfills.[13] On October 25, 2007, the CARB tripled the set of previously approved early action measures. The newly approved measures include Smartway truck efficiency (i.e., reducing aerodynamic drag), port electrification, reducing perfluorocarbons from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing sulfur hexaflouride emissions from the non-electricity sector. AB 32 also required CARB to define the 1990 baseline emissions for California and adopt that baseline as the 2020 statewide emissions cap. CARB has determined that the total statewide aggregated greenhouse gas 1990 emissions level and 2020 emissions limit is 427 million metric tonnes of carbon dioxide equivalent.

CARB has been tasked to establish a "scoping" plan by January 1, 2009 for achieving reductions in GHG emissions, and regulations by January 1, 2011 for reducing GHG emissions to achieve the emissions cap by 2020,[14] which rules would take effect no later than 2012.[15] In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic benefits for California, and complement the State's ongoing efforts to improve air quality. AB 32 also directs CARB to "recommend a *de minimis* threshold of greenhouse gas emissions below which emissions reduction requirements will not apply" by January 1, 2009. HSC § 38561(e). CARB has suggested a 25,000 metric ton emissions level as a possible *de minimis* threshold.

California Senate Bill (SB) 97, passed in August 2007, is designed to work in conjunction with the California Environmental Quality Act (CEQA) and AB 32.[16] CEQA requires the State Office of Planning and Research (OPR) to prepare and develop guidelines for the implementation of CEQA by public agencies. SB 97 requires OPR by July 1, 2009 to prepare, develop, and transmit to the State Resources Agency its proposed guidelines for the feasible mitigation of GHG emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. The Resources Agency is required to certify and adopt the guidelines by January

[11] State of California, Health and Safety Code, Division 25.5 (California Global Warming Solutions Act of 2006), September 27, 2006.

[12] AB 32 also defines hydrofluorocarbons, perfluorocarbons and sulfur hexaflouride as GHG pollutants but these gases would not be emitted by the proposed Fashion Square expansion project.

[13] California Air Resources Board, *Proposed Early Action Measures to Mitigate Climate Change in California*, April 20, 2007.

[14] State of California, Health and Safety Code, Division 25.5 (California Global Warming Solutions Act of 2006), September 27, 2006.

[15] *Ibid*.

[16] State of California, SB 97, August 21, 2007.

2010, and OPR is required to periodically update the guidelines to incorporate new information or criteria established by the CARB pursuant to AB 32. SB 97 would apply to any proposed or draft environmental impact report, negative declaration, mitigated negative declaration, or other document prepared under CEQA that has not been certified or adopted by the CEQA lead agency as of the effective date of the new guidelines. In addition, SB 97 exempts transportation projects funded under the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or projects funded under the Disaster Preparedness and Flood Prevention Bond Act of 2006.

The OPR CEQA guidelines will provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents. In the interim, OPR has published informal guidance regarding the steps lead agencies should take to address climate change in their CEQA documents.[17] According to the OPR, lead agencies should determine whether GHG may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by type and source. When assessing whether a project's effects on climate change are "cumulatively considerable" even though its GHG contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

The SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing GHG CEQA significance thresholds. The working group is currently discussing multiple methodologies for determining project significance. These methodologies include categorical exemptions, consistency with regional GHG budgets in approved plans, a numerical threshold, performance standards, and emissions offsets.

At this time, the USEPA does not regulate GHG emissions. However, in the case of *Massachusetts versus USEPA*, the United States Supreme Court issued a ruling (April 2007) that reviewed a USEPA decision not to regulate GHG emissions from cars and trucks under the Clean Air Act. The lawsuit focused on Section 202 of the Clean Air Act. The case resolved the following legal issues: (1) the Clean Air Act grants the USEPA authority to regulate GHG emissions, and (2) USEPA did not properly exercise its lawful discretion in deciding not to promulgate regulations concerning GHG emissions.

Adopted by the CEC on November 5, 2003, Title 24 is the 2005 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Title 24 is considered one of the most stringent set of regulations for energy conservation in new buildings in the country. Mandatory measures in Title 24 requirements include, but are not limited to, minimum ceiling, wall, and raised floor insulation, minimum Heating, Ventilating and Air Conditioning (HVAC), and minimum water heating equipment efficiencies. The 2005 Standards (for residential and nonresidential buildings) are expected to reduce electricity use by 478 gigawatt-hours per year (GWh/y) and reduce the growth in natural gas use by 8.8 million therms per year.[18] The savings attributable to new nonresidential buildings are 163.2 GWh/y of electricity savings and 0.5 million therms of natural

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[17]State of California, Governor's Office of Planning and Research, CEQA and Climate Change: Addressing Climate Change through California Environmental Climate Act (CEQA) Review, June 19, 2008.

[18]California Energy Commission, *2005 Building Energy Efficiency Standards Nonresidential Compliance Manual*, March 2005.

gas.[19] Additional savings result from the application of the Standards on building alterations. In particular, requirements for cool roofs, lighting and air distribution ducts are expected to save about 175 GWh/y of electricity.[20] The State's energy efficiency standards represent an important strategy that can make an important contribution to the reduction of GHG emissions.

In addition to the State regulations, the City of Los Angeles has issued guidance promoting green building to reduce GHG emissions. The goal of the Green LA Action Plan (Plan) is to reduce greenhouse gas emissions 35 percent below 1990 levels by 2030.[21] The Plan identifies objectives and actions designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations, and create a framework to address City-wide GHG emissions. The Plan lists various focus areas in which to implement GHG reduction strategies. Focus areas listed in the Plan include energy, water, transportation, land use, waste, port, airport, and ensuring that changes to the local climate are incorporated into planning and building decisions. The Plan discusses City goals for each focus area as follows:

Energy

- Increase the generation of renewable energy;
- Develop sustainable construction guidelines;
- Increase City-wide energy efficiency; and
- Promote energy conservation.

Water

- Decrease per capita water use to reduce electricity demand associated with water pumping and treatment.

Transportation

- Power the City vehicle fleet with alternative fuels; and
- Promote alternative transportation (e.g., mass transit and rideshare).

Other Goals

- Create a more livable City through land use regulations;
- Increase recycling, reducing emissions generated by activity associated with the Port of Los Angeles and regional airports;
- Create more city parks, promoting the environmental economic sector; and
- Adapt planning and building policies to incorporate climate change policy.

3.2.1 National and California Ambient Air Quality Standards and Attainment Status

As required by the federal CAA, NAAQS have been established for seven major air pollutants: CO, NO_2, O_3, $PM_{2.5}$, PM_{10}, SO_2, and Pb. The CAA requires USEPA to designate areas as either attainment or nonattainment for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in **Table 3-1.** The USEPA has classified the Basin as maintenance for CO and nonattainment for O_3, $PM_{2.5}$, and PM_{10}.

[19]*Ibid*.
[20]*Ibid*.
[21]City of Los Angeles, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, May 2007.

As discussed above, the CAAQS are generally more stringent than the corresponding federal standards (NAAQS) and, as such, are used as the comparative standard in the air quality analysis contained in this report. The State standards are summarized in **Table 3-1.**

The CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard and are not used as a basis for designating areas as nonattainment. The state standards are also summarized in **Table 3-1.** Under the CCAA, the Los Angeles County portion of the Basin is designated as a nonattainment area for O_3, $PM_{2.5}$, and PM_{10}.[22]

All areas designated as nonattainment under the CCAA are required to prepare plans showing how the area would meet the State air quality standards by its attainment dates. The AQMP is the region's plan for improving air quality in the region. It addresses CAA and CCAA requirements and demonstrates attainment with State and federal ambient air quality standards. The AQMP is prepared by SCAQMD and the Southern California Association of Governments (SCAG). The AQMP provides policies and control measures that reduce emissions to attain both State and federal ambient air quality standards by their applicable deadlines. Environmental review of individual projects within the Basin must analyze whether the proposed project's daily construction and operational emissions would exceed thresholds established by the SCAQMD. The environmental review must also analyze whether individual projects would not increase the number or severity of existing air quality violations.

3.2.2 Air Quality Management Plan

All areas designated as nonattainment under the CCAA are required to prepare plans showing how the area would meet the State air quality standards by its attainment dates. The AQMP is the region's plan for improving air quality in the region. It addresses CAA and CCAA requirements and demonstrates attainment with State and federal ambient air quality standards. The AQMP is prepared by SCAQMD and SCAG. The AQMP provides policies and control measures that reduce emissions to attain both State and federal ambient air quality standards by their applicable deadlines. Environmental review of individual projects within the Basin must demonstrate that daily construction and operational emissions thresholds, as established by the SCAQMD, would not be exceeded. The environmental review must also demonstrate that individual projects would not increase the number or severity of existing air quality violations.

The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. The 2007 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of SO_X, directly-emitted $PM_{2.5}$, and NO_X supplemented with VOC by 2015. The eight-hour ozone control strategy builds upon the $PM_{2.5}$ strategy, augmented with additional NO_X and VOC reductions to meet the standard by 2024. The 2007 AQMP also addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP is consistent with and builds upon the approaches taken in the 2003 AQMP. However, the 2007 AQMP highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the time frames allowed under the CAA.

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[22]CARB, http://www.arb.ca.gov/desig/adm/adm.htm, accessed January26, 2008.

TABLE 3-1: STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Period	California Standards	California Attainment Status	Federal Standards	Federal Attainment Status
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	Nonattainment	--	--
	8-hour	0.070 ppm (137 µg/m^3)	n/a	0.08 ppm (157 µg/m^3)	Nonattainment
Respirable Particulate Matter (PM_{10})	24-hour	50 µg/m^3	Nonattainment	150 µg/m^3	Nonattainment
	Annual Arithmetic Mean	20 µg/m^3	Nonattainment	--	--
Fine Particulate Matter ($PM_{2.5}$)	24-hour	--	--	35 µg/m^3	Nonattainment
	Annual Arithmetic Mean	12 µg/m^3	Nonattainment	15 µg/m^3	Nonattainment
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Maintenance
	1-hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Maintenance
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (56 µg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Attainment
	1-hour	0.18 ppm (338 µg/m^3)	Attainment	--	--
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	--	--	0.030 ppm (80 µg/m^3)	Attainment
	24-hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Attainment
	3-hour	--	--	--	--
	1-hour	0.25 ppm (655 µg/m^3)	Attainment	--	--
Lead (Pb)	30-day average	1.5 µg/m^3	Attainment	--	--
	Calendar Quarter	--	--	1.5 µg/m^3	Attainment

n/a = not available
SOURCE: CARB, *Ambient Air Quality Standards*, February 22, 2007.

3.3 EXISTING AIR QUALITY

3.3.1 Air Pollution Climatology

The project site is located within the Los Angeles County portion of the Basin. Ambient pollution concentrations recorded in Los Angeles County are among the highest in the four counties comprising the Basin.

The Basin is in an area of high air pollution potential due to its climate and topography. The general region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. This Basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region.

The Basin experiences frequent temperature inversions. Temperature typically decreases with height. However, under inversion conditions, temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to CO and NO_2 emissions. CO concentrations are generally worse in the morning and late evening (around 10:00 p.m.). In the morning, CO levels are relatively high due to cold temperatures and the large number of cars traveling. High CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the Basin are associated with heavy traffic. NO_2 levels are also generally higher during fall and winter days.

3.3.2 Local Climate

The mountains and hills within the Basin contribute to the variation of rainfall, temperature, and winds throughout the region. Within the project site and its vicinity, the average wind speed, as recorded at the Burbank Wind Monitoring Station, is approximately 4.1 miles per hour, with calm winds occurring approximately 13.8 percent of the time. Wind in the vicinity of the project site predominately blows from the West.[23]

The annual average temperature in the project area is 64.1 °F. The project area experiences an average winter temperature of approximately 55.2°F and an average summer temperature of approximately 73.1°F. Total precipitation in the project area averages approximately 16.5 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Precipitation averages approximately 9.6 inches during the winter, approximately 4.4

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[23]SCAQMD, http://www.aqmd.gov/smog/metdata/MeteorologicalData.html. See Appendix A.

inches during the spring, approximately 2.3 inches during the fall, and less than 1 inch during the summer.[24]

3.3.3 Air Monitoring Data

The SCAQMD monitors air quality conditions at 38 locations throughout the Basin. The project site is located in SCAQMD's East San Fernando Valley Air Monitoring Subregion, which is served by the Burbank Monitoring Station, located approximately 7.8 miles east of the project site on 228 West Palm Avenue between Victory Boulevard and Lake Street in the City of Burbank (**Figure AQ-2**). Historical data from the Burbank Monitoring Station were used to characterize existing conditions in the vicinity of the project area. Criteria pollutants monitored at the Burbank Monitoring Station include O_3, CO, NO_2, PM_{10}, and $PM_{2.5}$.

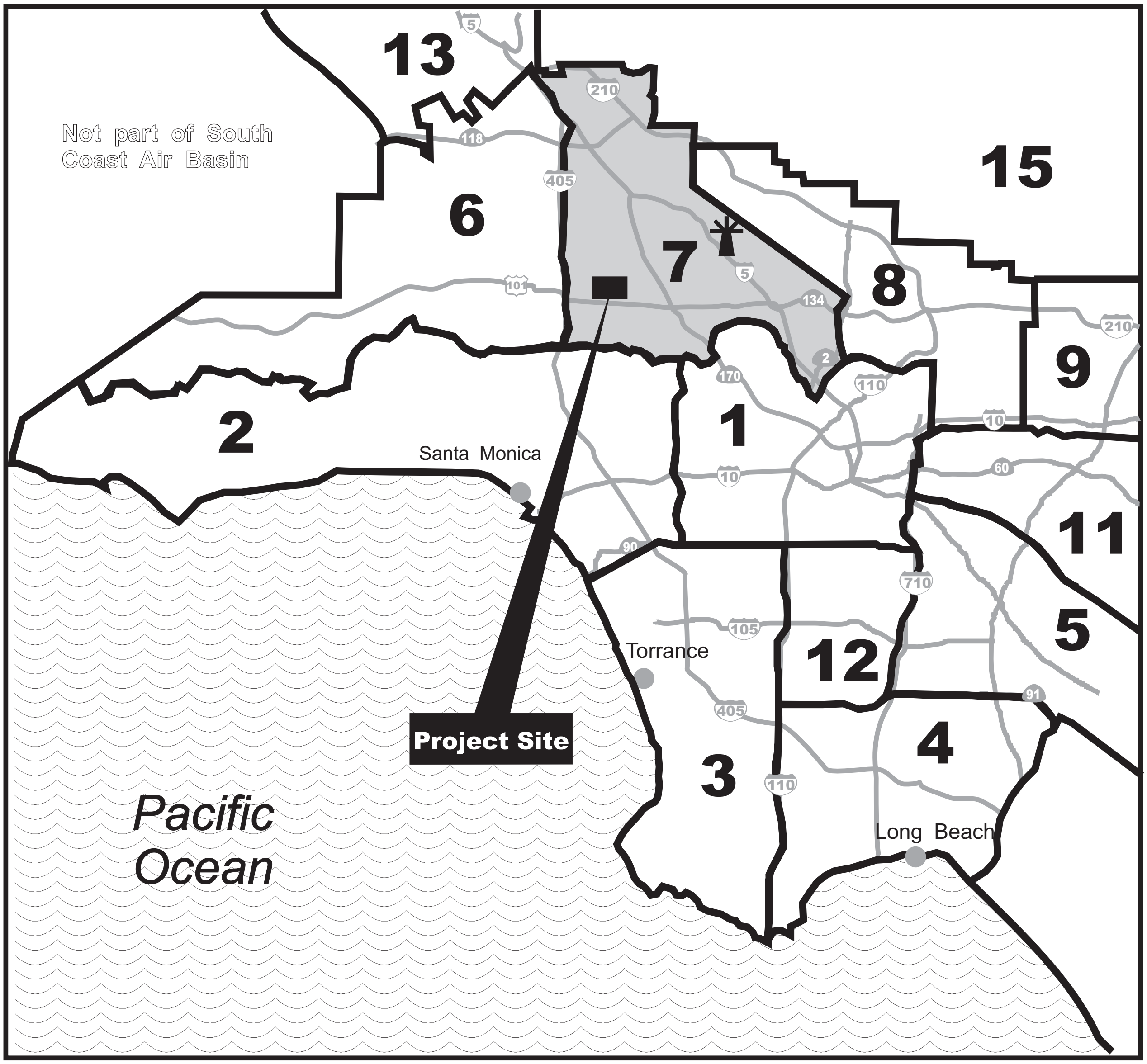
Table 3-2 shows pollutant levels, the State standards, and the number of exceedances recorded at the Burbank Monitoring Station from 2004 to 2006. The CAAQS for the criteria pollutants are also shown in the table. As **Table 3-2** indicates, criteria pollutants CO, NO_2, and SO_2 did not exceed the CAAQS during the 2004 through 2006 period. However, the one-hour State standard for O_3 was exceeded 65 times during this period, and the eight-hour State standard for O_3 was exceeded 72 times. Additionally, the 24-hour State standard for PM_{10} was exceeded four times in 2004, five times in 2005, and ten times in 2006. The annual State standard for $PM_{2.5}$ was exceeded every year from 2004 to 2006. A summary of the data recorded at the monitoring station is included in Appendix B.

TABLE 3-2: 2004-2006 AMBIENT AIR QUALITY DATA IN PROJECT VICINITY

Pollutant	Pollutant Concentration & Standards	Number of Days Above State Standard		
		2004	2005	2006
Ozone	Maximum 1-hr Concentration (ppm) Days > 0.09 ppm (State 1-hr standard) Maximum 8-hr Concentration (ppm) Days > 0.07 ppm (State 8-hr standard)	0.14 27 0.11 37	0.14 13 0.11 12	0.17 25 0.13 23
Carbon Monoxide	Maximum 1-hr concentration (ppm) Days > 20 ppm (State1-hr standard) Maximum 8-hr concentration (ppm) Days > 9.0 ppm (State 8-hr standard)	5 0 3.7 0	4 0 3.4 0	4 0 3.5 0
Nitrogen Dioxide	Maximum 1-hr Concentration (ppm) Days > 0.18 ppm (State 1-hr standard)	0.12 0	0.09 0	0.1 0
PM_{10}	Maximum 24-hr concentration (µg/m^3) Estimated Days > 50 µg/m^3 (State 24-hr standard)	74 7	92 5	71 10
$PM_{2.5}$	Maximum 24-hr concentration (µg/m^3) Exceed Standard (12 µg/m^3 Annual Arithmetic Mean)?	60 Yes	63 Yes	50.7 Yes
Sulfur Dioxide	Maximum 24-hr Concentration (ppm) Days > 0.04 ppm (State 24-hr standard)	0.01 0	0.006 0	0.004 0

SOURCE: SCAQMD, http://www.aqmd.gov/smog/historicaldata.htm, (Appendix B)

[24]Western Regional Climate Center, http:// www.wrrc.dri.edu, accessed July 26, 2007. See Appendix A.



LEGEND: Burbank Monitoring Station

Air Monitoring Areas in Los Angeles County:

1. Central Los Angeles
2. Northwest Coastal
3. Southwest Coastal
4. South Coastal
5. Southeast Los Angeles County
6. West San Fernando Valley
7. East San Fernando Valley
8. West San Gabriel Valley
9. East San Gabriel Valley
10. Pomona/Walnut Valley (not shown)
11. South San Gabriel Valley
12. South Central Los Angeles
13. Santa Clarita Valley
15. San Gabriel Mountains

APPROX. SCALE 0 3.0 6.0 9.0 MILES

SOURCE: South Coast Air Quality Management District Air Monitoring Areas Map, 1999

FIGURE AQ-2

AIR MONITORING AREAS

3.3.4 Background Carbon Monoxide Conditions

CO concentrations are typically used as an indicator of conformity with CAAQS because CO is the primary component of automobile exhaust (tailpipe emissions), and it does not readily react with other pollutants. In other words, operational air quality impacts associated with a project are generally best reflected through estimated changes in CO concentrations.

For purposes of this assessment, the ambient, or background CO concentration, is first established. SCAQMD defines the background level as the highest reading over the past three years. A review of data from the Burbank Monitoring Station for the 2004 to 2006 period indicates that the one- and eight-hour background concentrations are approximately 5 and 3.7 ppm, respectively. Accordingly, the existing one- and eight-hour background concentrations do not exceed the State CO standard of 20 ppm and 9.0 ppm, respectively.

3.3.5 Existing Carbon Monoxide Concentrations at Project Area Intersections

There is a direct relationship between traffic/circulation congestion and CO impacts since exhaust fumes from vehicular traffic are the primary source of CO. CO is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source (intersection) increases. The highest CO concentrations are typically found in areas directly adjacent to congested roadway intersections.

Existing CO concentrations adjacent to nine study intersections were modeled for the weekday and weekend conditions. The study intersections were selected to be representative of the project area and were based on traffic volume to capacity (V/C) ratio and the traffic level of service (LOS) as indicated in the traffic analysis.[25,26]

The selected weekday intersections are as follows:

- Hazeltine Avenue/Riverside Drive - PM Peak Hour
- Hazeltine Avenue/Ventura Boulevard - AM Peak Hour
- Hazeltine Avenue/Magnolia Boulevard - PM Peak Hour
- Woodman Avenue/US-101 Westbound Ramps - PM Peak Hour
- Woodman Avenue/Riverside Drive - PM Peak Hour
- Van Nuys Boulevard/Riverside Drive - PM Peak Hour

The selected weekend intersections are as follows:

- Hazeltine Avenue/Riverside Drive
- Woodman Avenue/Riverside Drive
- Woodman Avenue/US-101 Westbound Ramps

At each intersection, traffic-related CO contributions were added to background CO conditions. Traffic CO contributions were estimated using the USEPA CAL3QHC dispersion model, which utilizes traffic volume inputs and CARB EMFAC2007 emissions factors. Consistent with the California Department of Transportation CO protocol, receptors for the one-hour analysis were

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[25]Level of service is used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion).

[26]Linscott Law & Greenspan Engineers, February 21, 2008. *Traffic Study for the Sherman Oaks Fashion Square Expansion Project.*

located 3 meters (approximately 10 feet) from each intersection corner.[27] Existing weekday and weekend conditions at the study intersections are shown in **Table 3-3** and **Table 3-4**, respectively.

TABLE 3-3: EXISTING CARBON MONOXIDE CONCENTRATIONS - WEEKDAY CONDITIONS /a/		
Intersection	**1-hour**	**8-hour**
Hazeltine Avenue/Riverside Drive	6	4.4
Hazeltine Avenue/Ventura Boulevard	7	4.7
Hazeltine Avenue/Magnolia Boulevard	7	4.5
Woodman Avenue/US-101 Westbound Ramps	6	4.3
Woodman Avenue/Riverside Drive	7	4.6
Van Nuys Boulevard/Riverside Drive	7	4.9
State Standard	**20**	**9.0**

/a/ All concentrations include one- and eight-hour ambient concentrations of 5 ppm and 3.7 ppm, respectively.
SOURCE: TAHA, 2008 (Appendix C)

TABLE 3-4: EXISTING CARBON MONOXIDE CONCENTRATIONS - WEEKEND CONDITIONS /a/		
Intersection	**1-hour**	**8-hour**
Hazeltine Avenue/Riverside Drive	6	4.3
Woodman Avenue/Riverside Drive	7	4.5
Woodman Avenue/US-101 Westbound Ramps	6	4.3
State Standard	**20**	**9.0**

/a/ All concentrations include one- and eight-hour ambient concentrations of 5 ppm and 3.7 ppm, respectively.
SOURCE: TAHA, 2008 (Appendix C)

During the weekday, one-hour CO concentrations range from approximately 6 ppm to 7 ppm and eight-hour CO concentrations range from approximately 4.3 ppm to 4.9 ppm. During the weekend, one-hour CO concentrations range from approximately 6 ppm to 7 ppm and eight-hour CO concentrations range from approximately 4.3 ppm to 4.5 ppm. Presently, none of the study intersections exceed the State one- and eight-hour CO standards of 20 ppm and 9.0 ppm, respectively.

3.3.6 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following groups who are most likely to be affected by air pollution: children under 14, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

[27] Caltrans, *Transportation Project-Level Carbon Monoxide Protocol*, 1997.

As shown in **Figure AQ-3**, sensitive receptors within one-quarter mile (1,320 feet) of the project site include the following:

- Multi-family residences located approximately 120 feet north of the project site, across Riverside Drive

- Single-family residences located approximately 250 feet east of the project site, across Woodman Avenue

- Notre Dame High School located approximately 575 feet northeast of the project site, across Riverside Drive

- Single-family residences located approximately 700 feet west of the project site on Calhoun Avenue and Riverside Drive

- Van Nuys Sherman Oaks Park located approximately 800 feet northeast of the project site, along Hazeltine Avenue

The above sensitive receptors represent the nearest residential, recreational, and school land uses with the potential to be impacted by the proposed project. Additional single-family and multi-family residences are located in the surrounding community within one-quarter mile of the project site.

3.4 METHODOLOGY AND SIGNIFICANCE CRITERIA

3.4.1 Methodology

This air quality analysis is consistent with the methods described in the SCAQMD *CEQA Air Quality Handbook* (1993 edition), as well as the updates to the CEQA Air Quality Handbook, as provided on the SCAQMD website.[28]

Regional and localized construction emissions were analyzed for the proposed project. Construction emissions (i.e., demolition, site preparation, and building construction) were calculated using CARB's URBEMIS2007 model. Regional emissions were compared to SCAQMD regional thresholds to determine project impact significance. The localized construction analysis followed guidelines published by the SCAQMD in the *Localized Significance Methodology for CEQA Evaluations* (SCAQMD Localized Significance Threshold (LST) Guidance Document).[29] In January 2005, the SCAQMD supplemented the SCAQMD LST Guidance Document with *Sample Construction Scenarios for Projects Less than Five Acres in Size*.[30]

URBEMIS2007 was also used to calculate operational emissions (i.e., mobile and area). Localized CO emissions were calculated utilizing USEPA's CAL3QHC dispersion model and CARB's EMFAC2007 model. EMFAC2007 is the latest emission inventory model that calculates emission inventories and emission rates for motor vehicles operating on roads in California. This model reflects the CARB's current understanding of how vehicles travel and how much they pollute. The EMFAC2007 model can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future. CAL3QHC is a model developed by USEPA to predict CO and other pollutant concentrations from motor vehicles at roadway intersections. The

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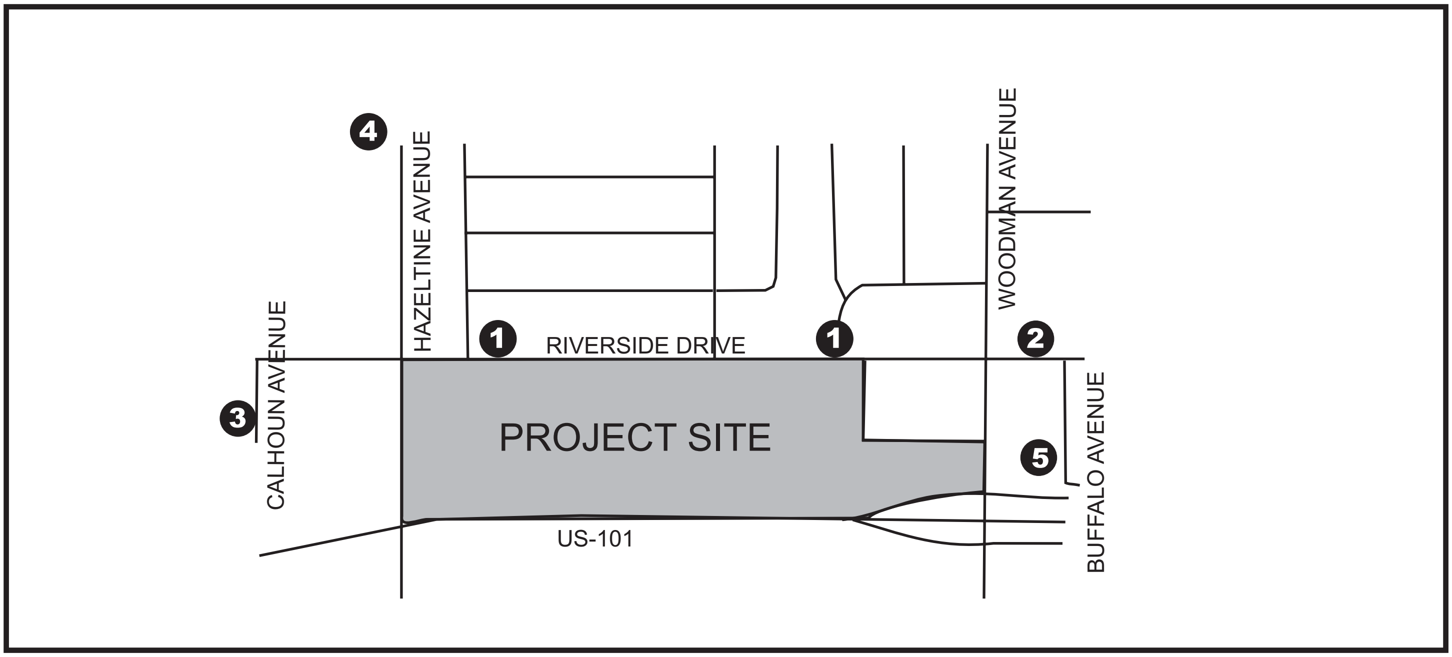
[28]SCAQMD, http://www.aqmd.gov/ceqa/hdbk.html, accessed July 26, 2007.
[29]SCAQMD, *Localized Significance Methodology*, June 2003.
[30]SCAQMD, *Sample Construction Scenarios for Projects Less than Five Acres in Size, January 2005.*



LEGEND:

Air Quality Sensitive Receptors

1. Multi-Family Residence on Riverside Drive
2. Sherman Oaks Notre Dame High School
3. Single-Family Residence on Calhoun Avenue
4. Van Nuys Sherman Oaks Park
5. Single-Family Residence on Buffalo Avenue

NOT TO SCALE

SOURCE: TAHA, 2008

FIGURE AQ-3

AIR QUALITY RECEPTORS

model uses a traffic algorithm for estimating vehicular queue lengths at signalized intersections.[31] The proposed project does not contain lead emissions sources. Therefore, emissions and concentrations related to this pollutant are not analyzed in this report.

3.4.2 Significance Criteria

The following are the significance criteria SCAQMD has established to determine project impacts.

Construction Phase Significance Criteria

The proposed project would have a significant impact if:

- Regional and localized construction emissions exceed SCAQMD construction emissions thresholds for VOC, NO_X, CO, SO_X, $PM_{2.5}$, or PM_{10}, as presented in **Table 3-5**;
- The proposed project would generate significant emissions of toxic air contaminants (TACs); and
- The proposed project would create an odor nuisance.

TABLE 3-5: SCAQMD DAILY CONSTRUCTION EMISSIONS THRESHOLDS

Criteria Pollutant	Regional Emissions (Pounds Per Day)	Localized Emissions (Pounds Per Day) /a/
Volatile Organic Compounds (VOC)	75	--
Nitrogen Oxides (NO_X)	100	176
Carbon Monoxide (CO)	550	553
Sulfur Oxides (SO_X)	150	--
Fine Particulates ($PM_{2.5}$)	55	4
Particulates (PM_{10})	150	6

/a/ The localized significance thresholds were developed using a two-acre project site and a 25-meter (82-foot) receptor distance.
SOURCE: SCAQMD, 2008

Operations Phase Significance Criteria

The proposed project would have a significant impact if:

- Daily operational emissions exceed SCAQMD operational emissions thresholds for VOC, NO_X, CO, SO_X, $PM_{2.5}$, or PM_{10}, as presented in **Table 3-6**;
- Project-related traffic causes CO concentrations at study intersections to violate the CAAQS for either the one- or eight-hour period. The CAAQS for the one- and eight-hour periods are 20 ppm and 9.0 ppm, respectively. If CO concentrations currently exceed the

[31]Prior to 1978, mobile emissions were the primary source of lead resulting in air concentrations. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. Lead emissions are not analyzed in this report since industrial sources are the primary source.

CAAQS, then an incremental increase of 1.0 ppm over "no project" conditions for the one-hour period would be considered a significant impact. An incremental increase of 0.45 ppm over the "no project" conditions for the eight-hour period would be considered significant;[32]

- The proposed project would generate significant emissions of TACs;
- The proposed project would create an odor nuisance; and
- The proposed project would not be consistent with the AQMP.

TABLE 3-6: SCAQMD DAILY OPERATIONAL EMISSIONS THRESHOLDS	
Criteria Pollutant	**Pounds Per Day**
Volatile Organic Compounds (VOC)	55
Nitrogen Oxides (NO_X)	55
Carbon Monoxide (CO)	550
Sulfur Oxides (SO_X)	150
Fine Particulates ($PM_{2.5}$)	55
Particulates (PM_{10})	150
SOURCE: SCAQMD, 2008	

Global Warming Significance Criteria

While Global warming and climate change have received substantial public attention for a number of years, the analytical tools necessary to determine the effect on worldwide global warming from a particular increase in GHG emissions or the resulting effects on climate change in a particular locale are still being developed. Further, the information and data needed to evaluate the impacts that a specific project may have on climate change is still being gathered. Consequently, federal agencies, State agencies and local agencies (such as the SCAQMD), have not developed methodology to determine the significance of project-level impacts on global warming and climate change. Thus, no government agency has established any significance thresholds to assess specific project effects on climate change. The proposed project would result in a significant climate change impact if it would impair or prevent attainment of AB32 or Green LA Action Plan GHG emission reduction goals and strategies.

3.5 ENVIRONMENTAL IMPACTS

3.5.1 Construction Phase

Regional Impacts

Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the project site. Fugitive dust emissions would primarily result from demolition

[32]Consistent with the SCAQMD Regulation XIII definition of a significant impact.

and site preparation (e.g., excavation) activities. NO_X emissions would primarily result from the use of construction equipment. During the finishing phase, paving operations and the application of architectural coatings (e.g., paints) and other building materials would release VOCs. The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions.

It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for Fugitive Dust. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce regional $PM_{2.5}$ and PM_{10} emissions associated with construction activities by approximately 61 percent.

The project would be completed in one phase with three stages. The first stage would include the construction of a new two-level parking structure, (1 at-grade level and 2 above-grade levels) at the eastern edge of the project site. The second stage would include the construction of a new seven-level parking structure, (1 below-grade, 1 at-grade, and 5 above-grade levels) south of the existing Macy's parking lot. The third stage would include construction of the shopping mall and subterranean parking.

Each project construction stage is anticipated to include three primary construction phases during the construction process: demolition of any necessary existing pavement or structures, grading and preparation of the site, and erection of structures. Construction activities would be coordinated and staged to balance space limitations on site, phasing of construction to retain operation of the existing shopping center and appropriate parking during construction, and general construction phasing techniques.

General URBEMIS2007 assumption utilized to calculate Stage 1 construction emissions include a maximum of 22 haul trips per day during demolition and 2.7 acres of disturbed land per day during grading activity. Stagee 2 construction emissions include a maximum of 24 haul trips per day during demolition and 2.34 acres of disturbed land per day during grading activity, and a maximum of 97 haul trips per day during grading activity. Stage 3 construction emissions include a maximum of 25 haul trips per day during demolition, five acres of disturbed land per day during grading activity, and a maximum of 150 haul trips per day during grading activity.

URBEMIS2007 was used to calculate daily construction emissions. **Table 3-7** shows the estimated daily emissions associated with each construction phase. As shown, regional emissions generated by construction activity occurring within the assumptions described above would not exceed the SCAQMD regional significance thresholds for VOC, CO, SO_X, $PM_{2.5}$, or PM_{10}. Daily construction emissions would exceed the SCAQMD regional NO_X emissions threshold and, as such, would result in a significant impact.

Localized Impacts

Emissions for the localized construction air quality analysis of $PM_{2.5}$, PM_{10}, CO, and NO_2 were compiled using LST methodology promulgated by the SCAQMD.[33] Localized on-site emissions were calculated using similar methodology to the regional emission calculations. LSTs were developed based upon the size or total area of the emissions source, the ambient air quality in each source receptor area, and the distance to the sensitive receptor. LSTs for CO and NO_2 were derived by using an air quality dispersion model to back-calculate the emissions per day that would cause or contribute to a violation of any ambient air quality standard for a particular source receptor area. Construction PM_{10} LSTs were derived using a dispersion model to back-calculate the emissions necessary to exceed a concentration equivalent to 50 $\mu g/m^3$ over five hours, which is the SCAQMD Rule 403 control requirement.

Table 3-7 shows the estimated daily localized emissions associated with each construction phase. As shown, daily construction emissions would exceed the SCAQMD localized thresholds for $PM_{2.5}$ and PM_{10} and, as such, localized construction emissions would result in a significant impact.

Toxic Air Contaminant Impacts

The greatest potential for TAC emissions during construction would be diesel particulate emissions associated with heavy equipment operations. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person continuously exposed to concentrations of TACs over a 70-year lifetime will contract cancer based on the use of standard risk assessment methodology. Given the short-term construction schedule of approximately three years, the project would not result in a long-term (i.e., 70 years) source of TAC emissions. No residual emissions and corresponding individual cancer risk are anticipated after construction. As such, project-related construction TAC emission would result in a less-than-significant impact.

TABLE 3-7: ESTIMATED DAILY CONSTRUCTION EMISSIONS - UNMITIGATED

Construction Phase	Pounds Per Day					
	VOC	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$ /a/**	**PM_{10} /a/**
Phase 1 Two-Level Parking Structure						
Demolition						
On-Site	2	13	6	0	5	21
Off-Site	2	24	11	<1	1	1
Total	**4**	**37**	**17**	**<1**	**6**	**22**
Grading/Excavation						
On-Site	2	13	6	0	7	29
Off-Site	<1	<1	1	0	<1	<1
Total	**2**	**13**	**7**	**0**	**7**	**29**

[33]The concentrations of SO_2 are not estimated because construction activities would generate a small amount of SO_X emissions. No State standard exists for VOC. As such, concentrations for VOC were not estimated.

TABLE 3-7: ESTIMATED DAILY CONSTRUCTION EMISSIONS - UNMITIGATED						
	Pounds Per Day					
Construction Phase	**VOC**	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$ /a/**	**PM_{10} /a/**
Construction						
On-Site	4	22	11	0	2	2
Off-Site	1	9	44	<1	<1	<1
Total	**5**	**31**	**55**	**<1**	**2**	**2**
Phase 2 Main Parking Structure						
Demolition						
On-Site	2	13	6	0	5	23
Off-Site	2	26	11	<1	1	2
Total	**4**	**39**	**17**	**<1**	**6**	**24**
Grading/Excavation						
On-Site	3	29	12	0	6	26
Off-Site	6	68	29	<1	3	3
Total	**9**	**97**	**41**	**<1**	**9**	**29**
Building Construction						
On-Site	3	21	11	0	2	2
Off-Site	2	8	41	<1	<1	<1
Total	**5**	**33**	**52**	**<1**	**2**	**2**
Phase 3 Interior Retail and Subterranean Parking						
Demolition						
On-Site	2	12	6	0	6	24
Off-Site	2	26	11	<1	1	1
Total	**4**	**38**	**17**	**<1**	**7**	**25**
Grading/Excavation						
On-Site	3	29	12	0	12	53
Off-Site	9	104	44	<1	4	5
Total	**12**	**133**	**56**	**<1**	**16**	**58**
Building Construction						
On-Site	3	20	11	0	2	2
Off-Site	1	7	38	<1	<1	<1
Total	**4**	**27**	**49**	**<1**	**2**	**2**
Architectural Coating						
On-Site	68	<1	<1	<1	<1	<1
Off-Site	<1	<1	1	<1	<1	<1
Total	**68**	**<1**	**1**	**<1**	**<1**	**<1**

TABLE 3-7: ESTIMATED DAILY CONSTRUCTION EMISSIONS - UNMITIGATED						
	Pounds Per Day					
Construction Phase	**VOC**	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$ /a/**	**PM_{10} /a/**
Maximum Regional Total	**68**	**133**	**56**	**<1**	**16**	**58**
Regional Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceed Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
Maximum On-Site Total	**68**	**29**	**12**	**0**	**12**	**53**
Localized Significance Threshold /b/	**--**	**176**	**553**	**--**	**4**	**6**
Exceed Threshold?	**--**	**No**	**No**	**--**	**Yes**	**Yes**

/a/ URBEMIS2007 emissions for fugitive dust were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403.
/b/ Assumed a two-acre project site and a 25-meter (82-foot) receptor distance. This is the smallest distance between source and receptor to be analyzed under the SCAQMD LST methodology.
SOURCE: TAHA, 2008 (Appendix C)

Odor Impacts

Potential sources that may emit odors during construction activities include equipment exhaust and architectural coatings. Odors from these sources would be localized and generally confined to the project site. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary. As such, proposed project construction would not cause an odor nuisance, and construction odors would result in a less-than-significant impact.

Construction Phase Mitigation Measures

The following mitigation measures shall be implemented for all areas (both on-site and off-site) of construction activity.

AQ1 During construction activity, water or a stabilizing agent shall be applied to exposed surfaces in sufficient quantity to prevent generation of dust plumes.

AQ2 During construction activity, track-out shall not extend 25 feet or more from any active construction operations, and track-out shall be removed at the conclusion of each workday.

AQ3 During construction activity, a wheel washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site.

AQ4 All haul trucks hauling soil, sand, and other loose materials shall maintain at least six inches of freeboard in accordance with California Vehicle Code Section 23114, and such trucks shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).

AQ5 During construction activity, traffic speeds on unpaved roads shall be limited to 15 miles per hour.

AQ6 During construction activity, operations on unpaved surfaces shall be suspended when winds exceed 25 miles per hour.

AQ7 Heavy equipment operations shall be suspended during first and second stage smog alerts.

AQ8 On-site stock piles of debris, dirt, or rusty materials shall be covered or watered at least twice per day.

AQ9 Heavy-duty equipment shall be equipped with a diesel oxidation catalyst capable of reducing NO_x emissions by 40 percent.

AQ10 Contractors shall maintain equipment and vehicle engines in good condition and in proper tune per manufactures' specifications.

AQ11 Contractors shall utilize electricity from power poles rather than temporary diesel or gasoline generators, as feasible.

AQ12 Heavy-duty construction shall be prohibited from idling in excess of five minutes, both on- and off-site, to be consistent with State law.

AQ13 Construction parking shall be configured to minimize traffic interference.

AQ14 Construction activity that affects traffic flow on the arterial system shall be limited to off-peak hours, as feasible.

TABLE 3-8: ESTIMATED DAILY CONSTRUCTION EMISSIONS - MITIGATED

Construction Phase	Pounds Per Day					
	VOC	NO_X	CO	SO_X	$PM_{2.5}$ /a/	PM_{10} /a/
Phase 1 Two-Level Parking Structure						
Demolition						
On-Site	2	10	6	0	5	21
Off-Site	2	25	11	<1	1	1
Total	**4**	**35**	**17**	**<1**	**6**	**22**
Grading/Excavation						
On-Site	2	10	6	0	7	29
Off-Site	<1	<1	1	0	<1	<1
Total	**2**	**10**	**7**	**0**	**7**	**29**
Construction						
On-Site	4	17	11	0	2	2
Off-Site	1	9	44	<1	<1	<1
Total	**5**	**26**	**55**	**<1**	**2**	**2**

TABLE 3-8: ESTIMATED DAILY CONSTRUCTION EMISSIONS - MITIGATED						
	Pounds Per Day					
Construction Phase	**VOC**	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$ /a/**	**PM_{10} /a/**
Phase 2 Main Parking Structure						
Demolition						
On-Site	2	11	6	0	5	23
Off-Site	2	26	11	<1	1	2
Total	**4**	**37**	**17**	**<1**	**6**	**24**
Grading/Excavation						
On-Site	3	22	12	0	6	26
Off-Site	6	68	29	<1	3	3
Total	**9**	**97**	**41**	**<1**	**9**	**29**
Building Construction						
On-Site	3	16	11	0	2	2
Off-Site	2	8	41	<1	<1	<1
Total	**5**	**24**	**52**	**<1**	**2**	**2**
Phase 3 Interior Retail and Subterranean Parking						
Demolition						
On-Site	2	10	6	0	6	24
Off-Site	2	26	11	<1	1	1
Total	**4**	**36**	**17**	**<1**	**7**	**25**
Grading/Excavation						
On-Site	3	24	12	0	12	53
Off-Site	9	104	44	<1	4	5
Total	**12**	**129**	**56**	**<1**	**16**	**58**
Building Construction						
On-Site	3	15	11	0	2	2
Off-Site	1	8	38	<1	<1	<1
Total	**4**	**27**	**49**	**<1**	**2**	**2**
Architectural Coating						
On-Site	68	<1	<1	<1	<1	<1
Off-Site	<1	<1	1	<1	<1	<1
Total	**68**	**<1**	**1**	**<1**	**<1**	**<1**
Maximum Regional Total	**68**	**129**	**56**	**<1**	**16**	**58**
Regional Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceed Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

TABLE 3-8: ESTIMATED DAILY CONSTRUCTION EMISSIONS - MITIGATED						
	Pounds Per Day					
Construction Phase	**VOC**	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$ /a/**	**PM_{10} /a/**
Maximum On-Site Total	**68**	**24**	**12**	**0**	**12**	**53**
Localized Significance Threshold /b/	**--**	**176**	**553**	**--**	**4**	**6**
Exceed Threshold?	**--**	**No**	**No**	**--**	**Yes**	**Yes**

/a/ URBEMIS2007 emissions for fugitive dust were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403.
/b/ Assumed a two-acre project site and a 25-meter (82-foot) receptor distance. This is the smallest distance between source and receptor to be analyzed under the SCAQMD LST methodology.
SOURCE: TAHA, 2008 (Appendix C)

Impacts After Mitigation

Implementation of Mitigation Measures **AQ1** through **AQ8** would ensure that fugitive dust emissions would be reduced by approximately 61 percent. However, localized PM2.5 and PM10 emissions would still exceed the SCAQMD significance thresholds. Mitigation Measures AQ-9 would reduce regional NO_X emissions by at least 40 percent. The other mitigation measures (AQ-10 through AQ-14) although difficult to quantify would also reduce NO_X emissions. As demonstrated in **Table 3-8**, regional construction emissions of VOC, NO_X, CO, SO_X, $PM_{2.5}$, and PM_{10} would be less than the SCAQMD significance thresholds. However, regional NO_X emissions and localized $PM_{2.5}$ and PM_{10} concentrations would exceed the SCAQMD significance thresholds. Therefore, the Expansion Project would have a significant regional and localized construction air quality impact.

3.5.2 Operational Phase

Regional Impacts

Long-term project emissions would be generated by area sources, such as natural gas combustion and consumer products (e.g., aerosol sprays), and mobile sources. Motor vehicle trips generated by the proposed project would be the predominate source of long-term project emissions. According to the traffic report, the proposed project would generate 4,964 net daily vehicle trips during the weekday and 6,252 net daily vehicle trips during the weekend.[34]

Mobile and area source emissions were calculated using URBEMIS2007. A project-specific trip length analysis concluded that the average vehicle miles traveled by a Fashion Square patron is 4.85 per trip. The average trip length was based on a study of existing shopper travel patterns for the Westfield Fashion Square. The objective of the proposed project is to capture more shoppers from the existing service area. As such, the proposed project would not expand the existing market range, and it was assumed that existing average trip length would not change with implementation of the proposed project. The trip length was utilized to determine that the daily weekday vehicle miles traveled would be approximately 24,075 and the daily weekend vehicles miles traveled would be approximately 30,320. The VMT includes a ten percent increase to account for pass-by trips. The default URBEMIS2007 trip length was adjusted to account for the predicted vehicle miles

[34]Linscott, Law, and Greenspan Engineers. *Traffic Study for the Sherman Oaks Fashion Square Expansion Project*, February 21, 2008.

traveled. Weekday and weekend operational emissions are shown in **Table 3-9** and **Table 3-10**, respectively. As shown, regional operational emissions would not exceed SCAQMD significance thresholds and, as such, would result in a less-than-significant impact.

Localized Impacts

CO concentrations in 2012 are expected to be lower than existing conditions due to stringent State and federal mandates for lowering vehicle emissions. Although traffic volumes would be higher in the future both without and with the implementation of the proposed project, CO emissions from mobile sources are expected to be much lower due to technological advances in vehicle emissions systems, as well as from normal turnover in the vehicle fleet. Accordingly, increases in traffic volumes are expected to be offset by increases in cleaner-running cars as a percentage of the entire vehicle fleet on the road.[35] This reduction is accounted for in the EMFAC2007 model and included in the CO analysis.

The State one- and eight-hour CO standards may potentially be exceeded at congested intersections with high traffic volumes. An exceedance of the State CO standards at an intersection is referred to as a CO hotspot. The SCAQMD recommends a CO hotspot evaluation of potential localized CO impacts when V/C ratios are increased by two percent at intersections with a LOS of D or worse. SCAQMD also recommends a CO hotspot evaluation when an intersection decreases in LOS by one level beginning when LOS changes from C to D.

TABLE 3-9: ESTIMATED DAILY OPERATIONS EMISSIONS - WEEKDAY

	Pounds per Day					
Emission Source	**VOC**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Existing Land Use						
Area Sources /a/	<1	8	9	<1	<1	<1
Mobile Sources	106	155	1,148	1	211	41
Total Emissions	**106**	**163**	**1,156**	**1**	**211**	**41**
Proposed Expansion						
Area Sources /a/	<1	11	11	<1	<1	<1
Mobile Sources	128	186	1,377	2	253	49
Total Emissions	**128**	**197**	**1,388**	**2**	**253**	**49**
Net Emissions	**22**	**34**	**232**	**1**	**42**	**8**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceed Threshold?	No	No	No	No	No	No

/a/ Area sources include emissions from natural gas combustion and consumer product (e.g., aerosol sprays).
SOURCE: TAHA, 2008 (Appendix E)

[35] Consistent with CARB's vehicle emissions inventory.

TABLE 3-10: ESTIMATED DAILY OPERATIONS EMISSIONS - WEEKEND						
	Pounds per Day					
Emission Source	**VOC**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
EXISTING LAND USE						
Area Sources /a/	<1	8	8	<1	<1	<1
Mobile Sources	137	202	1,496	1	275	54
Total Emissions	**137**	**210**	**1,504**	**1**	**275**	**54**
PROPOSED EXPANSION						
Area Sources /a/	<1	11	11	<1	<1	<1
Mobile Sources	164	241	1,784	2	328	64
Total Emissions	**164**	**252**	**1,795**	**2**	**328**	**64**
Net Emissions	**27**	**42**	**291**	**1**	**53**	**10**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceed Threshold?	No	No	No	No	No	No

/a/ Area sources include emissions from natural gas combustion and consumer product (e.g., aerosol sprays).
SOURCE: TAHA, 2008 (Appendix E)

Based on the traffic study, the selected weekday intersections are as follows:

- Hazeltine Avenue/Riverside Drive - PM Peak Hour
- Hazeltine Avenue/Ventura Boulevard - AM Peak Hour
- Hazeltine Avenue/Magnolia Boulevard - PM Peak Hour
- Woodman Avenue/US-101 Westbound Ramps - PM Peak Hour
- Woodman Avenue/Riverside Drive - PM Peak Hour
- Van Nuys Boulevard/Riverside Drive - PM Peak Hour

Based on the traffic study, the selected weekend intersections are as follows:

- Hazeltine Avenue/Riverside Drive
- Woodman Avenue/Riverside Drive
- Woodman Avenue/US-101 Westbound Ramps

The USEPA CAL3QHC micro-scale dispersion model was used to calculate CO concentrations for 2012 "no project" and "project" conditions. CO concentrations at the nine study intersections are shown for the AM and PM peak hours in **Tables 3-11** and **3-12**, respectively. As indicated, weekday one-hour CO concentrations under "project" conditions would be approximately 5 ppm at worst-case sidewalk receptors. Weekday eight-hour CO concentrations under "project" conditions would range from approximately 3.2 ppm to 3.5 ppm. Weekend one- and eight-hour CO concentrations under "project" conditions would be approximately 5 and 3.2 ppm, respectively at worst-case sidewalk receptors. The State one- and eight-hour standards of 20 ppm and 9.0 ppm, respectively, would not be exceeded at the analyzed study intersections. Thus, a less-than-significant impact is anticipated. CO is a gas that disperses quickly. Thus, CO concentrations at sensitive receptor locations are expected to be much lower than CO concentrations adjacent to the roadway intersections. Additionally, the intersections were selected based on poor LOS and high traffic volumes. Sensitive receptors that are located away from congested intersections or are located near roadway intersections with better LOS are expected to be exposed to lower CO concentrations. As shown in **Table 3-11** and **Table 3-12**, CO concentrations would not exceed the State one- and eight-hour standards. Thus, no significant increase in CO concentrations at sensitive receptor locations is expected, resulting in a less-than-significant impact.

TABLE 3-11: 2008 AND 2012 CARBON MONOXIDE CONCENTRATIONS - WEEKDAY /a/

Intersection	1-hour (parts per million)			8-hour (parts per million)		
	Existing (2007)	No Project (2012)	Project (2012)	Existing (2007)	No Project (2012)	Project (2012)
Hazeltine Avenue/Riverside Drive	6	5	5	4.4	3.2	3.2
Hazeltine Avenue/Ventura Boulevard	7	5	5	4.7	3.4	3.4
Hazeltine Avenue/Magnolia Boulevard	7	5	5	4.5	3.3	3.3
Woodman Avenue/US-101 Westbound Ramps	6	5	5	4.3	3.2	3.2
Woodman Avenue/Riverside Drive	7	5	5	4.6	3.2	3.3
Van Nuys Boulevard/Riverside Drive	7	5	5	4.9	3.5	3.5
State Standard			**20**			**9.0**

/a/ Existing concentrations include year 2007 one- and eight-hour ambient concentrations of 5 ppm and 3.7 ppm, respectively. No Project and Project concentrations include year 2012 one- and eight-hour ambient concentrations of 4 ppm and 2.6 ppm, respectively.
SOURCE: TAHA, 2008 (Appendix C).

TABLE 3-12: 2007 AND 2012 CARBON MONOXIDE CONCENTRATIONS - WEEKEND /a/

Intersection	1-hour (parts per million)			8-hour (parts per million)		
	Existing (2007)	No Project (2012)	Project (2012)	Existing (2007)	No Project (2012)	Project (2012)
Hazeltine Avenue/Riverside Drive	6	5	5	4.3	3.2	3.2
Woodman Avenue/Riverside Drive	7	5	5	4.5	3.3	3.2
Woodman Avenue/US-101 Westbound Ramps	6	5	5	4.3	3.2	3.2
State Standard			**20**			**9.0**

/a/ Existing concentrations include year 2007 one- and eight-hour ambient concentrations of 5 ppm and 3.7 ppm, respectively. No Project and Project concentrations include year 2012 one- and eight-hour ambient concentrations of 4 ppm and 2.6 ppm, respectively.
SOURCE: TAHA, 2008 (Appendix C)

Toxic Air Contaminant Impacts

The SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulate emissions (e.g., truck stops and warehouse distribution facilities) and has provided guidance for analyzing mobile source diesel emissions.[36] The proposed project would develop commercial uses on the project site. The commercial uses are not anticipated to generate

[36]SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions*, December 2002.

a substantial number of daily truck trips. The primary source of potential TACs associated with proposed project operations is diesel particulate from delivery trucks (e.g., truck traffic on local streets and on-site truck idling). Diesel truck activity associated with the existing loading docks would not change as a result of the proposed project. The number of heavy-duty trucks (e.g., delivery trucks) accessing the project site on a daily basis would be minimal, and the trucks that do visit the site would not idle on-site for over five minutes. Based on the limited activity of the TAC sources, the proposed project would not warrant the need for a health risk assessment associated with on-site activities, and potential TAC impacts would be less than significant. However, mitigation is recommended to limit the potential idling of heavy-duty trucks due to the close proximity of sensitive receptors.

Typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes and automotive repair facilities. The proposed project would not include any of these potential sources, although minimal emissions may result from the use of consumer products (e.g., aerosol sprays). As such, the proposed project would not release substantial amounts of TACs, and no significant impact on human health would occur.

Odor Impacts

According to the SCAQMD *CEQA Air Quality Handbook*, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The project site would be developed with retail space and not land uses that are typically associated with odor complaints. On-site trash receptacles would have the potential to create adverse odors. Trash receptacles would be located and maintained in a manner that promotes odor control and no adverse odor impacts are anticipated from these types of land uses. As such, the proposed project would not cause an odor nuisance, and operational odors would result in a less-than-significant impact.

Operational Phase Mitigation Measures

Operational air quality impacts would be less than significant, and no mitigation measures are required.

Impacts After Mitigation

Not applicable. The project-related operational emissions would result in a less-than-significant impact without mitigation.

3.5.3 Consistency with the Air Quality Management Plan

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's *CEQA Air Quality Handbook*. There are two key indicators of consistency. These indicators are discussed below.

- ***Consistency Criterion No. 1***: *The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.*

  Consistency Criterion No. 1 refers to violations of the CAAQS. CO is the preferred pollutant for assessing local area air quality impacts because it is primarily emitted by motor vehicles, and it does not readily react with other pollutants. Based on methodologies set forth by SCAQMD, one measure to determine whether the proposed project would cause or contribute to a violation of an air quality standard would be based on the estimated CO concentrations at intersections that would be affected by the proposed project. The CO hotspot analysis indicates that the proposed project would not result in an exceedance of the State one- and eight-hour CO concentration standards. Therefore, the proposed project would comply with Consistency Criterion No. 1.

- ***Consistency Criterion No. 2***: *The proposed project will not exceed the assumptions in the AQMP in 2010 or increments based on the year of project build-out phase.*

  The second consistency criterion requires that the proposed project not exceed the assumptions in the AQMP. A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The 2007 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates, in part, SCAG's 2004 Regional Transportation Plan (RTP) socioeconomic forecast projections of regional population and employment growth. The 2004 RTP is based on growth assumptions through 2030 developed by each of the cities and counties in the SCAG region.

  SCAG locates the project site within the Los Angeles City subregion. The proposed project would not include new housing and, as such, would be consistent with the RTP housing and population growth assumptions. The proposed project, which would add 788 employees, represents less than one percent of the 121,694 new employees projected in SCAG's RTP between 2007 and 2012 for the Los Angeles City subregion.[37] Housing, population, and employment growth projected for the proposed project would not exceed the growth forecasts for the Los Angeles subregion as adopted by SCAG. As such, the proposed project is considered to be consistent with growth assumptions included in the AQMP and the proposed project complies with Consistency Criterion No. 2.

  The proposed project complies with Consistency Criteria No. 1 and No. 2. Therefore, the proposed project is consistent with the AQMP.

3.6 CLIMATE CHANGE ANALYSIS

Construction Emissions. Construction activity would generate GHG emissions from construction equipment, delivery/haul truck trips, and construction worker commute trips. CO_2 emissions were obtained from the URBEMIS2007 emissions inventory model[38]. URBEMIS2007 uses emission factors obtained from the CARB's OFFROAD2007 model to calculate construction equipment emissions[39]. URBEMIS2007 does not estimate CH_4 emissions. CH_4 combustion emissions were obtained using a reactive organic compound to CH_4 ratio of 0.0902, which was obtained directly from the CARB's OFFROAD2007 model.[40] Neither the SCAQMD nor OFFROAD2007 provides construction equipment N_2O emission factors. Other models that have been developed to inventory

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[37]Southern California Association of Governments, *Employment Density Study Summary Report*, October 31, 2001.

[38]California Air Resources Board, URBEMIS2007 Emissions Inventory Model, Version 9.2, 2007.

[39]California Air Resources Board, OFFROAD2007 Emissions Inventory Model, Version 2.0.1.2, December 15, 2006.

[40]*Ibid.*

GHG emissions, such as Clean Air and Climate Protection Software[41], Sustainable Communities Model[42], I-PLACS[43], EMFAC2007[44], and Climate Action Registry Reporting On-Line Tool[45], focus on regional energy use and transportation and also do not provide construction equipment N_2O emission factors. As such, N_2O emissions from construction equipment were not estimated by use of those models. However, the N_2O emissions from construction worker commute trips were calculated as a ratio of daily countywide VMT to daily countywide emissions obtained from EMFAC2007. The ratio was utilized to obtain an NO_X emission rate, which was then adjusted to account for an N_2O to NO_X conversion ratio of 0.048.[46] The N_2O emission rate was then multiplied by the VMT to obtain GHG emissions. It was assumed that an average of 60 worker commuter trips would be made every day for the entire construction period. Based on UREBMIS2007, it was also assumed that one-way trips would be 13.3 miles, thus resulting in a VMT of 1,053,360.

Based on this methodology, construction activity would result in CO_2 equivalent levels of approximately 2,415 tons of CO_2 emissions, less than 1 ton of CH_4 carbon dioxide-equivalent emissions, and 24 tons of N_2O carbon dioxide-equivalent emissions. Therefore, a less-than-significant impact on CHG gas emissions is anticipated.

Standard Electricity Generation Emissions. GHG emissions would result from the combustion of fossil fuels to provide energy for the proposed project. Based on information obtained from the Project Applicant, Westfield Fashion Square currently consumes approximately 3,396,325 kilowatt-hours (kWh) per year.[47] This results in approximately 3.92 kWh per square foot per year based on the existing development of 867,000 square feet. The proposed project would include 280,000 square feet of new development, which would use approximately 1,096,852 kWh per year. As such, Westfield Fashion Square and the proposed project would potentially consume approximately 4,493,177 kWh per year.

Implementation of the LEED program would directly reduce project-related energy use. LEED certification results in a minimum energy efficiency savings of approximately 10.5 to 14 percent over California Title 24 Energy Design Standards.[48] This reduction was conservatively applied only to the proposed project. As a result, combined Westfield Fashion Square and proposed project energy use would be reduced to approximately 4,378,008 kWh per year.

Pounds per kWh emission rates for CO_2 of 8.1E-01, CH_4 of 6.7E-06, and N_2O of 3.7E-06 were obtained from the California Climate Action Registry.[49]

Table 3-13 shows electricity consumption-related GHG emissions associated with the proposed project. As shown, Westfield Fashion Square currently generates 1,239 tons per year of CO_2 emissions and the proposed project would generate an additional 400 tons per year. When construction is complete, Westfield Fashion Square and the proposed project would generate 1,639

[41] State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials, International Council for Local Environmental Initiatives, and Torrie Smith Associates, Clean Air and Climate Protection Software, June 2003.

[42] Constructive Technologies Group, Sustainable Communities Model, 2007.

[43] United States Department of Energy, I-PLACE^{3}S, 2007.

[44] CARB, EMFAC2007 Mobile Source Emissions Inventory Model, Version 2.3, November 1, 2006.

[45] California Climate Action Registry, Climate Action Registry Reporting On-Line Tool, 2007.

[46] California Air Resources Board, *N_2O Emission Factors - Estimates of Nitrous Oxide Emissions from Motor Vehicles and the Effects of Catalyst Composition and Aging*, Table 8.2, June 2005.

[47] Based on average energy use in 2005 and 2006.

[48] Leadership in Energy and Environmental Design, *LEED-NC v2.2 – Energy and Atmosphere California Title 24 – 2005 and ASHRAE 90.1*, 2004.

[49] California Climate Action Registry, *General Reporting Protocol*, March 2007.

tons per year of CO_2 emissions. LEED-certified construction would reduce CO_2 emissions to 1,598 tons per year. The proposed project would increase electricity consumption-related emissions of CH_4 by 0.1 tons per year and NO_2 by 0.6 tons per year. LEED-certified construction would reduce CH_4 and N_2O emissions by 0.01 and 0.06 tons per year, respectively.

TABLE 3-13 ANNUAL GREENHOUSE GAS EMISSIONS			
Scenario	**Carbon Equivalent (Tons per year)**		
EXISTING CONDITIONS	**CO_2**	**CH_4**	**N_2O**
Mobile Emissions	22,410	38	688
Electricity Consumption Emissions	1,239	0.22	1.77
Water Consumption Emissions	72	0.013	0.103
Natural Gas Consumption Emissions	1,548	3.63	0.91
CO_2 Equivalent Emissions	25,629	42	691
Total CO_2 Equivalent Emissions	**26,362**		
280,000 SQUARE FOOT EXPANSION			
Mobile Emissions	4,469	8	136
Electricity Consumption Emissions	400	0.10	0.57
Water Consumption Emissions	23	0.004	0.033
Natural Gas Consumption Emissions	431	1.01	0.25
CO_2 Equivalent Emissions	5,323	9	137
TOTAL CO_2 EQUIVALENT EMISSIONS	**5,469**		
PROJECT BASELINE CONDITIONS (EXISTING + EXPANSION)			
Mobile Emissions	26,879	46	824
Electricity Consumption Emissions	1,640	0.29	2.34
Water Consumption Emissions	95	0.017	0.136
Natural Gas Consumption Emissions	1,979	4.64	1.16
CO_2 Equivalent Emissions	30,593	51	828
TOTAL CO_2 EQUIVALENT EMISSIONS	**31,472**		
LEED BASIC CONDITIONS			
Mobile Emissions	26,879	46	824
Electricity Consumption Emissions	1,598	0.28	2.28
Water Consumption Emissions	89	0.015	0.126
Natural Gas Consumption Emissions	1,979	0.221	0.004
CO_2 Equivalent Emissions	30,545	47	826
TOTAL CO_2 EQUIVALENT EMISSIONS	**31,418**		
NET EQUIVALENT EMISSIONS WITH LEED	**5,056**		
SOURCE: TAHA, 2008.			

Water Consumption Emissions. The provision of potable water to commercial consumers requires large amounts of energy associated with source and conveyance, treatment, distribution, end use, and wastewater treatment.[50] Based on information obtained from the Project Applicant, Westfield Fashion Square currently utilizes approximately 5,700 cubic feet of water per day, which is equivalent to 15,563,235 gallons per year (gpy). This results in approximately 17.95 gpy per square foot based on the existing development of 867,000 square feet. The proposed project would include 280,000 square feet of new development, which would use approximately 5,026,189 gpy of water. As such, the proposed project would potentially consume approximately 20,589,424 gpy of water. The California Energy Commission estimates that water usage has an embodied energy of 12,700 kWh per million gallons. Therefore, the proposed project would require approximately 261,486 kWh per year of electricity for water consumption.

Implementation of the LEED program would directly reduce project-related water consumption. The Project Applicant is committed to reducing interior water usage by 20 percent and exterior water usage by 50 percent.[51] This reduction was conservatively applied only to the proposed project. The resulting Westfield Fashion Square water consumption would be 9,800 gpd, or 3,577,000 gallons per year. Therefore, energy use associated with water consumption at the project site would be reduced to approximately 242,783 kWh per year.

Table 3-13 shows water consumption-related GHG emissions associated with the proposed project. As shown, Westfield Fashion Square currently generates 72 tons per year of CO_2 emissions from water consumption and the proposed project would generate an additional 23 tons per year. When construction is complete, Westfield Fashion Square and the proposed project would generate 95 tons per year of CO_2 emissions. LEED-certified construction would reduce CO_2 emissions to 89 tons per year. The proposed project would increase water consumption-related emissions of CH_4 and NO_2 by less than 0.037 tons per year. LEED-certified construction would reduce CH_4 and N_2O emissions by 0.002 and 0.01 tons per year, respectively.

Natural Gas Emissions. Daily operational activity associated with the proposed project would require natural gas consumption. Westfield Fashion Square currently generates a demand for natural gas of approximately 2,443,998 cubic feet per month (CF/month).[52] The proposed retail and restaurant expansion is anticipated to generate a demand for approximately 3,124,094 CF/month, an increase of approximately 680,096 CF/month.[53] These usage rates were converted into million British thermal units per year (kg/mmBTU). Kg/mmBTU emission rates for CO_2 of 52.78, CH_4 of 0.0059, and N_2O of 0.0001 were obtained from the California Climate Action Registry.[54]

Table 3-13 shows natural gas consumption-related GHG emissions associated with the proposed project. As shown, Westfield Fashion Square currently generates 1,548 tons per year of CO_2 emissions from natural gas consumption and the proposed project would generate an additional 431 tons per year. When construction is complete, the Westfield Fashion Square and the proposed project would generate 1,979 tons per year of CO_2 emissions. The proposed project would increase natural gas consumption-related emissions of CH_4 by 1.01 tons per year and NO_2 by 0.25 tons per year. LEED-certified construction would not substantially reduce natural gas consumption CH_4 and N_2O emissions.

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[50]Construction-related water usage would be de minimal when compared to overall water usage and was not factored into the analysis.

[51]Leadership in Energy and Environmental Design, *LEED-NCv2.2 – Registered Project Checklist*, 2007.

[52]SCAQMD, *CEQA Air Quality Handbook*, Table A-9-11-A, 1993. Assumes a natural gas generation rate of 2.9 CF/SF/month for retail and restaurant uses.

[53]*Ibid.*

[54]California Climate Action Registry, *General Reporting Protocol*, March 2007.

Mobile Source Emissions. GHG emissions from mobile sources are a function of vehicle miles traveled (VMT). Based on a zip code analysis, it was determined that the average trip length for mall patrons is 4.85 miles.[55,56] On an annual basis, the existing VMT is 47,730,363 and the 280,000-square-foot project would increase VMT by 9,413,113. Westfield Fashion Square and the proposed project would result in a total VMT of 57,143,476. URBEMIS2007 typically calculates CO_2 emissions based on default VMT values. However, the zip code analysis provided a project-specific VMT. Therefore, URBEMIS2007 was modified to account for the correct VMT.

URBEMIS2007 does not calculate CH_4 and N_2O emissions. The CH_4 emission rate was calculated as a ratio of daily countywide VMT to daily countywide emissions obtained from CARB's EMFAC2007 Mobile Source Emissions Inventory Model.[57] The same ratio methodology was utilized to obtain an NO_X emission rate, which was then adjusted to account for an N_2O to NO_X conversion ratio of 0.048.[58] The CH_4 and N_2O emission rates were multiplied by the existing and future VMT to obtain GHG emissions.

Table 3-13 shows mobile GHG emissions associated with the proposed project. As shown, Westfield Fashion Square currently generates 22,410 tons per year of CO_2 emissions from mobile sources and the proposed project would generate an additional 4,469 tons per year. When construction is complete, Westfield Fashion Square and the proposed project would generate 26,879 tons per year of CO_2 emissions. Westfield Fashion Square currently generates 38 tons per year of CH_4 emissions from mobile sources and the proposed project would generate an additional 8 tons per year. When construction is complete, the Westfield Fashion Square and the proposed project would generate 46 tons per year of CH_4 emissions. Westfield Fashion Square currently generates 688 tons per year of N_2O emissions from mobile sources and the proposed project would generate an additional 136 tons per year. When construction is complete, the Westfield Fashion Square and the proposed project would generate 824 tons per year of N_2O emissions.

Climate Change Discussion. **Table 3-13** shows GHG emissions for the Westfield Fashion Square, the 280,000-square-foot expansion project, existing conditions plus the proposed project, and existing conditions plus the proposed project with LEED certification. As shown, LEED certification would reduce CO_2 equivalent emissions by 54 tons per year. Total CO_2 equivalent emissions would be 31,418 tons per year. It should be noted that approximately 88 percent of GHG emissions would result from mobile sources. Net CO_2 equivalent emissions would be 5,056 tons per year. CARB has calculated total CO_2 equivalent emissions for the State of California a number of years up to 2004.[59] The State emitted 26.56 million metric tons of CO_2 equivalent emissions in 2004. The proposed project would represent less than 0.02 percent of Statewide CO_2 equivalent emissions.

The proposed project is an expansion of an existing retail shopping center, which is intended to capture retail sales and demand in the current trade area of Westfield Fashion Square. Thus, the project has the potential to decrease the amount of GHG emissions resulting from automobile trips associated with retail customers who currently travel longer distances to more distant retail

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[55] Linscott, Law & Greenspan, Engineers, *Westfield Fashion Square Vehicle Miles Traveled Study*, 2007.

[56] The VMT was based on a study of existing shopper travel patterns for the Westfield Fashion Square. The objective of the proposed project is to capture more shoppers from the existing service area. As such, the proposed project would not expand the existing market range and it was assumed that existing average trip length would not change with implementation of the proposed project.

[57] CARB, EMFAC2007 Mobile Source Emissions Inventory Model, Version 2.3, November 1, 2006.

[58] California Air Resources Board, *N_2O Emission Factors - Estimates of Nitrous Oxide Emissions from Motor Vehicles and the Effects of Catalyst Composition and Aging, Table 8.2*, June 2005.

[59] CARB, http://www.arb.ca.gov/cc/ccei/inventory/tables/rpt_inventory_ipcc_sum.pdf, 2007.

businesses. In addition, the other sources of GHG emissions associated with the proposed project (energy, natural gas, and water consumptions) would probably occur if the project is not developed since the demand for the goods and services to be provided at the project site would be provided at another location to satisfy the demands of a growing population. Moreover, the proposed project is not the type of project that would generate a disproportionate amount of vehicle miles traveled or consumption of fuel. In fact, the proposed project includes programs that support greater use of mass transit. For example, the project would provide a shuttle service connecting the site to a nearby Orange Line station (e.g., Van Nuys Boulevard). This service would complement existing transit services (i.e., the LADOT DASH service) such that the shuttle would operate during hours when other public transit services connecting the site to the Orange Line are not available (e.g., evenings during the work week and certain weekend hours). The shuttle would operate during regular shopping center hours corresponding with periods of peak parking demand at the site (i.e., everyday during the holiday shopping period between November 15th and January 1st, and every Saturday/Sunday throughout the year). Consequently, the proposed project would result in a negligible increase in regional and national GHG emissions.

However, in light of the increased accumulation of GHGs in the atmosphere that may result in global climate change, a proposed project's contribution to that potential cumulative effect on climate change should be discussed. As previously discussed, OPR has been tasked with developing CEQA global warming significance thresholds. OPR has indicated that many significant questions must be answered before a consistent, effective, and workable process for completing global warming analyses can be created for use in CEQA documents.[60] OPR has also indicated that there may not be sufficient amount of information or research available to develop significance thresholds.[61] On a local level, the City of Los Angeles has not adopted a global warming significance threshold or addressed the issue in its CEQA Thresholds Guide. Also, no other agency (e.g., United States Environmental Protection Agency, CARB, or SCAQMD) responsible for managing air quality emissions has promulgated a global warming significance threshold that may be used in reviewing new development projects.

In the absence of project-specific significance thresholds established by any State or local air quality management agency, the analysis of potential impacts should focus on compliance with State and local plans aimed at reducing GHG emissions. The California Climate Action Team was formed in response to AB 32. The goal of the California Climate Action Team is to evaluate the impacts of climate change on California and examine adaptation measures that would best prepare the State to respond to adverse consequences of climate change. As shown in **Table 3-14**, the proposed project would be consistent with the applicable GHG reduction measures recommended by the California Climate Action Team to comply with AB 32.[62] As previously discussed, the City has published a Green LA Action Plan. The proposed project would be consistent with the applicable policies and measures discussed in the Green LA Action Plan. Green LA Action Plan policies relevant to the proposed project are also presented in **Table 3-14**. In addition to complying with the applicable elements of these two plans for reducing GHG emissions, the proposed project will also achieve LEED Basic certification. As a result, the proposed project's energy efficiency would be at least 10.5 to 14 percent beyond Title 24 requirements. Thus, the proposed project would actively reduce on going emissions through compliance with a number of GHG emission reduction strategies. Therefore, the proposed project would result in a less-than-significant impact on climate change.

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[60]California Climate Change Portal, California's Climate Change Policy & Climate Action Team, http://www.climatechange.ca.gov/documents/index.html#policy.

[61]*Ibid.*

[62]California Environmental Protection Agency, *Climate Action Team Report*, March 2006.

TABLE 3-14: CALIFORNIA CLIMATE ACTION TEAM REPORT	
GHG REDUCTION STRATEGY /a//b/	**PROJECT CONSISTENCY**
Diesel Anti-Idling – Limit diesel-fueled commercial motor vehicle idling.	Consistent with State law, the proposed project would prohibit diesel-fueled vehicles from idling in excess of five minutes.
Alternative Fuels – Require the use of one to four percent biodiesel displacement in California diesel fuel and increase the ethanol content of diesel fuel.	The proposed project would include transportation amenities, such as providing preferred parking to alternative-fueled vehicles, to encourage the use of alternative fuels.
Achieve 50 Percent Statewide Recycling Goal – Reduce GHG emissions associated with material extraction and production as well as methane emissions from landfills.	The proposed project would include a construction waste management plan that identifies construction materials to be diverted from disposal. The waste management plan would include recycling and/or salvaging at least 50 percent of non-hazardous construction and demolition debris.
Urban Forestry – Plant trees in urban areas.	Landscaping for the proposed project would include the planting of native, drought-resistant trees throughout the project site.
Water Use Efficiency – Conserve water so that GHG emissions are reduced from energy consumption required to convey, treat, distribute, and use water and wastewater.	The proposed project would use high-efficiency irrigation technology or reduce potable water consumption for irrigation by 50 percent. In addition, the proposed project would employ strategies that use 20 percent less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.
Building Energy Efficiency Standards in Place – Place priority on and establish specific goals for updating building energy efficiency standards.	The proposed project will achieve LEED Basic certification. This would result in minimum energy efficiency savings of approximately 10.5 to 14 percent over California Title 24 Energy Design Standards.
Appliance Energy Efficiency Standards in Place – Place priority on updating State appliance energy efficiency standards.	The proposed project will achieve LEED Basic certification. This would result in minimum energy efficiency savings of approximately 10.5 to 14 percent over California Title 24 Energy Design Standards.
Measures to Improve Transportation Energy Efficiency – Provide incentives, tools, and information that advance cleaner transportation and reduce GHG emissions.	The proposed project would include transportation amenities, such as providing preferred parking to alternative-fueled vehicles. The proposed project will be located near public transportation routes and along a heavily traveled vehicle corridor. This would encourage mass transportation thereby potentially reducing regional VMT.
Green Building Initiative – Encourage private building owners and operators to reduce energy use by 20 percent.	LEED Basic certification would reduce energy use by at least 10.5 to 14 percent. In addition, the proposed project would encourage alternative-fueled vehicles, which would also reduce project-related energy use.
GREEN LA ACTION PLAN	
Promote Green Building -Create a comprehensive set of green building guidelines	The proposed project will achieve LEED Basic certification, which would reduce energy use by at least 10.5 to 14 percent. In addition, the proposed project would encourage alternative-fueled vehicles, which would also reduce project-related energy use.

TABLE 3-14: CALIFORNIA CLIMATE ACTION TEAM REPORT	
GHG REDUCTION STRATEGY /a//b/	**PROJECT CONSISTENCY**
Decrease per capita water use -Encourage water conservation and recycling	The proposed project would use high-efficiency irrigation technology or reduce potable water consumption for irrigation by 50 percent. In addition, the proposed project would employ strategies that use 20 percent less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.
Transportation-Promote mass transitreate	The proposed project will be located near public transportation routes and along a heavily traveled vehicle corridor. This would encourage mass transportation(e.g, providing bus shuttles and encouraging car pooling through an on-site Rideshare Coordinator, thereby potentially reducing regional VMT.
Shift waste disposal to resource recovery-Increase Citywide recycling	The proposed project would include a construction waste management plan that identifies construction materials to be diverted from disposal. The waste management plan would include recycling and/or salvaging at least 50 percent of non-hazardous construction and demolition debris.

/a/ California Air Resources Board, *Expanded List of Early Action Measure to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*, September 2007.
/b/ Only GHG reduction strategies applicable to the proposed project are presented.
SOURCE: TAHA, 2008

3.7 CUMULATIVE IMPACTS

The SCAQMD has set forth both a methodological framework and significance thresholds for the assessment of a project's cumulative air quality impacts. SCAQMD's approach is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. This forecast also takes into account SCAG's forecasted future regional growth. As such, the analysis of cumulative impacts focuses on determining whether the proposed project is consistent with forecasted future regional growth.

Based on SCAQMD's methodology, a project would have a significant cumulative air quality impact if the ratio of daily project-related employment vehicle miles traveled to daily countywide vehicle miles traveled exceeds the ratio of project-related employment to countywide employment.[63] None if the related projects in the Expansion Project area require a General Plan Amendment and as a result, these projections are viewed by SCAG and SCAQMD as representing new unanticipated growth. As shown in **Table 3-15**, the proposed project to countywide VMT ratio is not greater than the proposed project to countywide employment ratio.

A localized CO impact analysis was also completed for cumulative traffic (i.e., related projects and ambient growth through 2012). When calculating future traffic impacts, the traffic consultant took 17 additional projects into consideration. Thus, the future traffic results without and with the proposed project already account for the cumulative impacts from these other projects. As shown in **Table 3-11** and **Table 3-12**, the proposed project with cumulative traffic would not violate CO

[63]SCAQMD, *CEQA Air Quality Handbook*, Table A9-14, 1993.

standards at local intersections. As such, the proposed project would not contribute to cumulative air quality impacts.

TABLE 3-15: CUMULATIVE AIR QUALITY ANALYSIS	
Daily Vehicle Miles Traveled For Project Employment /a/	20,961
Daily Vehicle Miles Traveled Countywide /b/	223,514,000
Daily Vehicle Miles Traveled Ratio	**0.000009**
Project Employment /c/	788
Countywide Employment /d/	5,022,215
Employment Ratio	**0.000016**
Significance Test - Daily Vehicle Miles Traveled Ratio Greater Than Employment Ratio	**No**

/a/ Data obtained from URBEMIS 2007.
/b/ Data obtained from EMFAC2007.
/c/ Employment was projected using SCAG's *Employment Density Summary Report*, 2001.
/d/ Data obtained from SCAG's Regional Transportation Plan, Socioeconomic Projections, 2004.
SOURCE: TAHA, 2008

4.0 NOISE & VIBRATION

This section evaluates noise and vibration impacts associated with the implementation of the proposed project. The noise and vibration analysis in this section assesses the following: existing noise and vibration conditions at the project site and its vicinity, as well as short-term construction and long-term operational noise and vibration impacts associated with the proposed project. Mitigation measures for potentially significant impacts are recommended, where appropriate.

4.1 NOISE AND VIBRATION CHARACTERISTICS AND EFFECTS

4.1.1 Noise

Characteristics of Sound

Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The "A-weighted scale," abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA. **Figure N-1** provides examples of A-weighted noise levels from common sounds.

Noise Definitions

This noise analysis discusses sound levels in terms of Community Noise Equivalent Level (CNEL) and Equivalent Noise Level (L_{eq}).

Equivalent Noise Level. L_{eq} is the average noise level on an energy basis for any specific time period. The L_{eq}, if constant over a specified time period, would contain the same sound energy as the actual sound that varies in level with time.

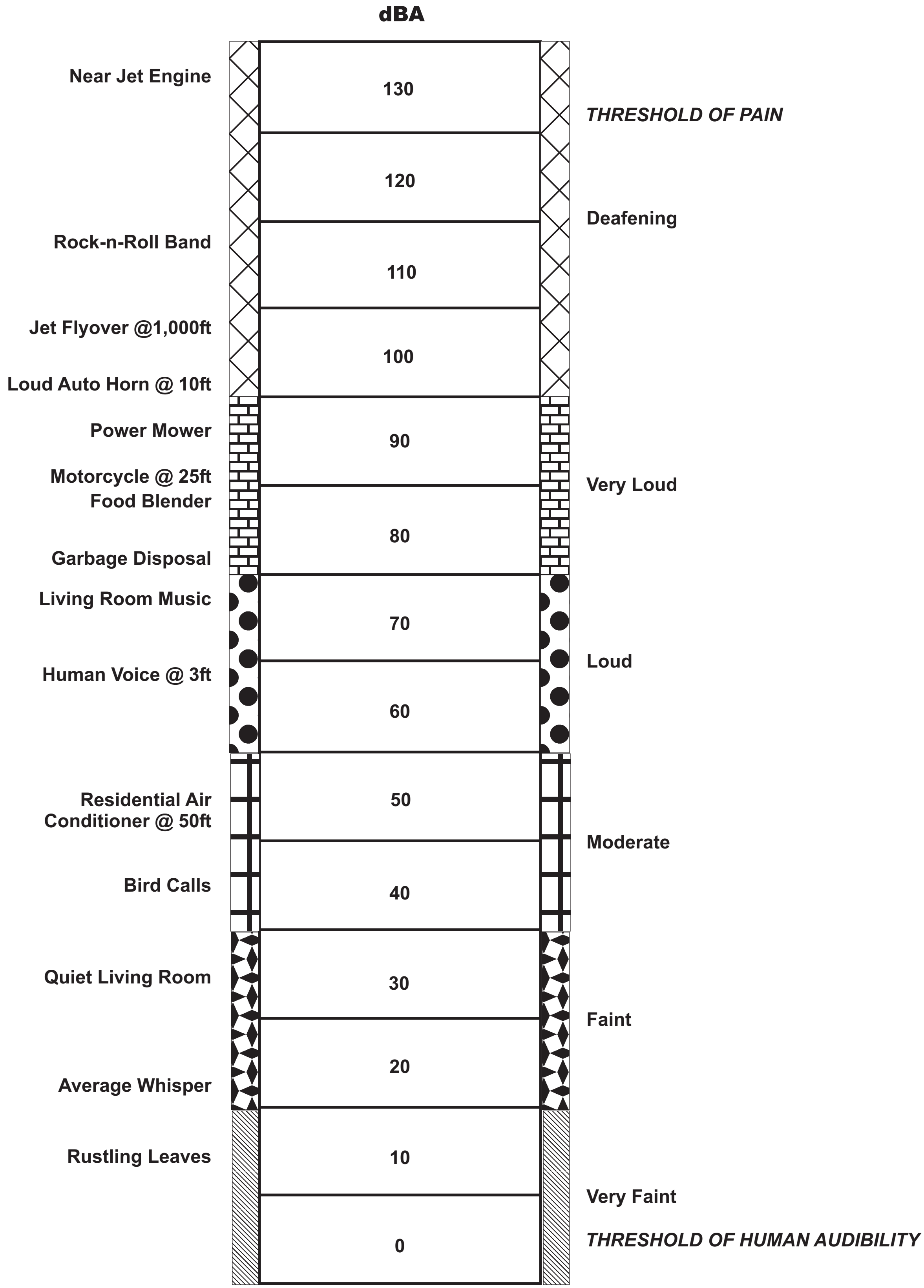
Community Noise Equivalent Level. CNEL is a 24-hour continuous Leq with five dBA added to noise occurring between 7:00 p.m. and 10:00 p.m. and ten dBA added to noise levels occurring between 10:00 p.m. to 7:00 a.m. The added values are used to account for added sensitivity during evening and typical nighttime sleeping hours.

Effects of Noise

Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment range from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, and the nature of work or human activity that is exposed to the noise source.

Audible Noise Changes

Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and would likely evoke a community reaction. A 10 dBA increase is subjectively heard as a doubling in loudness and would cause a community response.



SOURCE: Cowan, James P., *Handbook of Environmental Acoustics*

FIGURE N-1

A-Weighted Decibel Scale

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA over hard surfaces and 7.5 dBA over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet, and so on.

Generally, noise is most audible when traveling by direct line-of-sight.[64] Barriers, such as walls, berms, or buildings, that break the line-of-sight between the source and the receiver greatly reduces noise levels from the source since sound can only reach the receiver by bending over the top of the barrier (diffraction). Sound barriers can reduce sound levels by up to 20 dBA. However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Applicable Regulations

The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise sensitive land uses. Regarding construction, the Los Angeles Municipal Code (LAMC) indicates that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m. the following day, since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment or other place of residence.[65] No person, other than an individual home owner engaged in the repair or construction of his/her single-family dwelling, shall perform any construction or repair work of any kind or perform such work within 500 feet of land so occupied before 8:00 a.m. or after 6:00 p.m. on any Saturday or on a federal holiday, or at any time on any Sunday.

The LAMC also specifies the maximum noise level of powered equipment or powered hand tools.[66] Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise reduction device or techniques during the operation of equipment.

The City of Los Angeles has published the L.A. CEQA Thresholds Guide, which includes significance thresholds for construction and operational noise. For construction noise, the significance thresholds apply if activity occurs within 500 feet of a noise sensitive use or between the hours identified in the Noise Ordinance. For operational noise, the significance thresholds apply if the proposed project introduces a stationary noise source likely to be audible beyond the property line of the project site or if the project includes 75 or more dwelling units, 100,000 square feet or greater of nonresidential development, or has the potential to generate 1,000 or more average daily vehicle trips.

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[64]Line-of-sight is an unobstructed visual path between the noise source and the noise receptor.

[65]LAMC, Chapter IV, Article 1, Section 41.40, January 29, 1984 and Chapter XI, Article 2, Section 112.04, August 8, 1996.

[66]LAMC, Chapter XI, Article 2, Section 112.05, August 8, 1996.

4.1.2 Vibration

Characteristics of Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment.

Vibration Definitions

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV in inches per second is often used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.[67]

Effects of Vibration

High levels of vibration may cause physical personal injury or damage to buildings. However, ground-borne vibration levels rarely affect human health. Instead, most people consider ground-borne vibration to be an annoyance that may affect concentration or disturb sleep. In addition, high levels of ground-borne vibration may damage fragile buildings or interfere with equipment that is highly sensitive to ground-borne vibration (e.g., electron microscopes).

To counter the effects of ground-borne vibration, the Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to ground-borne vibration levels of 0.5 inches per second PPV without experiencing structural damage.[68]

Perceptible Vibration Changes

In contrast to noise, ground-borne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 Vdb RMS or lower, well below the threshold of perception for humans which is around 65 Vdb RMS.[69] Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

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[67] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, April 1995.

[68] Federal Railway Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, December 1998.

[69] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, April 1995.

Applicable Regulations

There are no adopted City standards for ground-borne vibration.

4.2 EXISTING ENVIRONMENTAL SETTING

4.2.1 Existing Noise Environment

The existing noise environment of the project area is characterized by vehicular traffic and noises typical to a dense urban area (e.g., people conversing). Vehicular traffic is the primary source of noise in the project vicinity.

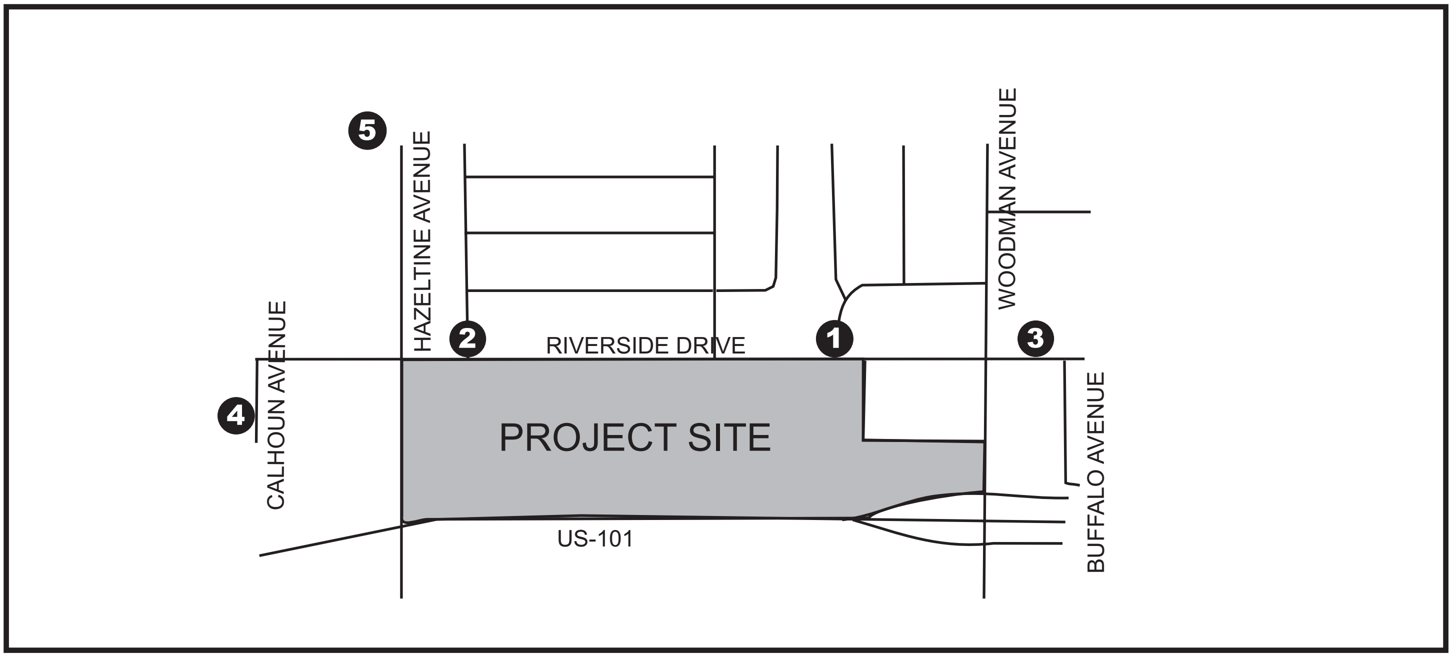
Two sets of ambient sound readings were taken at the project site and the surrounding area using a Quest Q-400 Noise Dosimeter. Noise monitoring was completed along Riverside Drive between 8:45 a.m. and 12:10 p.m. on December 5, 2006. This monitoring period represented the peak season at Westfield Fashion Square and, as such, ambient noise levels in the project vicinity were higher than the typical daily ambient noise level. Noise monitoring was also completed between 11:00 a.m. and 2:30 p.m. on August 15, 2007. This monitoring period represented the off-peak season at the Westfield Fashion Square and, as such, ambient noise levels in the project vicinity were similar to the typical daily ambient noise level.

These readings were used to establish existing ambient noise conditions and to provide a baseline for evaluating construction and operational noise impacts. Noise monitoring locations are shown in **Figure N-2**. As shown in **Table 4-1**, existing ambient sound levels range between 72.0 to 75.7 dBA during the peak season and between 65.5 and 68.4 dBA L_{eq} during the off-peak season.

TABLE 4-1: EXISTING NOISE LEVELS

Key to Figure N-2	Noise Monitoring Location	Duration (Minutes)	Sound Level (dBA, L_{eq}) Time	Peak Season	Time	Off-Peak Season
1	Multi-Family Residence on Riverside Drive	15	9:27 a.m.	75.7	11:53 a.m.	66.2
2	Multi-Family Residence on Riverside Drive	15	9:07 a.m.	72.0	12:15 p.m.	68.3
3	Notre Dame Sherman Oaks High School	15	--	--	11:26 a.m.	67.1
4	Single-Family Residence on Calhoun Avenue and Riverside Drive	15	--	--	1:30 p.m.	65.5
5	Van Nuys Sherman Oaks Park on Hazeltine Avenue	15	--	--	12:55 p.m.	68.4

SOURCE: TAHA, 2008



LEGEND:

Noise Monitoring Locations

1. Multi-Family Residence on Riverside Drive
2. Multi-Family Residence on Riverside Drive
3. Sherman Oaks Notre Dame High School
4. Single-Family Residence on Calhoun Avenue
5. Van Nuys Sherman Oaks Park

NOT TO SCALE

SOURCE: TAHA, 2008

FIGURE N-2

NOISE MONITORING LOCATIONS

4.2.2 Existing Vibration Environment

Similar to the environmental setting for noise, the vibration environment is dominated by traffic from nearby roadways. Heavy trucks can generate ground-borne vibrations that vary depending on vehicle type, weight, and pavement conditions. According to the Federal Transit Administration, heavy-duty vehicles do not typically generate perceptible ground-borne vibration because rubber tires and suspension systems provide vibration isolation on smooth roadways. Roadways surrounding the project site are typical urban roadways and vibration is not perceptible at the project site.

4.2.3 Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise and vibration sensitive and may warrant unique measures for protection from intruding noise. As shown in **Figure AQ-3**, sensitive receptors near the project site include the following:

- Multi-family residences located approximately 120 feet north of the project site, across Riverside Drive
- Single-family residences located approximately 250 feet east of the project site, across Woodman Avenue
- Notre Dame High School located approximately 575 feet northeast of the project site, across Riverside Drive
- Single-family residences located approximately 700 feet west of the project site on Calhoun Avenue and Riverside Drive
- Van Nuys Sherman Oaks Park located approximately 800 feet northeast of the project site, along Hazeltine Avenue

4.2.4 Vehicular Traffic

As stated earlier, vehicular traffic is the predominant noise source in the project vicinity. Using existing traffic volumes (Year 2008) provided by the project traffic consultant and the Federal Highway Administration (FHWA) RD-77-108 noise calculation formulas, CNEL was calculated for various roadway segments near the project site. Existing weekday and weekend mobile noise levels are shown in **Table 4-2** and **Table 4-3**, respectively. As shown in **Table 4-2**, weekday mobile noise levels in the project area range from 71.2 to 74.1 dBA CNEL. As shown in **Table 4-3**, weekend mobile noise levels in the project area range from 70.5 to 73.6 dBA CNEL. Modeled vehicle noise levels are slightly lower than the noise measurements along similar roadway segments as modeled noise levels do not take into account additional noise sources (e.g., pedestrians).

TABLE 4-2: EXISTING ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL - WEEKDAY /a/	
Roadway Segment	**Estimated CNEL dBA /b/**
Riverside Drive between Van Nuys Boulevard and Hazeltine Avenue	71.2
Riverside Drive between Hazeltine Avenue and Woodman Avenue	73.3
Riverside Drive between Woodman Avenue and Sunnyslope Avenue	73.3
Woodman Avenue between Magnolia Boulevard and Riverside Drive	74.1
Woodman Avenue between US-101 Westbound Ramps and Moorpark Street	74.1
Hazeltine Avenue between Fashion Square Lane and Moorpark Street	73.1
Hazeltine Avenue between Magnolia Boulevard Riverside Drive	73.8

/a/ The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation Technical Noise Supplement (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of average daily traffic and a nighttime penalty correction. The peak hour traffic was assumed to be ten percent of the average daily traffic.
/b/ CNEL is presented at the property line of the sensitive receptor nearest to the roadway segment.
SOURCE: TAHA, 2008 (Appendix G)

TABLE 4-3: EXISTING ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL - WEEKEND /a/	
Roadway Segment	**Estimated CNEL dBA /b/**
Riverside Drive between Van Nuys Boulevard and Hazeltine Avenue	70.5
Riverside Drive between Hazeltine Avenue and Woodman Avenue	72.7
Riverside Drive between Woodman Avenue and Sunnyslope Avenue	72.1
Woodman Avenue between Magnolia Boulevard Riverside Drive	73.5
Woodman Avenue between US-101 Westbound Ramps and Moorpark Street	73.6
Hazeltine Avenue between Fashion Square Lane and Moorpark Street	72.3
Hazeltine Avenue between Magnolia Boulevard Riverside Drive	73.0

/a/ The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation Technical Noise Supplement (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of average daily traffic and a nighttime penalty correction. The peak hour traffic was assumed to be ten percent of the average daily traffic.
/b/ CNEL is presented at the property line of the sensitive receptor nearest to the roadway segment.
SOURCE: TAHA, 2008 (Appendix G)

4.3 SIGNIFICANCE CRITERIA

The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise sensitive land uses.

4.3.1 Construction Phase Significance Criteria

A significant construction impact would result if:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA or more at a sensitive receptor;

- Construction activities lasting more than ten days in a three-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a sensitive receptor; or

- Construction activities would exceed the ambient noise level by 5 dBA at a noise receptor between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.

4.3.2 Operational Phase Significant Criteria

A significant operational impact would result if:

- Project-related mobile noise causes the ambient noise level measured at the property line of the affected uses to increase by 3 dBA in CNEL to or within the “normally unacceptable” or “clearly unacceptable” category (**Table 4-4**) or any five decibel or more increase in noise level; or

- Stationary noise sources increase ambient noise levels by 5 dBA or greater.

4.3.3 Ground-borne Vibration Significance Criteria

There are no adopted State or City of Los Angeles ground-borne vibration standards. Based on federal guidelines, the proposed project would result in a significant construction or operational vibration impact if:

- The proposed project would expose buildings to the FRA building damage threshold level of 0.5 inches per second PPV.

4.4 ENVIRONMENTAL IMPACTS

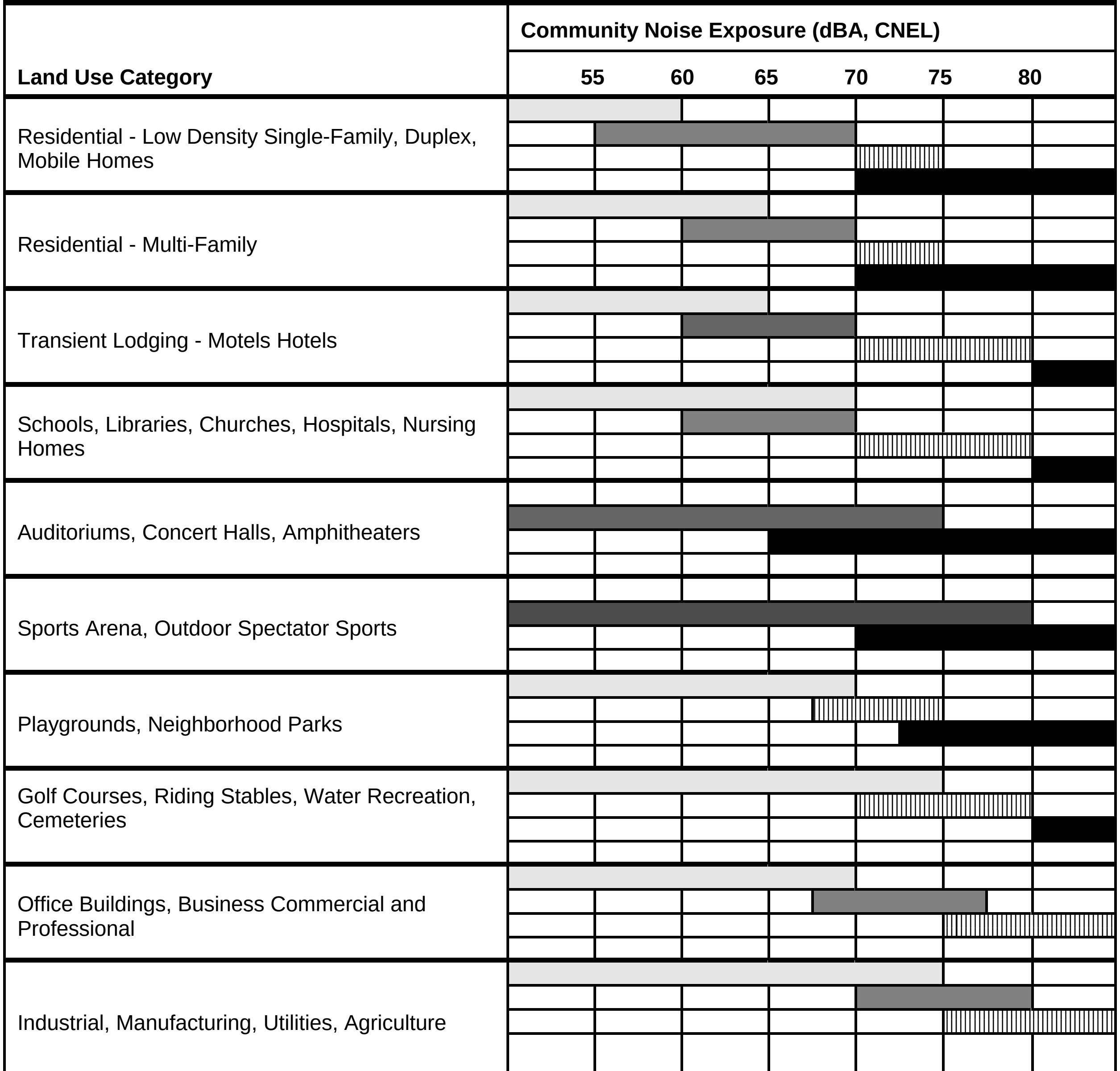
4.4.1 Noise Impacts

Construction Phase Noise Impacts

Construction of the proposed project would result in temporary increases in ambient noise levels in the project area on an intermittent basis. The increase in noise would likely result in a temporary annoyance to nearby residents during construction activity. Noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers.

Construction activities require the use of numerous noise generating equipment, such as jack hammers, pneumatic impact equipment, saws, and tractors. Typical noise levels from various types of equipment that may be used during construction are listed in **Table 4-5**. The table shows noise levels at distances of 50 and 100 feet from the construction noise source.

TABLE 4-4: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditionally will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

SOURCE: California Office of Noise Control, Department of Health Services.

TABLE 4-5: MAXIMUM NOISE LEVELS OF COMMON CONSTRUCTION MACHINES

Noise Source	Noise Level (dBA) /a/	
	50 Feet	100 Feet
Jackhammer	82	76
Steamroller	83	77
Street Paver	80	74
Backhoe	83	77
Street Compressor	67	61
Front-end Loader	79	73
Street Cleaner	70	64
Idling Haul Truck	72	66
Cement Mixer	72	66

/a/ Assumes a six decibel drop-off rate for noise generated by a "point source" and traveling over hard surfaces. Actual measured noise levels of the equipment listed in this table were taken at distances of ten and 30 feet from the noise source.
SOURCE: Cowan, James P., 1994. *Handbook of Environmental Acoustics*.

Whereas **Table 4-5** shows the noise level of each equipment, the noise levels shown in **Table 4-6** take into account the likelihood that more than one piece of construction equipment would be in operation at the same time and lists the typical overall noise levels that would be expected for each phase of construction. These noise levels are based on surveys conducted by the USEPA in the early 1970s. Since 1970, regulations have been enforced to improve noise generated by certain types of construction equipment to meet worker noise exposure standards. However, many older pieces of equipment are still in use. Thus, the construction phase noise levels indicated in **Table 4-6** represent worst-case conditions. As the table shows, the highest noise levels are expected to occur during the grading/excavation and finishing phases of construction. The noise source is assumed to be active for 40 percent of the eight-hour work day (consistent with the EPA studies of construction noise), generating a noise level of 89 dBA at a reference distance of 50 feet.

TABLE 4-6: OUTDOOR CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level At 50 Feet (dBA)
Ground Clearing	84
Grading/Excavation	89
Foundations	78
Structural	85
Finishing	89

SOURCE: City of Los Angeles, *L.A. CEQA Thresholds Guide*, 2006.

The noise level during the construction period at each receptor location was calculated by (1) making a distance adjustment to the construction source sound level and (2) logarithmically adding the adjusted construction noise source level to the ambient noise level. The estimated construction noise levels at sensitive receptors are shown in **Table 4-7**. Noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers.

As shown in **Table 4-7**, construction activity would exceed the 5-dBA incremental increase significance threshold at residential land uses along Riverside Drive during peak and off-peak season. It is important to note that construction activity would occur intermittently during the day and would not occur within noise-sensitive hours (10:00 p.m. to 7:00 a.m.). Regardless, construction noise levels would exceed the 5-dBA incremental increase significance threshold and, as such, would result in a significant impact without implementation of mitigation measures.

The proposed project would utilize sonic pile driving to construct the seven-story parking structure. Pile driving would potentially generate a noise level of 101 dBA Leq. The nearest sensitive receptor would be approximately 400 feet north of pile driving activity. The ambient noise level at this sensitive receptor is approximately 66.2 dBA Leq. At 400 feet, sonic pile driving would generate a maximum noise level of approximately 83 dBA Leq. This noise level would be reduced by 5 dBA to 78 dBA Leq by intervening structures that block the line-of-site between pile driving and the sensitive receptor. When added to the existing ambient noise level, pile driving activity would increase the ambient noise level by approximately 12.1 dBA. This would exceed the 5-dBA Leq incremental increase significance threshold and, as such, pile driving would result in a significant impact without implementation of mitigation measures.

In addition to on-site construction noise, haul trucks would require access to the project site during construction activity. Trucks would likely travel along Riverside Drive to reach the project site. As a result, residential land uses along Riverside Drive would potentially experience increased noise levels from haul trucks. Adding ten truck trips per hour along Riverside Drive would increase the CNEL by approximately 0.2 dBA. This increase would be less than the 3-dBA CNEL incremental increase significance threshold and, as such, haul truck noise would result in a less than significant impact.

Additional sensitive receptors are located north, east, and west of the project site. These sensitive receptors would also experience increase ambient noise level due to construction activity. However, this increase would be less than that presented for the multi-family residences along Riverside Drive due to distance and building attenuation (the multi-family residences along Riverside Drive would act as a sound wall to the residential buildings behind them).

The City of Los Angeles Municipal Code (LAMC) regulates construction noise by limiting activity to the hours identified in the Noise Ordinance. Construction activity associated with the project would comply with the standards established in the Noise Ordinance. All construction activity would be prohibited between the hours of 9:00 p.m. and 7:00 a.m. on weekdays, or between the hours of 6:00 p.m. and 8:00 a.m. on Saturday, Sunday or a public holiday. In general, Saturday construction activity would be limited to low level noise sources (e.g., painting and interior improvements).

TABLE 4-7: CONSTRUCTION NOISE IMPACT - UNMITIGATED						
Key To Figure N-2	**Distance (feet) /a/**	**Maximum Construction Noise Level (dBA, L_{eq}) /b/**	**Existing Ambient (dBA, L_{eq}) /c/**	**New Ambient (dBA, L_{eq}) /d/**	**Increase**	**Impact**
Off-Peak Season at Westfield Fashion Square						
1. Multi-Family Residence on Riverside Drive	120	81.4	66.2	81.5	15.3	Yes
2. Multi-Family Residence on Riverside Drive	120	81.4	68.3	81.6	13.3	Yes
3. Notre Dame Sherman Oaks High School	575	67.8	67.1	71.9	3.4	No
4. Single Family Residence on Calhoun Avenue and Riverside Drive	750	65.5	65.5	68.5	3.0	No
5. Van Nuys Sherman Oaks Park on Hazeltine Avenue	800	65.0	68.4	70.0	1.6	No
Peak Season at Westfield Fashion Square						
1. Multi-Family Residence on Riverside Drive	120	81.4	69.3	81.7	12.4	Yes
2. Multi-Family Residence on Riverside Drive	120	81.4	70.3	81.7	11.4	Yes

/a/ Distance of noise source from receptor.
/b/ Construction noise source's sound level at receptor location, with distance and building adjustment.
/c/ Pre-construction activity ambient sound level at receptor location.
/d/ New sound level at receptor location during the construction period, including noise from construction activity.
/e/ An incremental noise level increase of five dBA or more would result in a significant impact.
SOURCE: TAHA, 2008.

The noise limitation of the LAMC does not apply where compliance is technically infeasible.[70] "Technically infeasible" means that the noise standard cannot be met despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during the operation of equipment. For example, it would not be feasible to utilize a five-story sound blanket to reduce construction noise levels. Freestanding sound blankets cannot extend to five stories and hanging a sound blanket off the side of the proposed building would interfere with construction activity.

Construction Phase Noise Mitigation Measures

N1 All construction equipment shall be equipped with mufflers and other suitable noise attenuation devices.

N2 Grading and construction contractors shall use quieter equipment as opposed to noisier equipment (such as rubber-tired equipment rather than track equipment).

N3 Equipment staging areas shall be located on the southern portion of the project site, as far away as possible from multi-family residences on Riverside Drive.

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[70] *LAMC, Chapter IX, Article 2, Section 122.05.*

N4 During building construction, a sound barrier capable of achieving sound attenuation of at least 10 dBA (e.g., sound attenuation blanket) shall be constructed, such that the line of sight is blocked from active construction areas to residential land uses on Riverside Drive.

N5 Construction workers shall be required to park at designated locations and shall be prohibited from parking on nearby residential streets.

N6 Pile drivers shall be shrouded with acoustically absorptive shields capable of reducing noise by at least 9 dBA at all times during pile driving operations.

N7 Pile driving activity shall be scheduled for times that have the least impact on adjacent sensitive receptors.

N8 All residential units located within 750 feet of the construction site shall be sent a notice regarding the construction schedule of the proposed project. A sign, legible at a distance of 50 feet shall also be posted at the construction site. All notices and signs shall indicate the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints..

N9 A "noise disturbance coordinator" shall be established. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would be required to implement reasonable measures such that the complaint is resolved. All notices that are sent to residential units within 500 feet of the construction site and all signs, legible at a distance of 50 feet, posted at the construction site shall list the telephone number for the disturbance coordinator.

Impacts After Mitigation

Mitigation Measure **N1** would reduce construction noise levels by 3 dBA, and Mitigation Measure **N4** would reduce construction noise levels by approximately 10 dBA. The noise disturbance coordinator (Mitigation Measure **N9**) would ensure that noise complaints would be resolved. The other mitigation measures (**N2**, **N3**, and **N8**) would assist in attenuating construction noise levels. Mitigation Measures **N6**, and **N7** would reduce pile driving noise by at least 9 dBA. The resulting incremental increase in ambient noise levels due to pile driving at the nearest sensitive receptor would be 4.6 dBA. **Table 4-8** shows the construction noise impacts with 13 dBA of noise level reduction from Mitigation Measures **N1** and **N4**. As shown in **Table 4-8**, the construction noise level increase with mitigation at the multi-family residences on Riverside Drive would be less than 5-dBA threshold. As such, construction noise would result in a less-than-significant impact with mitigation incorporated.

Operational Phase Noise Impacts

Vehicular Noise. The predominant noise source for the proposed project is vehicular traffic. According to the traffic report prepared by Linscott, Law, and Greenspan Engineers, the proposed project would generate 4,964 weekday daily vehicle trips and 6,252 weekend daily vehicle trips.[24]

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[24]Linscott, Law, and Greenspan Engineers. *Traffic Study for the Sherman Oaks Fashion Square Expansion Project*, February 2008.

TABLE 4-8: CONSTRUCTION NOISE IMPACT - MITIGATED						
Key To Figure N-2	**Distance (feet) /a/**	**Maximum Construction Noise Level (dBA, L_{eq}) /b/**	**Existing Ambient (dBA, L_{eq}) /c/**	**New Ambient (dBA, L_{eq}) /d/**	**Increase**	**Impact**
Off-Peak Season at Westfield Fashion Square						
1. Multi-Family Residence on Riverside Drive	120	69.4	66.2	71.1	4.9	No
2. Multi-Family Residence on Riverside Drive	120	69.4	68.3	70.5	3.6	No
3. Notre Dame Sherman Oaks High School	575	64.8	67.1	69.1	2.0	No
4. Single Family Residence on Calhoun Avenue and Riverside Drive	750	62.5	65.5	67.3	1.8	No
5. Van Nuys Sherman Oaks Park on Hazeltine Avenue	800	61.9	68.4	69.3	0.9	No
Peak Season at Westfield Fashion Square						
1. Multi-Family Residence on Riverside Drive	120	69.4	69.3	72.4	3.1	No
2. Multi-Family Residence on Riverside Drive	120	69.4	70.3	72.9	2.6	No

/a/ Distance of noise source from receptor.
/b/ Construction noise source's sound level at receptor location, with distance and building adjustment.
/c/ Pre-construction activity ambient sound level at receptor location.
/d/ New sound level at receptor location during the construction period, including noise from construction activity.
/e/ An incremental noise level increase of five dBA or more would result in a significant impact.
SOURCE: TAHA, 2008

To ascertain off-site noise impacts, traffic was modeled under future year (2012) no project and with project conditions utilizing FHWA RD-77-108 noise calculation formulas. Results of the weekday analysis are summarized in **Table 4-9**. The greatest weekday project-related noise increase would be 0.4 dBA CNEL and would occur along Riverside Drive between Hazeltine and Woodman Avenues. Weekday roadway noise levels attributed to the proposed project would increase by less than 3- dBA (CNEL) at all analyzed segments.

TABLE 4-9: 2007 AND 2012 ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL - WEEKDAY/a/

Roadway Segment	Estimated dBA, CNEL /b/				
	Existing (2007)	**No Project (2012)**	**Project (2012)**	**Project Impact**	**Cumulative Impact**
Riverside Drive between Hazeltine and Woodman Avenues	73.3	73.9	74.3	0.4	1.0
Riverside Drive between Van Nuys Boulevard and Hazeltine Avenue	71.2	71.7	71.9	0.2	0.7
Riverside Drive between Sunnyslope and Woodman Avenues	73.3	74.2	74.2	0.0	0.9
Woodman Avenue between Magnolia Boulevard and Riverside Drive	74.1	74.5	74.6	0.1	0.5
Woodman Avenue between 101 Freeway Westbound Ramp and Moorpark Street	74.1	74.7	74.7	0.0	0.6
Hazeltine Avenue between Fashion Square Lane and Moorpark Street	73.1	73.6	73.7	0.1	0.6
Hazeltine Avenue between Magnolia Boulevard and Riverside Drive	73.8	74.3	74.5	0.2	0.7

/a/ The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation *Technical Noise Supplement* (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of average daily traffic and a nighttime penalty correction. The peak hour traffic was assumed to be ten percent of the average daily traffic.
/b/ CNEL is presented at the property line of the sensitive receptor nearest to the roadway segment.
SOURCE: TAHA, 2008 (Appendix G)

Results of the weekend analysis are summarized in **Table 4-10**. The greatest project-related noise increase would be 0.5 dBA CNEL and would also occur along Riverside Drive between Hazeltine and Woodman Avenues. Weekend roadway noise levels attributed to the proposed project would increase by less than 3-dBA CNEL at all analyzed segments.

Mobile noise generated by the proposed project would not cause the ambient noise level measured at the property line of the affected uses to increase by 3 decibels CNEL to or within the “normally unacceptable” or “clearly unacceptable” category (**Table 4-4**) or any 5 decibel or more increase in noise level. The proposed project would result in a less-than-significant mobile noise impact.

TABLE 4-10: 2007 AND 2012 ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL - WEEKEND/a/

Roadway Segment	Estimated dBA, CNEL /b/				
	Existing (2007)	No Project (2012)	Project (2012)	Project Impact	Cumulative Impact
Riverside Drive between Hazeltine and Woodman Avenues	72.7	73.3	73.8	0.5	1.1
Riverside Drive between Van Nuys Boulevard and Hazeltine Avenue	70.5	71.2	71.5	0.3	1.0
Riverside Drive between Sunnyslope and Woodman Avenues	72.1	72.9	73.1	0.2	1.0
Woodman Avenue between Magnolia Boulevard and Riverside Drive	73.5	74.1	74.2	0.1	0.7
Woodman Avenue between 101 Freeway Westbound Ramp and Moorpark Street	73.6	74.3	74.4	0.1	0.8
Hazeltine Avenue between Fashion Square Lane and Moorpark Street	72.3	72.8	73.0	0.2	0.7
Hazeltine Avenue between Magnolia Boulevard and Riverside Drive	73.0	73.6	73.8	0.2	0.8

/a/ The predicted CNEL were calculated as peak hour L_{eq} and converted into CNEL using the California Department of Transportation *Technical Noise Supplement* (October 1998). The conversion involved making a correction for peak hour traffic volumes as a percentage of ADT and a nighttime penalty correction. The peak hour traffic was assumed to be ten percent of the average daily traffic.
/b/ CNEL is presented at the property line of the sensitive receptor nearest to the roadway segment.
SOURCE: TAHA, 2008 (Appendix G)

Non-Vehicular Noise. Potential stationary noise sources related to the long-term operations of the proposed project includes mechanical equipment (e.g., parking structure air vents and heating, ventilation, and air conditioning (HVAC) equipment.) Mechanical equipment would be designed so as to be located within an enclosure or confined to the rooftop of the proposed structure. In addition, mechanical equipment would be screened from view as necessary to comply with the City of Los Angeles Noise Ordinance requirements for both daytime (50 dBA) and nighttime (40 dBA) noise levels at residential land uses. Operation of mechanical equipment would not be anticipated to increase ambient noise levels by 5 dBA or more. Stationary noise would result in a less-than-significant impact.

Project-related parking would include a subterranean parking structure, a two-level parking structure located off of Woodman Avenue at the eastern end of the project site, and a seven-level parking structure south of the Macy's parking structure. Noise generated by activity associated with the subterranean parking structure would not be audible off the project site and would not increase ambient noise levels.

The two-level parking structure would be located off of Woodman Avenue at the eastern end of the project site. This area is currently utilized for surface parking. The nearest sensitive receptors to the parking structure would be located approximately 250 feet east of the project site. Noise sources associated with the parking structure include vehicle movement, slamming doors, and car alarms. Parking activity typically generates a noise level of 63 dBA Leq at 50 feet, including rooftop noise. Based on distance attenuation, the parking-related noise levels would be approximately 52.5 dBA Leq. Mobile-source related noise levels are approximately 73.2 dBA along Woodman Avenue, North of Highway 101. When added to this noise level, parking-related noise would increase the ambient noise level by less than 0.1 dBA. This level is less than the 5-dBA significance threshold, which would result in a less than significant impact.

The proposed project would include a seven-level parking structure located south of the Macy's parking lot. This parking structure would be located approximately 400 feet south of the nearest sensitive receptor (i.e. residences on Riverside Drive). As shown in **Table 4-1**, the monitored noise levels along the portion of Riverside Drive in front of the residential land use are 66.2 and 68.3 dBA L_{eq}. Adding parking-related noise (i.e., 63 dBA L_{eq}) to the existing noise level along Riverside Drive would increase the existing noise levels byless than 0.1 dBA. This is less than the 5-dBA significance threshold and, as such, parking activity noise would not significantly impact sensitive receptors north of the project site.

The proposed project would increase vehicle access to the project site. The current vehicular traffic on Riverside Drive, Hazeltine Avenue, Woodman Avenue and the nearby US-101generates the majority of the ambient noise in the project area. Under the proposed project access scheme, vehicles would enter/exit the new parking structure at a new signalized driveway with direct access to the structure. This access would be located at the existing driveway between Macy's and Woodman Avenue. There will be a dual turn lane for westbound traffic as well as a dedicated right-turn lane for eastbound traffic. The driveway will consist of three outbound lanes and two inbound lanes. Five cars occupying each access lane and traveling at 25 miles per hour would produce a cumulative noise level of 67.0 dBA L_{eq} at 50 feet. The nearest sensitive receptor to the new access point is located 120 feet to the north. Based on distance attenuation and the existing ambient noise level at the nearest sensitive receptor, the resulting noise level would be 68.1 dBA L_{eq}. This would be an increase of 1.9 dBA. This level is less than the 5-dBA significance threshold, which would result in a less-than-significant impact.

The proposed project would change the hours of operation from 7:00 a.m. to 11:00 p.m. to 5:30 a.m. to 12:00 a.m. According to the traffic analysis, the shared parking demand at 6:00 a.m. and 12:00 a.m. would be 110 and 32 vehicles, respectively. A doubling of traffic volumes is typically needed to audibly increase ambient noise levels. The extended hours of operation would not double traffic volumes along any roadway segment. The increase in ambient noise levels would be less than the 5-dBA significance threshold, which would result in a less than significant parking and circulation impact.

Two existing loading docks are located along Riverside Drive. These loading docks would continue to operate between the same hours and under their existing parameters (approximately two large trucks operating simultaneously on a daily basis). The proposed project would include construction of two new loading docks on the south side of the property to accommodate expanded retail and restaurant uses. This loading dock would be shielded from sensitive receptors by mall structures. The structures would act as a noise barrier and would prevent audible noise increases at sensitive receptors from the proposed loading dock. The proposed project would not result in additional noise sources due to the operation of the loading dock. Operational noise levels would not change substantially along the Riverside Drive frontage. Therefore, the proposed project would result in a less-than-significant operational noise impact due to loading dock operations.

Operational Phase Noise Mitigation Measures

Operational noise impacts would be less than significant, and no mitigation measures are required.

Impacts After Mitigation

Not applicable. The project-related operational noise would result in a less-than-significant impact without mitigation.

4.4.2 Ground-borne Vibration Impacts

Construction Phase Ground-borne Vibration Impacts

As shown in **Table 4-11**, use of heavy equipment (e.g., a sonic pile driver) generates vibration levels of 0.170 inches per second PPV at a distance of 25 feet. The nearest structure to pile driving activity would be approximately 50 feet east of the project site and could experience vibration levels of 0.06 inches per second PPV. Vibration levels would not exceed the potential building damage thresholds of 0.5 inches per second PPV. Construction activity associated with the proposed project would comply with the standards established in the Noise Ordinance. Construction activity would be prohibited between the hours of 9:00 p.m. and 7:00 a.m. on weekdays, or between the hours of 6:00 p.m. and 8:00 a.m. on Saturday, Sunday, or public holiday. As such, construction-related vibration associated with the proposed project would result in a less-than-significant impact.

Construction Phase Ground-borne Vibration Mitigation Measures

Construction phase ground-borne vibration impacts would be less than significant, and no mitigation measures are required.

Impacts After Mitigation

Not applicable. Construction phase ground-borne vibration impacts would result in a less-than-significant impact without mitigation.

TABLE 4-11: VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 feet (Inches /Second) /a/
Sonic Pile Driver	0.170
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076

/a/ Fragile buildings can be exposed to ground-borne vibration levels of 0.5 inches per second PPV without experiencing structural damage.
SOURCE: Federal Transit Authority, April 1995. *Transit Noise and Vibration Impact Assessment*.

Operational Phase Ground-borne Vibration Impacts

The proposed project would not include significant stationary sources of ground-borne vibration, such as heavy equipment operations. Operational ground-borne vibration in the project vicinity would be generated by vehicular travel on the local roadways. However, similar to existing conditions, traffic-related vibration levels would not be perceptible by sensitive receptors. Thus, operational vibration would result in a less-than-significant impact.

Operational Phase Ground-borne Vibration Mitigation Measures

Operational ground-borne vibration impacts would be less than significant, and no mitigation measures are required.

Impacts After Mitigation

The project-related operational ground-borne vibration would result in a less-than-significant impact.

4.5 Cumulative Impacts

Due to the distance between the Expansion Project and the nearest related project, approximately 1,000 feet north of the site, no cumulative noise impacts are anticipated.

When calculating future traffic impacts, the traffic study took 17 additional projects into consideration. Thus, the future traffic results without and with the proposed project already account for the cumulative impacts from these other projects. Since the noise impacts are generated directly from the traffic analysis results, the future without project and future with project noise impacts described in this report already reflect cumulative impacts.

Tables 4-9 and **4-10** present the cumulative increase in future traffic noise levels at various intersections (i.e., 2012 “No Project “conditions plus proposed project traffic) for the weekday and weekend conditions, respectively. On weekdays, the maximum cumulative roadway noise increase would be 1.0 dBA CNEL and would occur along Riverside Drive between Woodman and Hazeltine Avenues. As such, cumulative weekday roadway noise levels would not exceed the 3-dBA threshold increment and would not result in a perceptible change in noise level. Therefore, the proposed project would not result in a cumulatively considerable impact with respect to roadway noise.

On weekends, the maximum cumulative roadway noise increase would be 1.1 dBA CNEL and would occur along Riverside Drive between Woodman Avenue and Van Nuys Boulevard. As such, cumulative weekday roadway noise levels would not exceed the 3-dBA threshold increment and would not result in a perceptible change in noise level. Therefore, the proposed project would not result in a cumulatively considerable impact with respect to roadway noise, and mobile noise would result in a less-than-significant impact.

The predominant vibration source near the project site is heavy trucks traveling on the local roadways. Neither the project nor related projects would substantially increase heavy-duty vehicle traffic near the project site and would not cause a substantial increase in heavy-duty trucks on local roadways. As such, the proposed project would not result in a cumulatively considerable vibration impact.

Appendix A

Wind and Climate Information

BURBANK VALLEY PUMP PLA, CALIFORNIA

Period of Record General Climate Summary - Temperature

Station:(041194) BURBANK VALLEY PUMP PLA															
From Year=1939 To Year=2007															
	Monthly Averages			Daily Extremes				Monthly Extremes				Max. Temp.		Min. Temp.	
	Max.	Min.	Mean	High	Date	Low	Date	Highest Mean	Year	Lowest Mean	Year	>= 90 F	<= 32 F	<= 32 F	<= 0 F
	F	F	F	F	dd/yyyy or yyyymmdd	F	dd/yyyy or yyyymmdd	F	-	F	-	# Days	# Days	# Days	# Days
January	67.3	41.6	54.4	93	31/2003	22	29/1979	63.4	2003	45.1	1949	0.1	0.0	1.7	0.0
February	68.8	43.6	56.2	92	16/1977	27	15/1942	61.9	1954	50.7	1949	0.2	0.0	0.5	0.0
March	70.5	45.7	58.1	98	26/1988	22	07/1980	64.5	2004	52.7	1952	0.4	0.0	0.4	0.0
April	73.8	49.0	61.4	105	06/1989	32	05/1978	68.1	1989	53.4	1967	1.6	0.0	0.0	0.0
May	76.7	53.5	65.1	107	29/1984	39	21/1975	71.8	1984	60.6	1998	2.3	0.0	0.0	0.0
June	81.6	57.2	69.4	111	27/1976	43	14/1943	77.7	1981	64.0	1944	4.8	0.0	0.0	0.0
July	88.6	61.1	74.8	110	22/2006	45	02/1979	80.5	2006	69.0	1944	13.8	0.0	0.0	0.0
August	89.1	61.3	75.2	111	26/1944	46	28/1975	80.4	1994	71.7	1948	14.6	0.0	0.0	0.0
September	87.2	59.1	73.2	113	12/1971	43	26/1941	81.4	1984	67.3	1986	11.8	0.0	0.0	0.0
October	80.9	53.3	67.1	108	01/1980	33	30/1971	72.3	1991	62.7	2002	5.9	0.0	0.0	0.0
November	73.6	45.9	59.8	98	03/1976	29	30/1975	65.0	1949	54.0	1994	1.0	0.0	0.2	0.0
December	68.1	41.7	54.9	92	03/1958	22	08/1978	59.6	1958	49.3	1971	0.0	0.0	1.3	0.0
Annual	77.2	51.1	64.1	113	19710912	22	19781208	66.7	1984	61.9	1944	56.6	0.0	4.2	0.0
Winter	68.1	42.3	55.2	93	20030131	22	19781208	59.1	1981	48.6	1949	0.3	0.0	3.6	0.0
Spring	73.6	49.4	61.5	107	19840529	22	19800307	66.1	1993	58.2	1999	4.4	0.0	0.4	0.0
Summer	86.4	59.9	73.1	111	19440826	43	19430614	77.3	1981	69.1	1944	33.1	0.0	0.0	0.0
Fall	80.6	52.8	66.7	113	19710912	29	19751130	70.2	1991	63.9	1973	18.7	0.0	0.2	0.0

Table updated on Sep 17, 2007
For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons

Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

Western Regional Climate Center, wrcc@dri.edu

BURBANK VALLEY PUMP PLA, CALIFORNIA

Period of Record General Climate Summary - Precipitation

Station:(041194) BURBANK VALLEY PUMP PLA														
From Year=1939 To Year=2007														
	Precipitation											Total Snowfall		
	Mean	High	Year	Low	Year	1 Day Max.		>= 0.01 in.	>= 0.10 in.	>= 0.50 in.	>= 1.00 in.	Mean	High	Year
	in.	in.	-	in.	-	in.	dd/yyyy or yyyymmdd	# Days	# Days	# Days	# Days	in.	in.	-
January	3.33	15.92	1995	0.00	1948	7.76	22/1943	6	4	2	1	0.1	4.7	1949
February	3.91	15.52	1998	0.00	1964	4.50	08/1993	6	4	2	1	0.0	0.0	1940
March	2.87	12.87	1978	0.00	1956	5.45	01/1983	6	4	2	1	0.0	0.5	1950
April	1.19	5.66	1965	0.00	1962	2.30	12/1956	4	2	1	0	0.0	0.0	1940
May	0.28	4.37	1998	0.00	1942	2.29	08/1977	2	1	0	0	0.0	0.0	1940
June	0.07	1.04	1993	0.00	1940	1.01	05/1993	1	0	0	0	0.0	0.0	1940
July	0.01	0.21	1986	0.00	1940	0.18	12/1992	0	0	0	0	0.0	0.0	1940
August	0.11	2.97	1977	0.00	1940	2.86	17/1977	1	0	0	0	0.0	0.0	1940
September	0.20	3.39	1976	0.00	1940	1.43	10/1976	1	1	0	0	0.0	0.0	1940
October	0.58	7.26	2004	0.00	1953	3.00	19/2004	2	1	0	0	0.0	0.0	1940
November	1.52	10.63	1965	0.00	1948	5.28	29/1970	3	2	1	0	0.0	0.0	1940
December	2.28	8.07	1940	0.00	1950	5.30	29/1965	5	3	2	1	0.0	0.0	1939
Annual	16.34	39.77	1983	3.52	1947	7.76	19430122	36	23	10	5	0.1	4.7	1949
Winter	9.52	32.33	2005	1.81	1961	7.76	19430122	17	12	6	3	0.1	4.7	1949
Spring	4.34	18.19	1983	0.00	1997	5.45	19830301	12	7	3	1	0.0	0.5	1950
Summer	0.19	2.97	1977	0.00	1940	2.86	19770817	2	0	0	0	0.0	0.0	1940
Fall	2.30	11.38	1965	0.00	1980	5.28	19701129	6	4	2	1	0.0	0.0	1940

Table updated on Sep 17, 2007
For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons

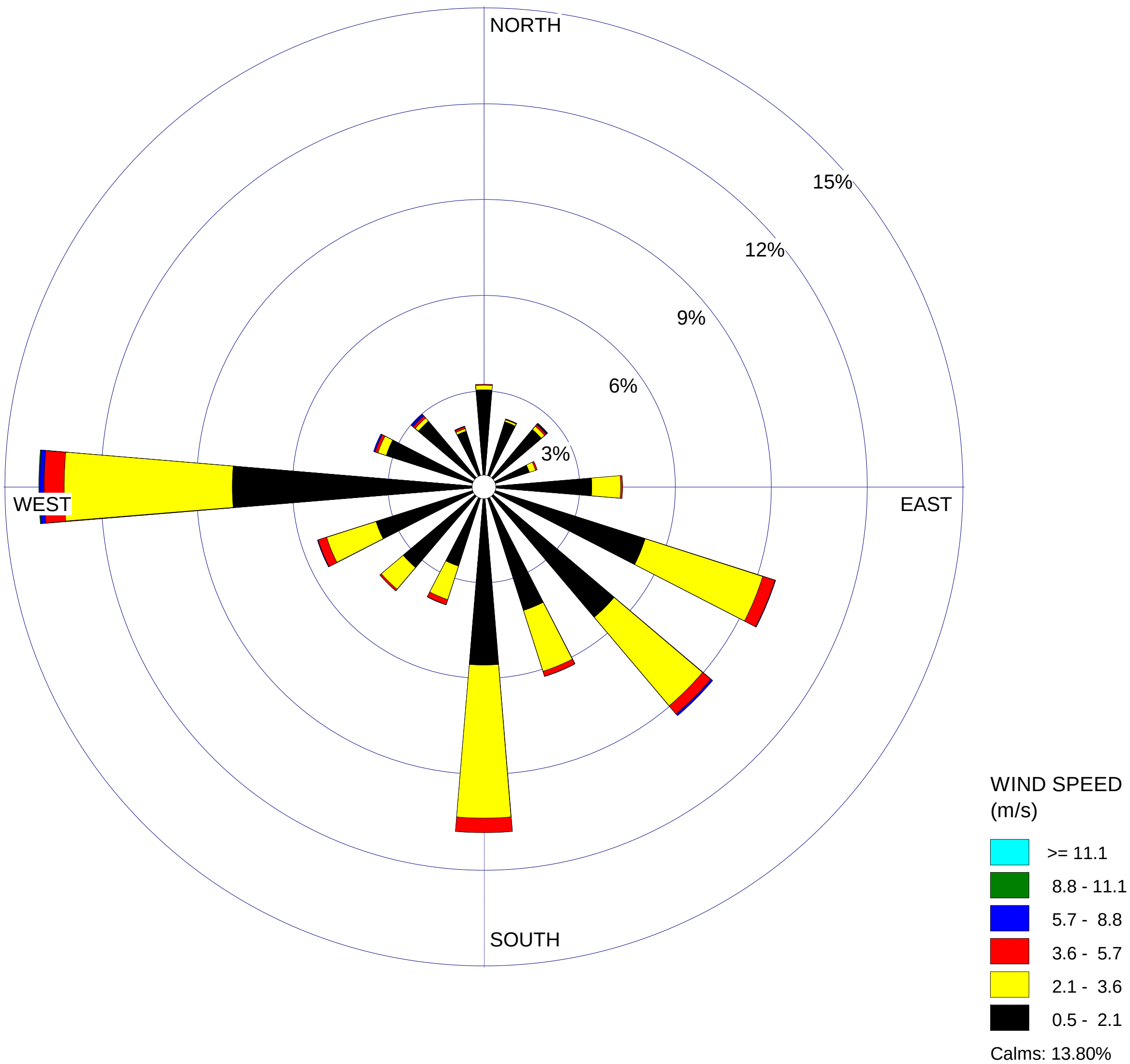
Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

WIND ROSE PLOT:

Station ID: 51100
Burbank

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:

DATA PERIOD:

1981 1981
Jan 1 - Dec 31
00:00 - 23:00

COMPANY NAME:

Terry A. Hayes Associates LLC

CALM WINDS:

13.80%

TOTAL COUNT:

17520 hrs.

AVG. WIND SPEED:

1.81 m/s

PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Appendix B

SCAQMD Data

2004 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2004

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide: No. Days of Data	CO: Max. Conc. in ppm 1-hour	CO: Max Conc. in ppm 8-hour	CO: No. Days Standard Exceeded a): Federal ≥ 9.5 ppm 8-hour	CO: State > 9.0 ppm 8-hour	Ozone: No. Days of Data	Ozone: Max. Conc. in ppm 1-hour	Ozone: Max. Conc. in ppm 8-hour	Ozone: Fourth High Conc. ppm 8-hour	Ozone: No. Days Standard Exceeded: Health Advisory ≥ 0.15 ppm 1-hour	Federal > 0.12 ppm 1-hour	Federal > 0.08 ppm 8-hour	State b) > 0.09 ppm 1-hour	State b) > 0.07 ppm 8-hour	Nitrogen Dioxide: No. Days of Data	NO2: Max Conc. in ppm 1-hour c)	NO2: Annual Average c) AAM Conc. ppm	Sulfur Dioxide: No. Days of Data	SO2: Max. Conc. in ppm 1-hour d)	SO2: Max. Conc. in ppm 24-hour d)
LOS ANGELES COUNTY																						
1	Central LA	087	361	4	3.2	0	0	366	0.110	0.092	0.079	0	0	1	7	7	359	0.16	0.0328	364	0.08	0.015
2	Northwest Coastal LA County	091	360	4	2.3	0	0	366	0.107	0.089	0.078	0	0	1	5	6	355	0.09	0.0198	--	--	--
3	Southwest Coastal LA County 1	094	90*	6*	4.4*	0*	0*	90*	0.069*	0.060*	0.056*	0*	0*	0*	0*	0*	89*	0.08*	0.0310*	89*	0.03*	0.004*
3	Southwest Coastal LA County 2	820	260*	4*	3.0*	0*	0*	262*	0.120*	0.100*	0.086*	0*	0*	4*	4*	13*	230*	0.09*	0.0136*	261*	0.02*	0.007*
4	South Coastal LA County 1	072	366	4	3.4	0	0	366	0.090	0.075	0.071	0	0	0	0	0	356	0.12	0.0280	361	0.04	0.012
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--
6	West San Fernando Valley	074	366	5	3.5	0	0	366	0.131	0.116	0.102	0	2	29	54	65	365	0.08	0.0214	--	--	--
7	East San Fernando Valley	069	366	5	3.7	0	0	366	0.137	0.109	0.089	0	2	7	27	37	356	0.12	0.0332	348	0.02	0.010
8	West San Gabriel Valley	088	361	7	3.4	0	0	365	0.130	0.103	0.093	0	1	9	27	31	355	0.12	0.0270	--	--	--
9	East San Gabriel Valley 1	060	366	3	2.0	0	0	366	0.134	0.104	0.094	0	2	10	28	26	351	0.10	0.0204	--	--	--
9	East San Gabriel Valley 2	591	361	2	2.0	0	0	366	0.134	0.108	0.095	0	4	16	42	35	353	0.12	0.0240	--	--	--
10	Pomona/Walnut Valley	075	366	4	3.1	0	0	366	0.131	0.102	0.097	0	4	13	31	25	364	0.11	0.0314	--	--	--
11	South San Gabriel Valley	085	366	5	3.6	0	0	366	0.104	0.084	0.080	0	0	0	7	7	353	0.12	0.0305	--	--	--
12	South Central LA County	084	366	10	6.7	0	0	366	0.084	0.072	0.065	0	0	0	0	0	362	0.10	0.0301	--	--	--
13	Santa Clarita Valley	090	363	5	3.7	0	0	360	0.158	0.133	0.108	1	13	52	69	81	358	0.09	0.0204	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	364	7	4.0	0	0	364	0.099	0.080	0.078	0	0	0	6	6	341	0.12	0.0252	--	--	--
17	Central Orange County	3176	366	5	4.1	0	0	366	0.120	0.097	0.088	0	0	6	14	35	361	0.12	0.0199	--	--	--
18	North Coastal Orange County	3195	366	5	4.1	0	0	366	0.104	0.087	0.076	0	0	1	2	5	357	0.10	0.0151	364	0.03	0.008
19	Saddleback Valley	3812	366	2	1.6	0	0	366	0.116	0.089	0.086	0	0	2	11	20	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	364	4	3.0	0	0	366	0.141	0.117	0.112	0	8	35	59	75	363	0.09	0.0172	331	0.02	0.015
23	Metropolitan Riverside County 2	4146	366	4	2.1	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Perris Valley	4149	--	--	--	--	--	365	0.128	0.103	0.097	0	2	19	37	47	--	--	--	--	--	--
25	Lake Elsinore	4158	353	2	0.9	0	0	353	0.130	0.116	0.103	0	2	21	41	51	339	0.06	0.0151	--	--	--
29	Banning Airport	4164	--	--	--	--	--	349	0.156	0.116	0.112	1	7	40	49	69	334	0.08	0.0165	--	--	--
30	Coachella Valley 1**	4137	366	2	1.0	0	0	366	0.125	0.108	0.099	0	1	31	36	55	353	0.07	0.0130	--	--	--
30	Coachella Valley 2**	4157	--	--	--	--	--	366	0.111	0.102	0.098	0	0	18	23	51	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	366	3	2.1	0	0	366	0.138	0.105	0.103	0	2	18	31	31	365	0.11	0.0305	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	313*	3*	2.1*	0*	0*	366	0.149	0.123	0.112	0	7	28	48	54	346	0.06	0.0273	360	0.01	0.006
34	Central San Bernardino Valley 2	5203	366	4	3.3	0	0	366	0.157	0.130	0.113	1	9	38	55	58	363	0.12	0.0261	--	--	--
35	East San Bernardino Valley	5204	--	--	--	--	--	366	0.160	0.137	0.122	1	12	53	75	76	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	--	--	364	0.163	0.145	0.124	1	9	66	75	96	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			10	6.7	0	0		0.163	0.145	0.124	1	13	66	75	96		0.16	0.0332		0.08	0.015
	SOUTH COAST AIR BASIN			10	6.7	0	0		0.163	0.148	0.124	4	28	90	111	148		0.16	0.0332		0.08	0.015

ppm - Parts Per Million parts of air, by volume. AAM = Annual Arithmetic Mean -- - Pollutant not monitored.

* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

a) - The federal 1-hour standard (1-hour average CO > 35 ppm) and state 1-hour standard (1-hour average CO > 20 ppm) were not exceeded.

b) - On April 28, 2005, Air Resources Board has approved revising the California Ozone standard to establish a new 8-hour average standard of 0.07 ppm. The new 8-hour standard is expected to take effect by December 2005.

c) - The state standard is 1-hour average NO_2 > 0.25 ppm. The federal standard is annual arithmetic mean NO_2 > 0.0534 ppm. No location exceeded the standards.

d) - The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm. The federal standards are annual arithmetic mean SO_2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm. No location exceeded SO_2 standards.

South Coast
Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

The map showing the locations of source/receptor areas can be accessed via the Internet at http://www.aqmd.gov/telemweb/areamap.aspx. Locations of source/receptor areas are shown on the "South Coast Air Quality Management District Air Monitoring Areas" map available free of charge from SCAQMD Public Information.

2004

2004 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 e) No. Days of Data	PM10 Max. Conc. in µg/m³ 24-hour	PM10 No. (%) Samples Exceeding Standard Federal > 150 µg/m³ 24-hour	PM10 No. (%) Samples Exceeding Standard State > 50 µg/m³ 24-hour	PM10 Annual Average h) AAM Conc. µg/m³	Suspended Particulates PM2.5 f) No. Days of Data	PM2.5 Max. Conc. in µg/m³ 24-hour	PM2.5 No. (%) Samples Exceeding Standard Federal > 65 µg/m³ 24-hour	PM2.5 Annual Averages i) AAM Conc. µg/m³	Particulates TSP g) No. Days of Data	TSP Max. Conc. in µg/m³ 24-hour	TSP Annual Average AAM Conc. µg/m³	Lead g) Max. Monthly Average Conc. j) µg/m³	Lead Max. Quarterly Average Conc. j) µg/m³	Sulfate g) Max. Conc. in µg/m³ 24-hour	Sulfate No. (%) Samples Exceeding Standard State ≥ 25 µg/m³ 24-hour
	LOS ANGELES COUNTY																	
1	Central LA	087	61	72	0	5(8.2)	32.7	318	75.0	2(0.6)	19.6	62	115	66.4	0.03	0.03	12.7	0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	59	79	46.8	--	--	11.4	0
3	Southwest Coastal LA County 1	094	15*	52*	0*	2(13.3)*	30.9*	--	--	--	--	15*	71*	50.5*	0.01	0.01	13.1	0
3	Southwest Coastal LA County 2	820	37*	47*	0*	0*	25.1	--	--	--	--	45*	77*	43.8*	0.01	0.01	14.3	0
4	South Coastal LA County 1	072	60	72	0	4(6.7)	33.1	323	66.6	1(0.3)	17.6	62	103	59.1	0.02	0.01	15.9	0
4	South Coastal LA County 2	077	59	83	0	12(20.3)	38.1	327	59.7	0	16.6	59	112	64.2	0.02	0.01	16.4	0
6	West San Fernando Valley	074	--	--	--	--	--	106	56.2	0	15.6	--	--	--	--	--	--	--
7	East San Fernando Valley	069	60	74	0	7(11.7)	37.5	109	60.1	0	19.2	--	--	--	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	113	59.4	0	16.6	58	95	49.5	--	--	11.2	0
9	East San Gabriel Valley 1	060	55	83	0	8(14.5)	35.4	279	75.6	1(0.4)	18.4	59	156	75.2	--	--	10.6	0
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	108	60.7	0	19.9	55	140	73.0	0.03	0.02	12.4	0
12	South Central LA County	084	--	--	--	--	--	115	55.8	0	18.5	58	128	78.6	0.03	0.03	14.7	0
13	Santa Clarita Valley	090	60	54	0	2(3.3)	28.1	--	--	--	--	--	--	--	--	--	--	--
	ORANGE COUNTY																	
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	61	74	0	7(11.5)	34.1	319	58.9	0	16.8	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	57	47	0	0	23.7	111	49.4	0	12.1	--	--	--	--	--	--	--
	RIVERSIDE COUNTY																	
22	Norco/Corona	4155	57	76	0	11(19.3)	38.0	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	119	137	0	72(60.5)	55.5	342	91.7	5(1.5)	22.1	60	199	100.5	0.02	0.01	9.8	0
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	110	93.8	2(1.8)	20.8	59	244	81.9	0.01	0.01	9.1	0
24	Perris Valley	4149	59	83	0	15(25.4)	41.4	--	--	--	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	61	82	0	7(11.5)	29.3	--	--	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	59	79	0	2(3.4)	26.4	112	27.1	0	9.0	--	--	--	--	--	--	--
30	Coachella Valley 2**	4157	118+	83+	0+	23(19.5)+	39.3+	110	28.5	0	10.7	--	--	--	--	--	--	--
	SAN BERNARDINO COUNTY																	
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	55	127	63.5	0.02	0.01	9.2	0
33	Southwest San Bernardino Valley	5817	58	93	0	17(29.3)	42.8	112	86.1	2(1.8)	20.9	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	61	106	0	29(47.5)	47.7	104	71.4	1(1.0)	20.0	59	235	113.4	--	--	10.8	0
34	Central San Bernardino Valley 2	5203	58	118	0	28(48.3)	48.6	106	93.4	4(3.8)	22.0	58	179	92.7	0.02	0.01	9.6	0
35	East San Bernardino Valley	5204	60	88	0	20(33.3)	38.6	--	--	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	57	52	0	1(1.8)	26.4	--	--	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	52	28.6	0	9.5	--	--	--			--	--
	DISTRICT MAXIMUM			137	0	72	55.5		93.8	5	22.1		244	113.4	0.03	0.03	16.4	0
	SOUTH COAST AIR BASIN			137	0	81	55.5		93.8	7	22.1		244	113.4	0.03	0.03	16.4	0

µg/m³ - Micrograms per cubic meter of air. AAM - Annual Arithmetic Mean -- - Pollutant not monitored.
* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.
e) - PM10 samples were collected every 6 days at all sites except for Station Numbers 4144 and 4157 where samples were collected every 3 days.
f) - PM2.5 samples were collected every 3 days at all sites except for the following sites: Station Numbers 060, 072, 077, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every 6 days.
g) - Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media.
h) - Federal PM10 standard is annual average (AAM) > 50 µg/m³. State standard is annual average (AAM) > 20 µg/m³ (changed from AGM > 30 µg/m³, effective July 5, 2003).
i) - Federal PM2.5 standard is annual average (AAM) > 15 µg/m³. State standard is annual average (AAM) > 12 µg/m³ (state standard was established on July 5, 2003).
j) - Federal lead standard is quarterly average > 1.5 µg/m³; and state standard is monthly average ≥ 1.5 µg/m³. No location exceeded lead standards. Maximum monthly and quarterly lead concentrations at special monitoring sites immediately downwind of stationary lead sources were 0.59 µg/m³ and 0.30 µg/m³, respectively, both recorded at Southeast Los Angeles County.
\+ - The data for the sample collected on a high-wind day (161 µg/m³ on 10/9/04) was excluded in accordance with EPA's Natural Events Policy.

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2005 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2005

Source/Receptor Area No.	Location	Station No.	CO No. Days of Data	CO Max. Conc. in ppm 1-hour	CO Max Conc. in ppm 8-hour	CO No. Days Standard Exceeded a) Federal ≥ 9.5 ppm 8-hour	CO No. Days Standard Exceeded a) State > 9.0 ppm 8-hour	Ozone No. Days of Data	Ozone Max. Conc. in ppm 1-hour	Ozone Max. Conc. in ppm 8-hour	Ozone Fourth High Conc. ppm 8-hour	Ozone No. Days Standard Exceeded Health Advisory ≥ 0.15 ppm 1-hour	Ozone No. Days Standard Exceeded Federal b) > 0.12 ppm 1-hour	Ozone No. Days Standard Exceeded Federal b) > 0.08 ppm 8-hour	Ozone No. Days Standard Exceeded State c) > 0.09 ppm 1-hour	Ozone No. Days Standard Exceeded State c) > 0.07 ppm 8-hour	NO2 No. Days of Data	NO2 Max Conc. in ppm 1-hour d)	NO2 Annual Average d) AAM Conc. ppm	SO2 No. Days of Data	SO2 Max. Conc. in ppm 1-hour e)	SO2 Max. Conc. in ppm 24-hour e)
LOS ANGELES COUNTY																						
1	Central LA	087	365	4	3.1	0	0	365	0.121	0.098	0.072	0	0	1	2	2	364	0.13	0.0278	357	0.07	0.010
2	Northwest Coastal LA County	091	365	3	2.1	0	0	361	0.114	0.090	0.077	0	0	1	7	5	365	0.08	0.0178	--	--	--
3	Southwest Coastal LA County	820	365	3	2.1	0	0	365	0.086	0.076	0.068	0	0	0	0	1	365	0.09	0.0134	365	0.04	0.012
4	South Coastal LA County 1	072	365	4	3.5	0	0	365	0.091	0.068	0.059	0	0	0	0	0	365	0.14	0.0241	365	0.04	0.010
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	West San Fernando Valley	074	350	5	3.5	0	0	365	0.138	0.113	0.098	0	2	12	30	29	365	0.09	0.0202	--	--	--
7	East San Fernando Valley	069	363	4	3.4	0	0	365	0.142	0.108	0.081	0	2	2	13	12	365	0.09	0.0294	361	0.01	0.006
8	West San Gabriel Valley	088	363	4	2.8	0	0	363	0.145	0.114	0.086	1	2	5	13	12	363	0.10	0.0241	--	--	--
9	East San Gabriel Valley 1	060	365	3	1.7	0	0	365	0.145	0.122	0.087	1	4	6	20	14	365	0.09	0.0251	--	--	--
9	East San Gabriel Valley 2	591	358	2	1.9	0	0	363	0.160	0.130	0.099	2	8	13	31	29	360	0.09	0.0224	--	--	--
10	Pomona/Walnut Valley	075	365	4	2.5	0	0	361	0.140	0.112	0.096	0	4	11	26	18	365	0.08	0.0312	--	--	--
11	South San Gabriel Valley	085	113*	3*	2.4*	0*	0*	116*	0.077*	0.065*	0.051*	0*	0*	0*	0*	0*	116*	0.09*	0.0308*	--	--	--
12	South Central LA County	084	365	7	5.9	0	0	365	0.111	0.081	0.063	0	0	0	1	1	360	0.11	0.0312	--	--	--
13	Santa Clarita Valley	090	365	2	1.3	0	0	364	0.173	0.141	0.118	5	11	47	65	69	347	0.087	0.0190	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	365	7	3.1	0	0	365	0.094	0.075	0.067	0	0	0	0	1	361	0.09	0.0249	--	--	--
17	Central Orange County	3176	365	4	3.3	0	0	365	0.095	0.077	0.075	0	0	0	1	4	365	0.09	0.0211	--	--	--
18	North Coastal Orange County	3195	364	5	3.2	0	0	338	0.085	0.073	0.068	0	0	0	0	0	355	0.09	0.0131	359	0.01	0.008
19	Saddleback Valley	3812	365	2	1.6	0	0	365	0.125	0.085	0.078	0	1	1	3	6	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	363	3	2.5	0	0	358	0.144	0.129	0.105	0	3	33	46	62	365	0.08	0.0222	365	0.02	0.011
23	Metropolitan Riverside County 2	4146	365	4	2.4	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Mira Loma	5212	362	3	2.1	0	0	358	0.135	0.116	0.105	0	3	25	34	51	346	0.08	0.0160	--	--	--
24	Perris Valley	4149	--	--	--	--	--	365	0.126	0.103	0.082	0	1	3	11	18	--	--	--	--	--	--
25	Lake Elsinore	4158	365	2	1.0	0	0	365	0.149	0.119	0.097	1	4	15	37	46	365	0.07	0.0142	--	--	--
29	Banning Airport	4164	--	--	--	--	--	359	0.144	0.132	0.119	0	10	39	47	66	329	0.07	0.0148	--	--	--
30	Coachella Valley 1**	4137	364	2	0.8	0	0	363	0.139	0.116	0.108	0	4	35	41	63	352	0.10	0.0120	--	--	--
30	Coachella Valley 2**	4157	--	--	--	--	--	365	0.114	0.095	0.092	0	0	18	18	36	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	364	3	1.8	0	0	365	0.149	0.121	0.101	1	8	15	34	34	364	0.10	0.0313	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	365	3	2.1	0	0	355	0.150	0.128	0.113	2	9	23	49	47	361	0.10	0.0310	365	0.01	0.004
34	Central San Bernardino Valley 2	5203	356	4	2.4	0	0	361	0.163	0.129	0.114	4	9	31	54	58	361	0.0.08	0.0259	--	--	--
35	East San Bernardino Valley	5204	--	--	--	--	--	364	0.146	0.123	0.113	1	6	24	36	45	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	--	--	354	0.182	0.145	0.130	7	18	69	80	102	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DISTRICT MAXIMUM				7	5.9	0	0		0.182	0.145	0.130	7	18	69	80	102		0.14	0.0313		0.07	0.012
SOUTH COAST AIR BASIN				7	5.9	0	0		0.182	0.145	0.130	11	30	84	102	120		0.14	0.0313		0.07	0.012

ppm - Parts Per Million parts of air, by volume. AAM = Annual Arithmetic Mean -- - Pollutant not monitored.

* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

a) - The federal 1-hour standard (1-hour average CO > 35 ppm) and state 1-hour standard (1-hour average CO > 20 ppm) were not exceeded. For comparison of data with the federal 8-hour CO standard (9 ppm), 8-hour averages with one decimal place should be rounded to integers.

b) – The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard effective June 15, 2004.

c) - Air Resources Board has established a new 8-hour average California ozone standard of 0.07 ppm effective May 17, 2005.

d) - The state standard is 1-hour average NO_2 > 0.25 ppm. The federal standard is annual arithmetic mean NO_2 > 0.0534 ppm.

e) - The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm. The federal standards are annual arithmetic mean SO_2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm.

South Coast
Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

The map showing the locations of source/receptor areas can be accessed via the Internet at http://www.aqmd.gov/telemweb/areamap.aspx. Locations of source/receptor areas are shown on the "South Coast Air Quality Management District Air Monitoring Areas" map available free of charge from SCAQMD Public Information.

2005 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2005

No.	Source/Receptor Area Location	Station No.	PM10 f): No. Days of Data	PM10: Max. Conc. in µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard Federal > 150 µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard State > 50 µg/m³ 24-hour	PM10: Annual Average i) AAM Conc. µg/m³	PM2.5 g): No. Days of Data	PM2.5: Max. Conc. in µg/m³ 24-hour	PM2.5: 98th Percentile Conc. in µg/m³ 24-hour	PM2.5: No. (%) Samples Exceeding Standard Federal > 65 µg/m³ 24-hour	PM2.5: Annual Averages j) AAM Conc. µg/m³	TSP h): No. Days of Data	TSP: Max. Conc. in µg/m³ 24-hour	TSP: Annual Average AAM Conc. µg/m³	Lead h): Max. Monthly Average Conc. k) µg/m³	Lead: Max. Quarterly Average Conc. k) µg/m³	Sulfate h): Max. Conc. in µg/m³ 24-hour	Sulfate: No. (%) Samples Exceeding Standard State ≥ 25 µg/m³ 24-hour
	LOS ANGELES COUNTY																		
1	Central LA	087	61	70	0	4(6.6)	29.6	334	73.7	53.2	2(0.6)	18.1	66	141	66.7	0.02	0.02	14.2	0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	59	89	41.6	--	--	11.7	0
3	Southwest Coastal LA County 2	820	54	44	0	0	22.9	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 1	072	59	66	0	5(8.5)	29.6	324	53.9	41.4	0	16.0	61	112	55.5	0.01	0.01	16.8	0
4	South Coastal LA County 2	077	59	131	0	18(30.5)	43.4	344	50.8	37.8	0	14.7	--	--	--	--	--	--	--
6	West San Fernando Valley	074	--	--	--	--	--	104	39.6	35.8	0	13.9	--	--	--	--	--	--	--
7	East San Fernando Valley	069	61	92	0	5(8.2)	34.3	106	63.2	50.6	0	17.9	--	--	--	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	113	62.9	43.1	0	15.1	58	89	44.6	--	--	11.2	0
9	East San Gabriel Valley 1	060	55	76	0	12(21.8)	35.1	292*	132.7*	53.2*	1(0.3)*	17.0*	58	142	70.9	--	--	10.2	0
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	76*	58.2*	54.0*	0*	17.0*	39*	104*	66.4*	0.03	0.03	9.9	0
12	South Central LA County	084	--	--	--	--	--	114	54.6	48.5	0	17.5	57	118	67.4	0.03	0.02	17.3	0
13	Santa Clarita Valley	090	60	55	0	1(1.7)	25.8	--	--	--	--	--	--	--	--	--	--	--	--
	ORANGE COUNTY																		
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	61	65	0	3(4.9)	28.2	333	54.7	41.9	0	14.7	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	55	41	0	0	19.0	113	35.4	31.4	0	10.7	--	--	--	--	--	--	--
	RIVERSIDE COUNTY																		
22	Norco/Corona	4155	58	79	0	5(8.6)	31.6	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	123	123	0	69(56.1)	52.0	334	98.7	58.4	4(1.2)	21.0	59	173	96.7	0.02	0.02	10.3	0
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	110	95.0	41.0	1(0.9)	18.0	60	125	75.8	0.01	0.01	10.3	0
23	Mira Loma	5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Perris Valley	4149	60	80	0	19(31.7)	39.2	--	--	--	--	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	58	76	0	2(3.4)	26.6	--	--	--	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	59	66	0	2(3.4)	25.9	83*	26.2*	25.0*	0*	8.4*	--	--	--	--	--	--	--
30	Coachella Valley 2**	4157	115	106	0	39(34.2)	45.7	104	44.4	25.0	0	10.5	--	--	--	--	--	--	--
	SAN BERNARDINO COUNTY																		
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	--	57	94	53.4	0.02	0.02	8.4	0
33	Southwest San Bernardino Valley	5817	60	74	0	19(31.7)	40.8	110	87.8	49.6	1(0.9)	18.8	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	60	108	0	29(48.3)	50.0	109	96.8	48.2	1(0.9)	18.9	61	295	100.2	--	--	10.4	0
34	Central San Bernardino Valley 2	5203	60	72	0	23(38.3)	42.3	109	106.3	43.4	1(0.9)	17.4	60	175	87.1	0.02	0.01	10.9	0
35	East San Bernardino Valley	5204	58	61	0	12(20.7)	33.2	--	--	--	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	56	49	0	0	25.8	--	--	--	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	51	38.8	38.8	0	12.1	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			131	0	69	52.0		132.7	58.4	4	21.0		295	100.2	0.03	0.03	17.3	0
	SOUTH COAST AIR BASIN			131	0	89	52.0		132.7	58.4	6	21.0		295	100.2	0.03	0.03	17.3	0

µg/m³ - Micrograms per cubic meter of air. AAM - Annual Arithmetic Mean AGM – Annual Geometric Mean -- - Pollutant not monitored.
* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

f) - PM10 samples were collected every 6 days at all sites except for Station Numbers 4144 and 4157 where samples were collected every 3 days.

g) - PM2.5 samples were collected every 3 days at all sites except for the following sites: Station Numbers 060, 072, 077, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every 6 days.

h) - Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media.

i) - Federal PM10 standard is annual average (AAM) > 50 µg/m³. State standard is annual average (AAM) > 20 µg/m³ (changed from AGM > 30 µg/m³, effective July 5, 2003).

j) - Federal PM2.5 standard is annual average (AAM) > 15 µg/m³. State standard is annual average (AAM) > 12 µg/m³ (state standard was established on July 5, 2003).

k) - Federal lead standard is quarterly average > 1.5 µg/m³; and state standard is monthly average ≥ 1.5 µg/m³. No location exceeded lead standards. Maximum monthly and quarterly lead concentrations at special monitoring sites immediately downwind of stationary lead sources were 0.44 µg/m³ and 0.34 µg/m³, respectively, both recorded at Central Los Angeles.

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2006 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2006

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide a) No. Days of Data	CO Max. Conc. in ppm 1-hour	CO Max Conc. in ppm 8-hour	Ozone b) No. Days of Data	O3 Max. Conc. in ppm 1-hour	O3 Max. Conc. in ppm 8-hour	O3 Fourth High Conc. ppm 8-hour	No. Days Standard Exceeded: Health Advisory ≥ 0.15 ppm 1-hour	Federal > 0.12 ppm 1-hour	Federal > 0.08 ppm 8-hour	State > 0.09 ppm 1-hour	State > 0.07 ppm 8-hour	Nitrogen Dioxide c) No. Days of Data	NO2 Max Conc. in ppm 1-hour	NO2 Max Conc. in ppm 24-hour	NO2 Annual Average AAM Conc. ppm	Sulfur Dioxide d) No. Days of Data	SO2 Max. Conc. in ppm 1-hour	SO2 Max. Conc. in ppm 24-hour	SO2 Annual Average AAM Conc. ppm
LOS ANGELES COUNTY																						
1	Central LA	087	362	3	2.6	362	0.11	0.079	0.077	0	0	0	8	4	360	0.11	0.06	0.0288	365	0.03	0.006	0.0019
2	Northwest Coastal LA County	091	365	3	2.0	365	0.10	0.074	0.069	0	0	0	3	0	365	0.08	0.05	0.0173	--	--	--	--
3	Southwest Coastal LA County	820	363	3	2.3	360	0.08	0.066	0.062	0	0	0	0	0	351	0.10	0.05	0.0155	363	0.02	0.006	0.0020
4	South Coastal LA County 1	072	360	4	3.4	364	0.08	0.058	0.058	0	0	0	0	0	357	0.10	0.05	0.0215	364	0.03	0.010	0.0012
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	West San Fernando Valley	074	365	5	3.4	361	0.16	0.108	0.105	1	6	17	32	39	363	0.07	0.04	0.0174	--	--	--	--
7	East San Fernando Valley	069	365	4	3.5	365	0.17	0.128	0.099	2	6	12	25	23	365	0.10	0.05	0.0274	360	0.01	0.004	0.0006
8	West San Gabriel Valley	088	360	4	2.8	365	0.15	0.117	0.095	1	5	7	25	24	365	0.12	0.06	0.0245	--	--	--	--
9	East San Gabriel Valley 1	060	365	2	1.7	364	0.17	0.120	0.091	2	7	10	23	19	365	0.11	0.07	0.0258	--	--	--	--
9	East San Gabriel Valley 2	591	363	2	2.0	363	0.18	0.128	0.107	2	10	15	37	31	362	0.10	0.06	0.0206	--	--	--	--
10	Pomona/Walnut Valley	075	365	3	2.1	365	0.15	0.128	0.109	2	9	16	32	30	365	0.10	0.06	0.0307	--	--	--	--
11	South San Gabriel Valley	085	232*	3*	2.7*	250*	0.13*	0.095*	0.080*	0*	1*	3*	9*	5*	204*	0.10*	0.06*	0.0283*	--	--	--	--
12	South Central LA County	084	365	8	6.4	365	0.09	0.066	0.064	0	0	0	0	0	363	0.14	0.08	0.0306	--	--	--	--
13	Santa Clarita Valley	090	363	2	1.3	359	0.16	0.120	0.112	1	20	40	62	64	359	0.08	0.04	0.0184	--	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	362	6	3.0	362	0.15	0.114	0.092	1	3	4	8	9	361	0.09	0.05	0.0224	--	--	--	--
17	Central Orange County	3176	365	5	3.0	365	0.11	0.088	0.072	0	0	1	5	3	343	0.11	0.06	0.0197	--	--	--	--
18	North Coastal Orange County	3195	365	4	3.0	365	0.07	0.064	0.062	0	0	0	0	0	361	0.10	0.05	0.0145	353	0.01	0.004	0.0013
19	Saddleback Valley	3812	365	2	1.8	356	0.12	0.105	0.092	0	0	6	13	17	--	--	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	365	3	2.1	365	0.15	0.116	0.113	1	8	30	45	59	365	0.08	0.05	0.0199	365	0.01	0.004	0.0013
23	Metropolitan Riverside County 2	4146	365	4	2.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Mira Loma	5214	364	4	2.7	364	0.16	0.119	0.107	1	4	25	39	48	332	0.08	0.05	0.0194	--	--	--	--
24	Perris Valley	4149	--	--	--	351	0.17	0.122	0.114	3	12	53	76	84	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	362	1	1.0	362	0.14	0.109	0.102	0	3	24	40	58	352	0.07	0.05	0.0151	--	--	--	--
29	Banning Airport	4164	--	--	--	357	0.14	0.115	0.104	0	8	44	57	78	355	0.11	0.04	0.0161	--	--	--	--
30	Coachella Valley 1**	4137	365	2	1.0	361	0.13	0.109	0.101	0	2	23	37	67	359	0.09	0.05	0.0103	--	--	--	--
30	Coachella Valley 2**	4157	--	--	--	364	0.10	0.089	0.087	0	0	7	4	29	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	360	3	1.8	365	0.17	0.130	0.114	2	14	25	50	54	337	0.10	0.07	0.0310	--	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	365	3	2.0	361	0.16	0.123	0.116	1	12	29	47	49	362	0.09	0.06	0.0270	365	0.01	0.003	0.0019
34	Central San Bernardino Valley 2	5203	364	3	2.3	362	0.15	0.127	0.119	3	10	29	52	57	362	0.09	0.05	0.0252	--	--	--	--
35	East San Bernardino Valley	5204	--	--	--	365	0.16	0.135	0.125	5	11	36	60	64	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	365	0.16	0.142	0.112	2	9	59	71	96	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DISTRICT MAXIMUM				8	6.4		0.18	0.142	0.125	5	20	59	76	96		0.14	0.08	0.0310		0.03	0.010	0.0020
SOUTH COAST AIR BASIN				8	6.4		0.18	0.142	0.125	10	35	86	102	121		0.14	0.08	0.0310		0.03	0.010	0.0020

ppm - Parts Per Million parts of air, by volume. AAM = Annual Arithmetic Mean -- - Pollutant not monitored.

* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

a) - The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35 ppm and 20 ppm) were not exceeded, either.

b) - The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard effective June 15, 2005. The 8-hour average California ozone standard of 0.07 ppm was established effective May 17, 2006.

c) - The state standard is 1-hour average NO_2 > 0.25 ppm. The federal standard is annual arithmetic mean NO_2 > 0.0534 ppm. Air Resources Board has approved to lower the NO_2 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. The revisions are expected to become effective later in 2007.

d) - The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm. The federal standards are annual arithmetic mean SO_2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm. The federal and state SO_2 standards were not exceeded.

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

The map showing the locations of source/receptor areas can be accessed via the Internet at http://www.aqmd.gov/telemweb/areamap.aspx. Locations of source/receptor areas are shown on the "South Coast Air Quality Management District Air Monitoring Areas" map available free of charge from SCAQMD Public Information.

2006 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2006

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 e): No. Days of Data	PM10: Max. Conc. in µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard: Federal > 150 µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard: State > 50 µg/m³ 24-hour	PM10: Annual Average AAM h) Conc. µg/m³	Fine Particulates PM2.5 f): No. Days of Data	PM2.5: Max. Conc. in µg/m³ 24-hour	PM2.5: 98th Percentile Conc. in µg/m³ 24-hour	PM2.5: No. (%) Samples Exceeding Standard: Federal i) > 35 µg/m³ 24-hour	PM2.5: No. (%) Samples Exceeding Standard: Federal i) > 65 µg/m³ 24-hour	PM2.5: Annual Averages AAM j) Conc. µg/m³	Particulates TSP g): No. Days of Data	TSP: Max. Conc. in µg/m³ 24-hour	TSP: Annual Average AAM Conc. µg/m³	Lead g): Max. Monthly Average Conc. k) µg/m³	Lead: Max. Quarterly Average Conc. k) µg/m³	Sulfate g): Max. Conc. in µg/m³ 24-hour	Sulfate: No. (%) Samples Exceeding Standard State ≥ 25 µg/m³ 24-hour
	LOS ANGELES COUNTY																			
1	Central LA	087	59	59	0	3(5.1)	30.3	330	56.2	38.9	11(3.3)	0	15.6	59	109	63.3	0.02	0.01	18.2	0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	--	56	76	40.2	--	--	12.2	0
3	Southwest Coastal LA County	820	51	45	0	0	26.5	--	--	--	--	--	--	56	84	43.1	0.01	0.01	13.6	0
4	South Coastal LA County 1	072	61	78	0	6(9.8)	31.1	290*	58.5*	34.9*	5(1.7)*	0*	14.2*	62	157	62.9	0.01	0.01	17.8	0
4	South Coastal LA County 2	077	58	117	0	19(32.7)	45.0	320	53.6	35.3	6(1.9)	0	14.5	59	192	71.1	0.01	0.01	18.8	0
6	West San Fernando Valley	074	--	--	--	--	--	92	44.1	32.0	1(1.1)	0	12.9	--	--	--	--	--	--	--
7	East San Fernando Valley	069	54	71	0	10(18.5)	35.6	104	50.7	43.4	6(5.8)	0	16.6	--	--	--	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	113	45.9	32.1	1(0.9)	0	13.4	60	123	42.8	--	--	28.7	1(1.7)
9	East San Gabriel Valley 1	060	58	81	0	7(12.1)	31.9	278*	52.8*	38.5*	8(2.9)*	0*	15.5*	59	142	68.4	--	--	20.8	0
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	116	72.2	43.1	7(6)	1(0.9)	16.7	58	768	79.3	0.03	0.02	28.6	1(1.7)
12	South Central LA County	084	--	--	--	--	--	107	55.0	44.5	4(3.7)	0	16.7	58	147	68.4	0.02	0.02	24.1	0
13	Santa Clarita Valley	090	58	53	0	1(1.7)	23.4	--	--	--	--	--	--	--	--	--	--	--	--	--
	ORANGE COUNTY																			
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	56	104	0	7(12.5)	33.4	330	56.2	40.5	8(2.4)	0	14.1	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	50	57	0	1(2.0)	22.8	106	47.0	25.7	1(0.9)	0	11.0	--	--	--	--	--	--	--
	RIVERSIDE COUNTY																			
22	Norco/Corona	4155	57	74	0	10(17.5)	36.5	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	118	109	0	71(60.2)	54.4	300	68.5	53.7	32(10.7)	1(0.3)	19.0	59	169	91.2	0.01	0.01	10.8	0
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	105	55.3	47.7	9(8.6)	0	17.0	59	131	72.9	0.01	0.01	9.9	0
23	Mira Loma	5214	59	124	0	41(69.5)	64.0	113	63.0	52.5	14(12.4)	0	20.6	--	--	--	--	--	--	--
24	Perris Valley	4149	54	125	0	19(35.2)	45.0	--	--	--	--	--	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	55	75	0	8(14.6)	31.1	--	--	--	--	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	57	73+	0+	2(3.5)+	24.5+	111	24.8	15.9	0	0	7.7	--	--	--	--	--	--	--
30	Coachella Valley 2**	4157	115	122+	0+	57(49.6)+	52.7+	107	24.3	19.1	0	0	9.5	--	--	--	--	--	--	--
	SAN BERNARDINO COUNTY																			
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	--	--	58	105	54.6	0.01	0.01	9.1	0
33	Southwest San Bernardino Valley	5817	62	78	0	17(27.4)	42.3	107	53.7	41.5	7(6.5)	0	18.5	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	60	142	0	31(51.7)	53.5	112	52.6	43.8	7(6.3)	0	17.6	59	190	101.0	--	--	10.3	0
34	Central San Bernardino Valley 2	5203	57	92	0	24(42.1)	46.0	102	55.0	48.4	8(7.8)	0	17.8	54	174	87.0	0.02	0.01	11.0	0
35	East San Bernardino Valley	5204	60	103	0	12(20.0)	36.2	--	--	--	--	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	58	63	0	1(1.7)	26.2	--	--	--	--	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	42*	40.1*	40.1*	1(2.4)*	0*	11.2*	--	--	--	--	--	--	--
	DISTRICT MAXIMUM			142+	0+	71	64.0		72.2	53.7	32	1	20.6		768	101.0	0.03	0.02	28.7	1
	SOUTH COAST AIR BASIN			142+	0+	75	64.0		72.2	53.7	32	1	20.6		768	101.0	0.03	0.02	28.7	1

µg/m³ - Micrograms per cubic meter of air   AAM - Annual Arithmetic Mean   -- - Pollutant not monitored

* Less than 12 full months of data. May not be representative.   ** Salton Sea Air Basin.

e) - PM10 samples were collected every 6 days at all sites except for Station Numbers 4144 and 4157 where samples were collected every 3 days.

f) - PM2.5 samples were collected every 3 days at all sites except for the following sites: Station Numbers 060, 072, 077, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every 6 days.

g) - Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media.

h) - Federal annual PM10 standard (AAM > 50 µg/m³) was revoked effective December 17, 2006. State standard is annual average (AAM) > 20 µg/m³.

i) - U.S. EPA has revised the federal 24-hour PM2.5 standard from 65 µg/m³ to 35 µg/m³; effective December 17, 2006.

j) - Federal PM2.5 standard is annual average (AAM) > 15 µg/m³. State standard is annual average (AAM) > 12 µg/m³.

k) - Federal lead standard is quarterly average > 1.5 µg/m³; and state standard is monthly average ≥ 1.5 µg/m³. No location exceeded lead standards. Maximum monthly and quarterly lead concentrations at special monitoring sites immediately downwind of stationary lead sources were 0.24 µg/m³ and 0.22 µg/m³, respectively, both recorded at Central Los Angeles.

\+ - The data for the samples collected on a high-wind day (July 16, 2006) at Palm Springs and Indio (226 µg/m³ and 313 µg/m³, respectively) were excluded in accordance with EPA's Natural Events Policy.

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Appendix C

EMFAC 2007 & CAL3QHC Output Files

CO Concentrations
Sherman Oaks Fashion Square Expansion Project 2006-127

2007 Existing

Intersection	Peak Time	Value	Parts Per Million 1-hour	Parts Per Million 8-hour
Weekday				
Hazeltine / Riverside	PM	1.0	6.3	4.4
Hazeltine / Ventura	AM	1.4	6.7	4.7
Hazeltine/Magnolia	PM	1.2	6.5	4.5
Woodman / 101 Freeway Westbound Ramp	PM	0.9	6.2	4.3
Woodman/Riverside	PM	1.3	6.6	4.6
Van Nuys/Riverside	PM	1.7	7.0	4.9
Weekend				
Hazeltine / Riverside		0.9	6.2	4.3
Woodman / Riverside		1.2	6.5	4.5
Woodman / 101 Freeway Westbound Ramp		0.9	6.2	4.3

2012 No Project

Intersection	Peak Time	Value	Parts Per Million 1-hour	Parts Per Million 8-hour
Weekday				
Hazeltine / Riverside	PM	0.9	4.56	3.2
Hazeltine / Ventura	AM	1.1	4.76	3.4
Hazeltine/Magnolia	PM	1.0	4.66	3.3
Woodman / 101 Freeway Westbound Ramp	PM	0.8	4.46	3.2
Woodman/Riverside	PM	0.9	4.56	3.2
Van Nuys/Riverside	PM	1.3	4.96	3.5
Weekend				
Hazeltine / Riverside		0.8	4.46	3.2
Woodman / Riverside		1.0	4.66	3.3
Woodman / 101 Freeway Westbound Ramp		0.8	4.46	3.2

2012 Project

Intersection	Peak Time	Value	Parts Per Million 1-hour	Parts Per Million 8-hour
Weekday				
Hazeltine / Riverside	PM	0.9	4.56	3.2
Hazeltine / Ventura	AM	1.1	4.76	3.4
Hazeltine/Magnolia	PM	1.0	4.66	3.3
Woodman / 101 Freeway Westbound Ramp	PM	0.8	4.46	3.2
Woodman/Riverside	PM	1.0	4.66	3.3
Van Nuys/Riverside	PM	1.3	4.96	3.5
Weekend				
Hazeltine / Riverside		0.9	4.56	3.2
Woodman / Riverside		0.9	4.56	3.2
Woodman / 101 Freeway Westbound Ramp		0.8	4.46	3.2

			1-hour	8-hour
State Standard			20	9

TAHA CO ANALYSIS ASSUMPTIONS & INPUTS

Project:	Sherman Oaks Fashion Square Expansion Project
Project Number:	2006-127
Existing Year:	2007
Analysis Year:	2012
Existing VMT (from EMFAC2007):	217,704,000
Project VMT (from EMFAC2007):	223,514,000
EMFAC Model:	EMFAC2007
Existing CO Emissions:	1,403.320
Project Year CO Emissions:	946.140
Persistence Factor:	0.7
Existing 1-Hr Ambient CO Concentration (ppm):	5.29
Existing 8-Hr Ambient CO Concentration (ppm):	3.70

EMFAC Assumptions	
Season/Month:	Winter
Temperature:	47
Speed:	20 mph
Source: Transportation Project-Level Carbon Monoxide Protocol, 12/1997	

CAL3QHC INPUTS			
Project Scenario:	Existing	Future Pre-Project	Future Project
Project Year:	2007	2012	2012
Average Time (minutes):	60	60	60
Surface Roughness Factor:	100	100	100
Emissions Factor - Free Flow Link (g/veh-mile):	5.59	3.52	3.52
Emissions Factor - Idle (g/veh-hr):	5.52	5.54	5.54
Saturation Flow Rate (veh/hr):	1600	1600	1600
Receptor Height (Z-Coordinate) (feet):	5.4	5.4	5.4
Wind Speed (m/s):	1	1	1
Stability Class:	F	F	F
Ambient 1-Hr CO Concentration (ppm):	5.29	3.66	3.66
Ambient 8-Hr CO Concentration (ppm):	3.70	2.56	2.56

	CAL3QHC names			
Weekday Analyzed Intersections:	**Existing**	**No Project**	**Project**	**Scenario:**
Hazeltine Ave / Riverside Dr.	HARIEX	HARINP	HARIPA	PM
Hazeltine Ave. / Ventura Blvd..	HAVEEX	HAVENP	HAVEPA	AM
Hazeltine Ave. / Magnolia Blvd..	HAMAEX	HAMANP	HAMAPA	PM
Woodman Ave. / Riverside Dr.	WORIEX	WORINP	WORIPA	PM
Riverside Dr. / Van Nuys Blvd.	RIVAEX	RIVANP	RIVAPA	PM
Woodman Ave / 101 Westbound Ramp	WO10EX	WO10NP	WO10PA	PM

Area : Los Angeles County Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 59 Los Angeles (SC)
Emissions: Tons Per Day

	Light Duty Passenger Cars				Light Duty Trucks				Medium Duty Trucks				Heavy Duty Trucks					Urban	Motor-	All
													Gasoline Trucks			Diesel	Total HD			
	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Total	Trucks	Trucks	Buses	cycles	Vehicles
Vehicles	20434.	3537860.	6075.	3564370.	13391.	1820960.	10579.	1844930.	5799.	701882.	27134.	734816.	2589.	57717.	60306.	81317.	141623.	4436.	143014.	6433190.
VMT/1000	325.	117695.	127.	118147.	310.	65400.	320.	66030.	123.	26298.	1357.	27778.	25.	1387.	1412.	8607.	10019.	484.	1056.	223514.
Trips	80096.	22270100.	31380.	22381600.	52866.	11458400.	63046.	11574300.	47616.	6867680.	330869.	7246160.	51300.	719785.	771085.	1452900.	2223980.	17742.	285999.	43729800.
Total Organic Gas Emissions																				
Run Exh	2.52	8.80	0.03	11.36	2.54	7.06	0.04	9.64	1.12	5.18	0.26	6.56	0.20	1.26	1.47	8.37	9.84	0.65	3.97	42.02
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.14	0.00	0.04	0.04	0.70	0.74	0.00	0.00	0.88
Start Ex	0.49	9.01	0.00	9.50	0.33	5.58	0.00	5.92	0.35	5.40	0.00	5.75	0.66	1.25	1.91	0.00	1.91	0.02	0.78	23.87
Total Ex	3.01	17.81	0.03	20.85	2.87	12.65	0.04	15.56	1.47	10.71	0.26	12.45	0.86	2.55	3.41	9.07	12.49	0.67	4.75	66.77
Diurnal	0.17	2.69	0.00	2.86	0.11	1.41	0.00	1.52	0.01	0.52	0.00	0.54	0.00	0.01	0.01	0.00	0.01	0.00	0.36	5.29
Hot Soak	0.36	4.63	0.00	4.98	0.24	2.40	0.00	2.64	0.06	1.01	0.00	1.08	0.04	0.03	0.06	0.00	0.06	0.00	0.16	8.93
Running	1.62	11.25	0.00	12.87	0.63	11.14	0.00	11.77	0.18	6.07	0.00	6.25	0.26	0.39	0.65	0.00	0.65	0.02	0.66	32.22
Resting	0.08	1.42	0.00	1.50	0.05	0.78	0.00	0.83	0.01	0.29	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.13	2.75
Total	5.24	37.79	0.03	43.07	3.91	28.38	0.04	32.32	1.74	18.60	0.26	20.60	1.17	2.98	4.15	9.07	13.22	0.69	6.06	115.96
Carbon Monoxide Emissions																				
Run Exh	26.89	222.34	0.12	249.35	26.16	183.93	0.24	210.33	17.33	93.06	1.28	111.67	5.63	20.68	26.31	32.75	59.07	4.22	39.54	674.19
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.76	0.03	0.79	0.01	0.23	0.25	3.32	3.57	0.00	0.00	4.36
Start Ex	2.62	103.39	0.00	106.01	1.78	69.42	0.00	71.20	2.47	59.78	0.00	62.25	5.72	19.03	24.75	0.00	24.75	0.27	3.12	267.60
Total Ex	29.50	325.74	0.12	355.37	27.94	253.34	0.24	281.53	19.81	153.60	1.30	174.71	11.36	39.94	51.31	36.07	87.38	4.50	42.66	946.14
Oxides of Nitrogen Emissions																				
Run Exh	1.69	22.81	0.22	24.71	1.61	25.04	0.55	27.21	0.91	16.86	7.49	25.26	0.17	5.13	5.30	107.92	113.22	9.58	1.54	201.51
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.08	0.00	0.00	0.00	5.79	5.79	0.00	0.00	5.87
Start Ex	0.12	6.71	0.00	6.84	0.08	5.84	0.00	5.92	0.07	9.38	0.00	9.45	0.09	2.46	2.55	0.00	2.55	0.03	0.10	24.88
Total Ex	1.82	29.52	0.22	31.55	1.69	30.88	0.55	33.12	0.98	26.25	7.56	34.79	0.26	7.59	7.85	113.71	121.56	9.61	1.64	232.27
Carbon Dioxide Emissions (000)																				
Run Exh	0.19	50.74	0.05	50.98	0.19	35.32	0.12	35.63	0.09	19.55	0.77	20.41	0.02	1.04	1.06	16.44	17.50	1.22	0.18	125.92
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.01	0.01	0.33	0.33	0.00	0.00	0.36
Start Ex	0.02	1.77	0.00	1.79	0.01	1.14	0.00	1.15	0.01	0.65	0.00	0.67	0.01	0.03	0.04	0.00	0.04	0.00	0.02	3.66
Total Ex	0.21	52.51	0.05	52.77	0.20	36.45	0.12	36.77	0.11	20.23	0.78	21.11	0.03	1.08	1.11	16.77	17.88	1.22	0.20	129.94
PM10 Emissions																				
Run Exh	0.01	1.60	0.02	1.63	0.01	1.87	0.02	1.91	0.00	0.77	0.06	0.83	0.00	0.01	0.01	4.53	4.54	0.14	0.04	9.09
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.09
Start Ex	0.00	0.14	0.00	0.15	0.00	0.15	0.00	0.15	0.00	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Total Ex	0.01	1.74	0.02	1.78	0.01	2.02	0.02	2.06	0.01	0.84	0.06	0.90	0.00	0.02	0.02	4.62	4.64	0.14	0.04	9.56
TireWear	0.00	1.04	0.00	1.04	0.00	0.58	0.00	0.58	0.00	0.25	0.02	0.27	0.00	0.02	0.02	0.25	0.27	0.00	0.00	2.18
BrakeWr	0.00	1.63	0.00	1.63	0.00	0.90	0.00	0.91	0.00	0.36	0.02	0.38	0.00	0.02	0.02	0.21	0.23	0.01	0.01	3.18
Total	0.02	4.41	0.02	4.45	0.02	3.50	0.03	3.55	0.01	1.46	0.09	1.56	0.00	0.06	0.06	5.09	5.15	0.16	0.05	14.92
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	0.00	0.51	0.00	0.51	0.00	0.35	0.00	0.36	0.00	0.20	0.01	0.21	0.00	0.01	0.01	0.16	0.17	0.01	0.00	1.26
Fuel Consumption (000 gallons)																				
Gasoline	27.39	5433.31	0.00	5460.70	25.58	3776.52	0.00	3802.10	14.42	2098.67	0.00	2113.09	5.23	117.64	122.87	0.00	122.87	10.95	28.28	11537.99
Diesel	0.00	0.00	4.57	4.57	0.00	0.00	11.07	11.07	0.00	0.00	70.05	70.05	0.00	0.00	0.00	1508.99	1508.99	100.43	0.00	1695.11

Title : Sherman Oaks Fashion Square
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/02/27 11:09:17
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Winter
Area : Los Angeles County Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 59 Los Angeles (SC)
Emissions: Tons Per Day

	Light Duty Passenger Cars				Light Duty Trucks				Medium Duty Trucks				Heavy Duty Trucks: Gasoline Trucks			Heavy Duty Trucks				
	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Total	Diesel Trucks	Total HD Trucks	Urban Buses	Motor-cycles	All Vehicles
Vehicles	64175.	3266660.	11439.	3342270.	32963.	1689430.	14503.	1736890.	10579.	653216.	23033.	686828.	6987.	52159.	59146.	71848.	130994.	4252.	134452.	6035690.
VMT/1000	1066.	113578.	256.	114901.	786.	63519.	477.	64782.	241.	26025.	1242.	27508.	68.	1399.	1467.	7594.	9060.	463.	990.	217704.
Trips	262296.	20690800.	63936.	21017000.	137144.	10737000.	89444.	10963600.	98150.	6416110.	276367.	6790620.	116116.	717466.	833583.	1289430.	2123010.	17008.	268877.	41180100.
Total Organic Gas Emissions																				
Run Exh	8.19	14.40	0.07	22.66	6.25	10.14	0.06	16.45	2.05	7.42	0.26	9.73	0.57	1.78	2.35	10.43	12.78	0.69	4.40	66.70
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.01	0.04	0.05	0.79	0.83	0.00	0.00	0.97
Start Ex	1.64	14.19	0.00	15.83	0.86	7.82	0.00	8.68	0.74	6.84	0.00	7.58	1.62	1.44	3.06	0.00	3.06	0.02	0.81	35.98
Total Ex	9.83	28.60	0.07	38.49	7.11	17.96	0.06	25.13	2.78	14.39	0.26	17.44	2.20	3.26	5.45	11.22	16.67	0.71	5.22	103.65
Diurnal	0.52	3.61	0.00	4.13	0.27	1.64	0.00	1.91	0.03	0.60	0.00	0.62	0.01	0.02	0.02	0.00	0.02	0.00	0.38	7.07
Hot Soak	1.19	5.08	0.00	6.27	0.63	2.28	0.00	2.91	0.13	0.98	0.00	1.11	0.08	0.03	0.11	0.00	0.11	0.00	0.24	10.65
Running	5.72	15.05	0.00	20.77	1.98	11.50	0.00	13.48	0.39	6.15	0.00	6.54	0.64	0.40	1.04	0.00	1.04	0.02	1.13	42.98
Resting	0.25	1.49	0.00	1.73	0.13	0.70	0.00	0.83	0.01	0.26	0.00	0.28	0.00	0.00	0.01	0.00	0.01	0.00	0.14	2.99
Total	17.51	53.82	0.07	71.40	10.11	34.09	0.06	44.27	3.34	22.39	0.26	25.98	2.93	3.71	6.64	11.22	17.86	0.73	7.11	167.34
Carbon Monoxide Emissions																				
Run Exh	90.24	321.64	0.26	412.13	66.72	245.00	0.37	312.09	34.05	125.29	1.18	160.52	15.62	28.97	44.59	39.47	84.06	4.55	53.50	1026.86
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.72	0.02	0.76	0.03	0.24	0.27	3.18	3.44	0.00	0.00	4.20
Start Ex	8.74	147.07	0.00	155.82	4.64	90.27	0.00	94.90	5.12	76.91	0.00	82.04	14.33	22.10	36.43	0.00	36.43	0.28	2.80	372.26
Total Ex	98.98	468.71	0.26	567.95	71.36	335.26	0.37	406.99	39.19	202.93	1.20	243.32	29.99	51.30	81.29	42.65	123.94	4.83	56.30	1403.32
Oxides of Nitrogen Emissions																				
Run Exh	5.62	36.27	0.44	42.34	4.11	37.02	0.82	41.96	1.73	24.45	9.20	35.39	0.49	7.32	7.81	144.12	151.93	10.10	1.57	283.28
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.07	0.00	0.00	0.00	4.75	4.75	0.00	0.00	4.82
Start Ex	0.41	9.46	0.00	9.87	0.21	7.64	0.00	7.85	0.14	9.71	0.00	9.85	0.23	2.75	2.99	0.00	2.99	0.03	0.09	30.68
Total Ex	6.04	45.74	0.44	52.21	4.33	44.66	0.82	49.81	1.87	34.17	9.26	45.31	0.72	10.08	10.80	148.87	159.67	10.13	1.66	318.78
Carbon Dioxide Emissions (000)																				
Run Exh	0.64	49.54	0.10	50.28	0.47	34.21	0.18	34.86	0.18	19.34	0.71	20.23	0.05	1.05	1.10	14.45	15.55	1.21	0.14	122.27
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.03	0.00	0.01	0.01	0.29	0.30	0.00	0.00	0.32
Start Ex	0.06	1.68	0.00	1.73	0.03	1.07	0.00	1.10	0.02	0.61	0.00	0.63	0.03	0.03	0.05	0.00	0.05	0.00	0.02	3.53
Total Ex	0.69	51.21	0.10	52.01	0.50	35.28	0.18	35.96	0.21	19.97	0.71	20.89	0.08	1.08	1.16	14.74	15.90	1.22	0.15	126.13
PM10 Emissions																				
Run Exh	0.04	1.38	0.05	1.47	0.03	1.53	0.04	1.60	0.01	0.63	0.06	0.70	0.00	0.01	0.02	5.98	5.99	0.15	0.05	9.96
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Start Ex	0.00	0.13	0.00	0.13	0.00	0.12	0.00	0.13	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.33
Total Ex	0.05	1.51	0.05	1.60	0.03	1.65	0.04	1.72	0.01	0.69	0.06	0.76	0.00	0.02	0.02	6.11	6.13	0.15	0.06	10.42
TireWear	0.01	1.00	0.00	1.01	0.01	0.56	0.00	0.57	0.00	0.25	0.02	0.27	0.00	0.02	0.02	0.22	0.24	0.00	0.00	2.10
BrakeWr	0.01	1.57	0.00	1.59	0.01	0.88	0.01	0.90	0.00	0.36	0.02	0.38	0.00	0.02	0.02	0.18	0.21	0.01	0.01	3.09
Total	0.07	4.08	0.05	4.20	0.05	3.09	0.05	3.19	0.02	1.30	0.10	1.41	0.00	0.06	0.06	6.51	6.58	0.16	0.07	15.61
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	0.01	0.50	0.00	0.51	0.01	0.34	0.00	0.35	0.00	0.20	0.01	0.20	0.00	0.01	0.01	0.14	0.15	0.01	0.00	1.23
Fuel Consumption (000 gallons)																				
Gasoline	90.02	5327.09	0.00	5417.11	64.80	3670.72	0.00	3735.51	28.17	2081.35	0.00	2109.52	13.39	120.24	133.63	0.00	133.63	9.39	26.34	11431.51
Diesel	0.00	0.00	9.29	9.29	0.00	0.00	16.51	16.51	0.00	0.00	64.18	64.18	0.00	0.00	0.00	1326.66	1326.66	101.62	0.00	1518.26

Title : Sherman Oaks Fashion Square
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/02/27 11:09:17
Scen Year: 2012 -- All model years in the range 1968 to 2012 selected
Season : Winter

Title   : Sherman Oaks Fashion Square
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/02/27 11:08:26
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season   : Winter
Area   : Los Angeles
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Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Total Organic Gases   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	3.945	12.294	0.000	0.000	1.068
20	0.265	0.315	0.456	1.749	1.632	3.843	0.392

Pollutant Name: Carbon Monoxide   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	22.896	55.968	0.000	0.000	5.522
20	4.461	5.499	6.552	12.345	10.710	32.536	5.558

Pollutant Name: Oxides of Nitrogen   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	3.434	74.943	0.000	0.000	3.757
20	0.446	0.722	1.206	14.806	19.923	1.384	1.314

Pollutant Name: Carbon Dioxide   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	900.855	4811.140	0.000	0.000	332.081
20	465.861	571.060	786.606	1743.374	2406.183	148.203	600.380

Pollutant Name: Sulfur Dioxide   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.009	0.046	0.000	0.000	0.003
20	0.005	0.006	0.008	0.017	0.023	0.002	0.006

Pollutant Name: PM10   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.040	1.790	0.000	0.000	0.084
20	0.016	0.030	0.032	0.730	0.359	0.037	0.055

Pollutant Name: PM10 - Tire Wear   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.008	0.008	0.009	0.024	0.009	0.004	0.009

Pollutant Name: PM10 - Break Wear   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.013	0.013	0.013	0.021	0.013	0.006	0.013

Title   : Sherman Oaks Fashion Square
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/02/27 11:08:26
Scen Year: 2012 -- All model years in the range 1968 to 2012 selected
Season   : Winter
Area   : Los Angeles
****

Year: 2012 -- Model Years 1968 to 2012 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County Average

Table   1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Total Organic Gases   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	3.987	10.332	0.000	0.000	1.010
20	0.126	0.179	0.303	1.222	1.476	3.202	0.235

Pollutant Name: Carbon Monoxide   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	23.277	52.843	0.000	0.000	5.541
20	2.604	3.641	4.506	7.400	9.511	24.039	3.519

Pollutant Name: Oxides of Nitrogen   Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	3.772	81.662	0.000	0.000	4.348
20	0.256	0.465	0.842	10.325	18.108	1.311	0.918

Pollutant Name: Carbon Dioxide Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	953.037	4905.912	0.000	0.000	356.304
20	459.890	572.341	785.039	1776.876	2315.547	160.272	601.786

Pollutant Name: Sulfur Dioxide Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.010	0.047	0.000	0.000	0.003
20	0.004	0.006	0.008	0.017	0.022	0.002	0.006

Pollutant Name: PM10 Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.040	1.243	0.000	0.000	0.064
20	0.017	0.035	0.037	0.460	0.330	0.025	0.047

Pollutant Name: PM10 - Tire Wear Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.008	0.008	0.009	0.025	0.009	0.004	0.009

Pollutant Name: PM10 - Break Wear Temperature: 47F Relative Humidity: 61%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.013	0.013	0.013	0.021	0.013	0.006	0.013

JOB: HAMA EX RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 18: 7: 6

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	518.0	.0	518.0	500.0	500.	360.	AG	1145.	5.6	.0	56.0		
2. nbd	518.0	500.0	518.0	1000.0	500.	360.	AG	1028.	5.6	.0	44.0		
3. sba	482.0	1000.0	482.0	500.0	500.	180.	AG	825.	5.6	.0	56.0		
4. sbd	482.0	500.0	482.0	.0	500.	180.	AG	998.	5.6	.0	44.0		
5. eba	.0	482.0	500.0	482.0	500.	90.	AG	1356.	5.6	.0	56.0		
6. ebd	500.0	482.0	1000.0	482.0	500.	90.	AG	1252.	5.6	.0	44.0		
7. wba	1000.0	518.0	500.0	518.0	500.	270.	AG	673.	5.6	.0	56.0		
8. wbd	500.0	518.0	.0	518.0	500.	270.	AG	721.	5.6	.0	44.0		
9. nbq	518.0	464.0	518.0	403.6	60.	180.	AG	21.	100.0	.0	36.0	.55	3.1
10. sbq	482.0	536.0	482.0	579.6	44.	360.	AG	21.	100.0	.0	36.0	.40	2.2
11. ebq	464.0	482.0	394.8	482.0	69.	270.	AG	21.	100.0	.0	36.0	.63	3.5
12. wbq	536.0	518.0	570.3	518.0	34.	90.	AG	21.	100.0	.0	36.0	.31	1.7

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
9. nbq	60	29	3.0	1145	1600	5.52	3	3
10. sbq	60	29	3.0	825	1600	5.52	3	3
11. ebq	60	28	3.0	1356	1600	5.52	3	3
12. wbq	60	28	3.0	673	1600	5.52	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. nw 10 ft	454.0	546.0	6.0
2. ne 10 ft	546.0	546.0	6.0
3. sw 10 ft	454.0	454.0	6.0
4. se 10 ft	546.0	454.0	6.0

JOB: HAMA RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.2	.7	.7
10.	.6	.0	1.0	.3
20.	.5	.0	.8	.3
30.	.4	.0	.8	.3
40.	.4	.0	.7	.4
50.	.4	.0	.8	.4
60.	.4	.0	.8	.4
70.	.3	.0	1.0	.6
80.	.3	.0	1.2	.7
90.	.6	.2	.7	.3
100.	.9	.5	.3	.0
110.	.8	.5	.4	.0
120.	.7	.4	.4	.0
130.	.6	.4	.4	.0
140.	.7	.3	.4	.0
150.	.6	.4	.5	.0
160.	.9	.4	.7	.0
170.	1.1	.4	.6	.1
180.	.8	.7	.2	.4
190.	.3	1.1	.0	.8
200.	.3	.9	.0	.6
210.	.3	.7	.0	.6
220.	.3	.7	.0	.6
230.	.4	.6	.0	.4
240.	.5	.7	.0	.4
250.	.6	.9	.0	.4
260.	.6	1.0	.1	.5
270.	.3	.7	.5	.8
280.	.0	.3	.8	1.2
290.	.0	.3	.7	.9
300.	.0	.3	.6	.8
310.	.0	.3	.5	.8
320.	.0	.3	.5	.7
330.	.0	.5	.4	.7
340.	.0	.6	.4	.9
350.	.1	.7	.4	1.0
360.	.3	.2	.7	.7
MAX	1.1	1.1	1.2	1.2
DEGR.	170	190	80	280

THE HIGHEST CONCENTRATION OF 1.20 PPM OCCURRED AT RECEPTOR REC3 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: HAMA NP RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 18:13: 9

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	518.0	.0	518.0	500.0	500.	360.	AG	1277.	3.5	.0	56.0		
2. nbd	518.0	500.0	518.0	1000.0	500.	360.	AG	1143.	3.5	.0	44.0		
3. sba	482.0	1000.0	482.0	500.0	500.	180.	AG	924.	3.5	.0	56.0		
4. sbd	482.0	500.0	482.0	.0	500.	180.	AG	1122.	3.5	.0	44.0		
5. eba	.0	482.0	500.0	482.0	500.	90.	AG	1511.	3.5	.0	56.0		
6. ebd	500.0	482.0	1000.0	482.0	500.	90.	AG	1390.	3.5	.0	44.0		
7. wba	1000.0	518.0	500.0	518.0	500.	270.	AG	753.	3.5	.0	56.0		
8. wbd	500.0	518.0	.0	518.0	500.	270.	AG	810.	3.5	.0	44.0		
9. nbq	518.0	464.0	518.0	396.6	67.	180.	AG	22.	100.0	.0	36.0	.61	3.4
10. sbq	482.0	536.0	482.0	584.8	49.	360.	AG	22.	100.0	.0	36.0	.44	2.5
11. ebq	464.0	482.0	387.0	482.0	77.	270.	AG	21.	100.0	.0	36.0	.70	3.9
12. wbq	536.0	518.0	574.4	518.0	38.	90.	AG	21.	100.0	.0	36.0	.35	2.0

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
9. nbq	60	29	3.0	1277	1600	5.54	3	3
10. sbq	60	29	3.0	924	1600	5.54	3	3
11. ebq	60	28	3.0	1511	1600	5.54	3	3
12. wbq	60	28	3.0	753	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. nw 10 ft	454.0	546.0	6.0
2. ne 10 ft	546.0	546.0	6.0
3. sw 10 ft	454.0	454.0	6.0
4. se 10 ft	546.0	454.0	6.0

JOB: HAMA RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.2	.2	.6	.6
10.	.4	.0	.8	.2
20.	.4	.0	.7	.2
30.	.3	.0	.6	.3
40.	.3	.0	.4	.3
50.	.3	.0	.5	.3
60.	.3	.0	.5	.3
70.	.3	.0	.6	.4
80.	.3	.0	.8	.5
90.	.4	.2	.5	.2
100.	.7	.4	.2	.0
110.	.6	.4	.2	.0
120.	.6	.3	.2	.0
130.	.4	.2	.2	.0
140.	.5	.3	.3	.0
150.	.5	.3	.4	.0
160.	.7	.3	.5	.0
170.	.8	.3	.5	.1
180.	.4	.5	.2	.3
190.	.2	.8	.0	.5
200.	.2	.7	.0	.5
210.	.2	.5	.0	.4
220.	.2	.5	.0	.4
230.	.3	.4	.0	.4
240.	.3	.6	.0	.3
250.	.4	.6	.0	.3
260.	.4	.7	.1	.3
270.	.1	.4	.3	.6
280.	.0	.2	.6	1.0
290.	.0	.2	.5	.6
300.	.0	.2	.5	.5
310.	.0	.2	.4	.6
320.	.0	.3	.4	.4
330.	.0	.3	.4	.5
340.	.0	.4	.4	.6
350.	.0	.4	.4	.7
360.	.2	.2	.6	.6
MAX	.8	.8	.8	1.0
DEGR.	170	190	10	280

THE HIGHEST CONCENTRATION OF 1.00 PPM OCCURRED AT RECEPTOR REC4 .

JOB: HAMA PA RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 18:18:16

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	518.0	.0	518.0	500.0	500.	360.	AG	1323.	3.5	.0	56.0		
2. nbd	518.0	500.0	518.0	1000.0	500.	360.	AG	1183.	3.5	.0	44.0		
3. sba	482.0	1000.0	482.0	500.0	500.	180.	AG	953.	3.5	.0	56.0		
4. sbd	482.0	500.0	482.0	.0	500.	180.	AG	1163.	3.5	.0	44.0		
5. eba	.0	482.0	500.0	482.0	500.	90.	AG	1517.	3.5	.0	56.0		
6. ebd	500.0	482.0	1000.0	482.0	500.	90.	AG	1390.	3.5	.0	44.0		
7. wba	1000.0	518.0	500.0	518.0	500.	270.	AG	759.	3.5	.0	56.0		
8. wbd	500.0	518.0	.0	518.0	500.	270.	AG	816.	3.5	.0	44.0		
9. nbq	518.0	464.0	518.0	394.1	70.	180.	AG	22.	100.0	.0	36.0	.64	3.6
10. sbq	482.0	536.0	482.0	586.3	50.	360.	AG	22.	100.0	.0	36.0	.46	2.6
11. ebq	464.0	482.0	386.7	482.0	77.	270.	AG	21.	100.0	.0	36.0	.70	3.9
12. wbq	536.0	518.0	574.7	518.0	39.	90.	AG	21.	100.0	.0	36.0	.35	2.0

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
9. nbq	60	29	3.0	1323	1600	5.54	3	3
10. sbq	60	29	3.0	953	1600	5.54	3	3
11. ebq	60	28	3.0	1517	1600	5.54	3	3
12. wbq	60	28	3.0	759	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. nw 10 ft	454.0	546.0	6.0
2. ne 10 ft	546.0	546.0	6.0
3. sw 10 ft	454.0	454.0	6.0
4. se 10 ft	546.0	454.0	6.0

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     JOB: HAMA                                           RUN: CAL3QHC RUN

      MODEL RESULTS
      -------------

      REMARKS : In search of the angle corresponding to
                the maximum concentration, only the first
                angle, of the angles with same maximum
                concentrations, is indicated as maximum.

WIND ANGLE RANGE:   0.-360.

WIND  * CONCENTRATION
ANGLE *      (PPM)
(DEGR)* REC1  REC2  REC3  REC4
------*-----------------------
  0.  *    .2    .2    .6    .6
 10.  *    .4    .0    .8    .2
 20.  *    .4    .0    .7    .2
 30.  *    .3    .0    .6    .3
 40.  *    .3    .0    .4    .3
 50.  *    .3    .0    .5    .3
 60.  *    .3    .0    .5    .3
 70.  *    .3    .0    .6    .4
 80.  *    .3    .0    .8    .5
 90.  *    .4    .2    .5    .2
100.  *    .7    .4    .2    .0
110.  *    .6    .4    .2    .0
120.  *    .6    .3    .2    .0
130.  *    .4    .2    .2    .0
140.  *    .5    .3    .3    .0
150.  *    .6    .3    .4    .0
160.  *    .7    .3    .5    .0
170.  *    .8    .3    .5    .1
180.  *    .4    .5    .2    .3
190.  *    .2    .8    .0    .5
200.  *    .2    .7    .0    .5
210.  *    .2    .5    .0    .4
220.  *    .2    .5    .0    .4
230.  *    .3    .4    .0    .4
240.  *    .3    .6    .0    .4
250.  *    .4    .6    .0    .3
260.  *    .4    .7    .1    .3
270.  *    .1    .4    .3    .7
280.  *    .0    .2    .6   1.0
290.  *    .0    .2    .5    .6
300.  *    .0    .2    .5    .6
310.  *    .0    .3    .4    .6
320.  *    .0    .3    .4    .4
330.  *    .0    .3    .4    .5
340.  *    .0    .4    .4    .6
350.  *    .0    .4    .4    .7
360.  *    .2    .2    .6    .6
------*-----------------------
MAX   *    .8    .8    .8   1.0
DEGR. *  170   190    10   280

THE HIGHEST CONCENTRATION OF    1.00 PPM OCCURRED AT RECEPTOR REC4 .
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JOB: HARI EX RUN: Hazeltine Riverside No Project

DATE : 3/ 3/ 8
TIME : 9: 5:21

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1229.	5.6	.0	92.0		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1115.	5.6	.0	80.0		
3. Link_3	524.0	464.0	524.0	422.0	42.	180.	AG	25.	100.0	.0	48.0	.38	2.1
4. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	1056.	5.6	.0	80.0		
5. Link_5	482.0	500.0	482.0	.0	500.	180.	AG	1139.	5.6	.0	92.0		
6. Link_6	482.0	536.0	482.0	584.1	48.	360.	AG	19.	100.0	.0	36.0	.44	2.4
7. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	817.	5.6	.0	80.0		
8. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	1027.	5.6	.0	80.0		
9. Link_9	464.0	482.0	416.4	482.0	48.	270.	AG	24.	100.0	.0	36.0	.44	2.4
10. Link_10	1000.0	518.0	500.0	518.0	500.	270.	AG	995.	5.6	.0	80.0		
11. Link_11	500.0	518.0	.0	518.0	500.	270.	AG	816.	5.6	.0	80.0		
12. Link_12	548.0	518.0	605.9	518.0	58.	90.	AG	24.	100.0	.0	36.0	.54	2.9

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	25	3.0	1229	1600	5.52	3	3
6. Link_6	60	25	3.0	1056	1600	5.52	3	3
9. Link_9	60	32	3.0	817	1600	5.52	3	3
12. Link_12	60	32	3.0	995	1600	5.52	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	454.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 1- ft	454.0	454.0	6.0
4. SE 10 ft	558.0	454.0	6.0

RUN: Hazeltine Riverside No Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.4	.4	.8	.7
10.	.7	.1	1.0	.6
20.	.5	.0	.7	.5
30.	.5	.0	.6	.3
40.	.4	.0	.7	.4
50.	.5	.0	.7	.4
60.	.5	.0	.8	.5
70.	.5	.1	.8	.5
80.	.6	.2	1.0	.6
90.	.9	.5	.9	.5
100.	1.0	.6	.7	.2
110.	.8	.5	.5	.1
120.	.8	.5	.4	.0
130.	.7	.5	.4	.0
140.	.8	.5	.4	.0
150.	.6	.4	.5	.0
160.	.8	.4	.6	.1
170.	1.0	.6	.6	.2
180.	.7	.8	.5	.4
190.	.5	1.0	.2	.7
200.	.3	.9	.1	.6
210.	.2	.8	.0	.5
220.	.2	.8	.0	.4
230.	.3	.8	.0	.5
240.	.4	.8	.0	.5
250.	.5	.7	.2	.5
260.	.5	.9	.1	.6
270.	.3	.7	.3	.8
280.	.1	.5	.5	1.0
290.	.1	.4	.5	.7
300.	.0	.3	.4	.8
310.	.0	.4	.4	.9
320.	.0	.4	.3	.8
330.	.0	.5	.4	.8
340.	.1	.6	.4	.8
350.	.2	.7	.5	1.0
360.	.4	.4	.8	.7
MAX	1.0	1.0	1.0	1.0
DEGR.	100	190	10	280

THE HIGHEST CONCENTRATION OF 1.00 PPM OCCURRED AT RECEPTOR REC3 .

JOB: HARI NP RUN: Hazeltine Riverside No Project

DATE : 2/27/ 8
TIME : 12: 8:40

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1371.	3.5	.0	92.0		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1249.	3.5	.0	80.0		
3. Link_3	524.0	464.0	524.0	415.4	49.	180.	AG	26.	100.0	.0	48.0	.44	2.5
4. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	1185.	3.5	.0	80.0		
5. Link_5	482.0	500.0	482.0	.0	500.	180.	AG	1276.	3.5	.0	92.0		
6. Link_6	482.0	536.0	482.0	592.2	56.	360.	AG	19.	100.0	.0	36.0	.51	2.9
7. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	932.	3.5	.0	80.0		
8. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	1169.	3.5	.0	80.0		
9. Link_9	464.0	482.0	411.5	482.0	53.	270.	AG	23.	100.0	.0	36.0	.49	2.7
10. Link_10	1000.0	518.0	500.0	518.0	500.	270.	AG	1139.	3.5	.0	80.0		
11. Link_11	500.0	518.0	.0	518.0	500.	270.	AG	933.	3.5	.0	80.0		
12. Link_12	548.0	518.0	612.2	518.0	64.	90.	AG	23.	100.0	.0	36.0	.59	3.3

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	26	3.0	1371	1600	5.54	3	3
6. Link_6	60	26	3.0	1185	1600	5.54	3	3
9. Link_9	60	31	3.0	932	1600	5.54	3	3
12. Link_12	60	31	3.0	1139	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. NW 10 ft	454.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 1- ft	454.0	454.0	6.0
4. SE 10 ft	558.0	454.0	6.0

RUN: Hazeltine Riverside No Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.3	.6	.5
10.	.4	.1	.9	.3
20.	.4	.0	.7	.3
30.	.4	.0	.5	.2
40.	.4	.0	.5	.2
50.	.3	.0	.5	.3
60.	.3	.0	.5	.3
70.	.3	.0	.6	.4
80.	.5	.1	.7	.4
90.	.7	.3	.6	.3
100.	.7	.5	.5	.1
110.	.6	.4	.3	.1
120.	.5	.4	.2	.0
130.	.5	.3	.2	.0
140.	.5	.3	.3	.0
150.	.5	.3	.4	.0
160.	.7	.3	.4	.0
170.	.8	.5	.5	.1
180.	.6	.6	.3	.3
190.	.4	.9	.2	.4
200.	.4	.7	.1	.5
210.	.2	.5	.0	.4
220.	.2	.5	.0	.4
230.	.2	.4	.0	.3
240.	.2	.6	.0	.3
250.	.3	.5	.0	.3
260.	.4	.6	.1	.4
270.	.2	.5	.2	.6
280.	.1	.3	.4	.7
290.	.0	.2	.3	.5
300.	.0	.2	.3	.5
310.	.0	.2	.3	.4
320.	.0	.3	.3	.5
330.	.0	.3	.3	.5
340.	.1	.5	.4	.7
350.	.1	.4	.5	.7
360.	.3	.3	.6	.5
MAX	.8	.9	.9	.7
DEGR.	170	190	10	280

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC3 .

JOB: HARI PA RUN: Hazeltine Riverside Avenue Project

DATE : 2/27/ 8
TIME : 12:34:37

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1397.	3.5	.0	92.0		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1311.	3.5	.0	80.0		
3. Link_3	524.0	464.0	524.0	414.4	50.	180.	AG	26.	100.0	.0	48.0	.45	2.5
4. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	1231.	3.5	.0	80.0		
5. Link_5	482.0	500.0	482.0	.0	500.	180.	AG	1315.	3.5	.0	92.0		
6. Link_6	482.0	536.0	482.0	594.3	58.	360.	AG	19.	100.0	.0	36.0	.53	3.0
7. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	975.	3.5	.0	80.0		
8. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	1219.	3.5	.0	80.0		
9. Link_9	464.0	482.0	408.9	482.0	55.	270.	AG	23.	100.0	.0	36.0	.51	2.8
10. Link_10	1000.0	518.0	500.0	518.0	500.	270.	AG	1249.	3.5	.0	80.0		
11. Link_11	500.0	518.0	.0	518.0	500.	270.	AG	1007.	3.5	.0	80.0		
12. Link_12	548.0	518.0	618.5	518.0	71.	90.	AG	23.	100.0	.0	36.0	.65	3.6

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	26	3.0	1397	1600	5.54	3	3
6. Link_6	60	26	3.0	1231	1600	5.54	3	3
9. Link_9	60	31	3.0	975	1600	5.54	3	3
12. Link_12	60	31	3.0	1249	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. NW 10 ft	454.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	454.0	454.0	6.0
4. SE 10 ft	558.0	454.0	6.0

RUN: Hazeltine Riverside Avenue Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.3	.6	.5
10.	.5	.1	.9	.3
20.	.5	.0	.7	.3
30.	.5	.0	.5	.3
40.	.4	.0	.5	.2
50.	.3	.0	.6	.3
60.	.3	.0	.5	.4
70.	.3	.1	.7	.5
80.	.5	.1	.8	.5
90.	.7	.3	.6	.3
100.	.8	.5	.5	.1
110.	.7	.6	.3	.1
120.	.5	.5	.2	.0
130.	.5	.4	.2	.0
140.	.5	.3	.3	.0
150.	.6	.3	.4	.0
160.	.7	.3	.5	.0
170.	.8	.5	.5	.1
180.	.7	.6	.3	.3
190.	.4	.9	.2	.4
200.	.4	.7	.1	.5
210.	.2	.5	.0	.4
220.	.2	.5	.0	.4
230.	.2	.4	.0	.3
240.	.3	.6	.0	.3
250.	.3	.5	.0	.4
260.	.4	.7	.1	.4
270.	.2	.5	.2	.6
280.	.1	.4	.4	.8
290.	.0	.3	.4	.5
300.	.0	.2	.4	.5
310.	.0	.3	.3	.5
320.	.0	.3	.3	.5
330.	.0	.3	.3	.5
340.	.1	.5	.4	.7
350.	.1	.5	.5	.8
360.	.3	.3	.6	.5
MAX	.8	.9	.9	.8
DEGR.	100	190	10	350

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC3 .

JOB: HARIwe NP RUN: Hazeltine Riverside we existing

DATE : 8/13/ 7
TIME : 17:51:18

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1070.	5.3	.0	92.0		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	818.	5.3	.0	80.0		
3. Link_3	524.0	464.0	524.0	430.4	34.	180.	AG	21.	100.0	.0	48.0	.31	1.7
4. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	960.	5.3	.0	92.0		
5. Link_5	482.0	500.0	482.0	.0	500.	180.	AG	1055.	5.3	.0	92.0		
6. Link_6	482.0	536.0	482.0	576.2	40.	360.	AG	16.	100.0	.0	36.0	.38	2.0
7. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	728.	5.3	.0	80.0		
8. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	926.	5.3	.0	80.0		
9. Link_9	464.0	482.0	419.0	482.0	45.	270.	AG	24.	100.0	.0	36.0	.43	2.3
10. Link_10	1000.0	518.0	500.0	518.0	500.	270.	AG	692.	5.3	.0	80.0		
11. Link_11	500.0	518.0	.0	518.0	500.	270.	AG	651.	5.3	.0	80.0		
12. Link_12	548.0	518.0	590.8	518.0	43.	90.	AG	24.	100.0	.0	36.0	.41	2.2

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	23	3.0	1070	1600	5.22	3	3
6. Link_6	60	23	3.0	960	1600	5.22	3	3
9. Link_9	60	34	3.0	728	1600	5.22	3	3
12. Link_12	60	34	3.0	692	1600	5.22	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	454.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	454.0	454.0	6.0
4. SE 10 ft	558.0	454.0	6.0

RUN: Hazeltine Riverside we existing

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.3	.7	.5
10.	.4	.1	.9	.4
20.	.5	.0	.7	.3
30.	.3	.0	.5	.2
40.	.3	.0	.5	.3
50.	.2	.0	.7	.3
60.	.2	.0	.5	.3
70.	.2	.0	.7	.5
80.	.4	.1	.8	.5
90.	.6	.3	.6	.3
100.	.7	.5	.4	.2
110.	.6	.4	.2	.1
120.	.7	.4	.3	.0
130.	.5	.4	.4	.0
140.	.5	.3	.4	.0
150.	.6	.3	.5	.0
160.	.7	.3	.5	.1
170.	.8	.5	.6	.1
180.	.7	.7	.4	.3
190.	.5	.9	.2	.6
200.	.3	.7	.1	.5
210.	.2	.6	.0	.4
220.	.2	.5	.0	.4
230.	.2	.6	.0	.3
240.	.3	.6	.0	.3
250.	.4	.6	.0	.5
260.	.4	.7	.1	.5
270.	.2	.6	.3	.6
280.	.1	.3	.4	.7
290.	.0	.2	.3	.5
300.	.0	.2	.3	.7
310.	.0	.2	.3	.6
320.	.0	.3	.3	.5
330.	.0	.4	.4	.6
340.	.1	.4	.4	.7
350.	.2	.5	.5	.8
360.	.3	.3	.7	.5
MAX	.8	.9	.9	.8
DEGR.	170	190	10	350

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC3 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: HARIwe NP   RUN: Hazeltine Riverside we No Project

DATE : 2/28/ 8
TIME : 14:12:31

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S   VD = .0 CM/S   Z0 = 100. CM
U = 1.0 M/S   CLAS = 6 (F)   ATIM = 60. MINUTES   MIXH = 1000. M   AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1210.	3.5	.0	92.0		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	930.	3.5	.0	80.0		
3. Link_3	524.0	464.0	524.0	424.4	40.	180.	AG	24.	100.0	.0	48.0	.37	2.0
4. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	1088.	3.5	.0	80.0		
5. Link_5	482.0	500.0	482.0	.0	500.	180.	AG	1199.	3.5	.0	92.0		
6. Link_6	482.0	536.0	482.0	581.5	46.	360.	AG	17.	100.0	.0	36.0	.42	2.3
7. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	855.	3.5	.0	80.0		
8. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	1086.	3.5	.0	80.0		
9. Link_9	464.0	482.0	412.6	482.0	51.	270.	AG	25.	100.0	.0	36.0	.49	2.6
10. Link_10	1000.0	518.0	500.0	518.0	500.	270.	AG	822.	3.5	.0	80.0		
11. Link_11	500.0	518.0	.0	518.0	500.	270.	AG	760.	3.5	.0	80.0		
12. Link_12	548.0	518.0	597.4	518.0	49.	90.	AG	25.	100.0	.0	36.0	.47	2.5

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	24	3.0	1210	1600	5.54	3	3
6. Link_6	60	23	3.0	1088	1600	5.54	3	3
9. Link_9	60	33	3.0	855	1600	5.54	3	3
12. Link_12	60	33	3.0	822	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	454.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	454.0	454.0	6.0
4. SE 10 ft	558.0	454.0	6.0

RUN: Hazeltine Riverside we No Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.2	.6	.5
10.	.4	.1	.7	.4
20.	.3	.0	.5	.3
30.	.3	.0	.4	.2
40.	.2	.0	.4	.2
50.	.3	.0	.5	.2
60.	.3	.0	.5	.3
70.	.3	.0	.5	.3
80.	.3	.1	.6	.4
90.	.7	.2	.5	.3
100.	.7	.3	.4	.1
110.	.6	.4	.2	.0
120.	.5	.3	.2	.0
130.	.4	.3	.2	.0
140.	.5	.3	.2	.0
150.	.5	.3	.4	.0
160.	.6	.3	.4	.0
170.	.7	.4	.4	.1
180.	.5	.6	.3	.3
190.	.5	.8	.1	.4
200.	.3	.7	.1	.4
210.	.2	.5	.0	.3
220.	.2	.5	.0	.3
230.	.2	.4	.0	.2
240.	.2	.4	.0	.3
250.	.3	.5	.0	.3
260.	.3	.6	.1	.4
270.	.2	.4	.2	.6
280.	.1	.3	.3	.7
290.	.0	.2	.3	.5
300.	.0	.2	.3	.5
310.	.0	.2	.3	.4
320.	.0	.2	.3	.4
330.	.0	.2	.3	.5
340.	.0	.3	.4	.5
350.	.1	.3	.5	.6
360.	.3	.2	.6	.5
MAX	.7	.8	.7	.7
DEGR.	90	190	10	280

THE HIGHEST CONCENTRATION OF .80 PPM OCCURRED AT RECEPTOR REC2 .

JOB: HARIwe PA RUN: Hazeltine Riverside we Project

DATE : 2/28/ 8
TIME : 14:18: 2

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1241.	3.5	.0	80.0		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	980.	3.5	.0	80.0		
3. Link_3	524.0	464.0	524.0	423.3	41.	180.	AG	24.	100.0	.0	48.0	.38	2.1
4. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	1154.	3.5	.0	80.0		
5. Link_5	482.0	500.0	482.0	.0	500.	180.	AG	1256.	3.5	.0	92.0		
6. Link_6	482.0	536.0	482.0	586.4	50.	360.	AG	18.	100.0	.0	36.0	.46	2.6
7. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	918.	3.5	.0	80.0		
8. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	1158.	3.5	.0	80.0		
9. Link_9	464.0	482.0	408.8	482.0	55.	270.	AG	25.	100.0	.0	36.0	.52	2.8
10. Link_10	1000.0	518.0	500.0	518.0	500.	270.	AG	905.	3.5	.0	80.0		
11. Link_11	500.0	518.0	.0	518.0	500.	270.	AG	824.	3.5	.0	80.0		
12. Link_12	548.0	518.0	602.3	518.0	54.	90.	AG	25.	100.0	.0	36.0	.51	2.8

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	24	3.0	1241	1600	5.54	3	3
6. Link_6	60	24	3.0	1154	1600	5.54	3	3
9. Link_9	60	33	3.0	918	1600	5.54	3	3
12. Link_12	60	33	3.0	905	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. NW 10 ft	454.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	454.0	454.0	6.0
4. SE 10 ft	558.0	454.0	6.0

RUN: Hazeltine Riverside we Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM)			
	REC1	REC2	REC3	REC4
0.	.3	.2	.6	.5
10.	.4	.1	.7	.4
20.	.3	.0	.5	.3
30.	.3	.0	.5	.2
40.	.3	.0	.5	.2
50.	.3	.0	.5	.3
60.	.3	.0	.5	.3
70.	.3	.0	.5	.3
80.	.5	.1	.6	.4
90.	.7	.2	.5	.3
100.	.7	.4	.4	.1
110.	.6	.4	.2	.1
120.	.5	.3	.2	.0
130.	.4	.3	.2	.0
140.	.5	.3	.3	.0
150.	.5	.3	.3	.0
160.	.7	.3	.4	.0
170.	.7	.3	.4	.1
180.	.5	.6	.3	.3
190.	.5	.9	.2	.4
200.	.3	.7	.1	.5
210.	.2	.5	.0	.3
220.	.2	.5	.0	.3
230.	.2	.4	.0	.2
240.	.2	.5	.0	.3
250.	.3	.5	.0	.3
260.	.3	.6	.1	.4
270.	.2	.5	.2	.6
280.	.1	.3	.3	.7
290.	.0	.2	.3	.5
300.	.0	.2	.3	.5
310.	.0	.2	.3	.4
320.	.0	.2	.3	.5
330.	.0	.3	.3	.5
340.	.1	.4	.4	.6
350.	.1	.4	.5	.6
360.	.3	.2	.6	.5
MAX	.7	.9	.7	.7
DEGR.	90	190	10	280

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC2 .

RUN: Hazeltine Ventura Existing

DATE : 2/28/ 8
TIME : 18:27:16

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_2	500.0	500.0	500.0	1000.0	500.	360.	AG	219.	5.3	.0	68.0		
2. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	835.	5.3	.0	68.0		
3. Link_6	482.0	524.0	482.0	617.8	94.	360.	AG	30.	100.0	.0	36.0	.87	4.8
4. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	1197.	5.3	.0	80.0		
5. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	1423.	5.3	.0	68.0		
6. Link_9	464.0	482.0	435.6	482.0	28.	270.	AG	9.	100.0	.0	36.0	.36	1.4
7. Link_10	1000.0	512.0	500.0	512.0	500.	270.	AG	1479.	5.3	.0	68.0		
8. Link_11	500.0	512.0	.0	512.0	500.	270.	AG	1869.	5.3	.0	68.0		
9. Link_12	500.0	512.0	556.6	512.0	57.	90.	AG	7.	100.0	.0	24.0	.68	2.9

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_6	60	43	3.0	835	1600	5.22	3	3
6. Link_9	60	13	3.0	1197	1600	5.22	3	3
9. Link_12	60	14	3.0	1479	1600	5.22	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. nw 10 ft	454.0	534.0	6.0
2. ne 10 ft	510.0	534.0	6.0
3. sw 10 ft	454.0	454.0	6.0
4. se 10 ft	510.0	454.0	6.0

JOB: C:\Documents and Settings\msullivan\Desk RUN: Hazeltine Ventura Existing

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.4	.4	.6	.7
10.	.6	.2	.9	.4
20.	.5	.0	.8	.4
30.	.3	.0	.6	.4
40.	.4	.0	.5	.5
50.	.4	.1	.6	.6
60.	.3	.1	.5	.7
70.	.3	.1	.7	.8
80.	.6	.3	1.0	.9
90.	1.0	.8	.6	.6
100.	1.3	1.1	.2	.2
110.	1.0	.9	.1	.1
120.	.9	.7	.0	.0
130.	.8	.6	.0	.0
140.	.6	.5	.0	.0
150.	.5	.5	.0	.0
160.	.6	.4	.0	.0
170.	.6	.5	.0	.0
180.	.6	.5	.0	.0
190.	.6	.6	.0	.0
200.	.5	.5	.0	.0
210.	.5	.5	.0	.0
220.	.5	.6	.0	.0
230.	.6	.7	.0	.0
240.	.8	.8	.0	.0
250.	.9	1.0	.1	.1
260.	1.1	1.4	.2	.2
270.	.9	1.1	.5	.5
280.	.4	.5	.9	1.0
290.	.2	.3	.8	.8
300.	.1	.3	.7	.7
310.	.1	.3	.5	.6
320.	.1	.3	.5	.7
330.	.1	.3	.5	.5
340.	.1	.5	.4	.7
350.	.2	.6	.4	.9
360.	.4	.4	.6	.7
MAX	1.3	1.4	1.0	1.0
DEGR.	100	260	80	280

THE HIGHEST CONCENTRATION OF 1.40 PPM OCCURRED AT RECEPTOR REC2 .

JOB: HAVE NP RUN: Hazeltine Ventura No Project

DATE : 2/28/ 8
TIME : 13:18:18

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_2	500.0	500.0	500.0	1000.0	500.	360.	AG	265.	3.5	.0	68.0		
2. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	941.	3.5	.0	68.0		
3. Link_6	482.0	524.0	482.0	885.7	362.	360.	AG	33.	100.0	.0	36.0	1.07	18.4
4. Link_7	.0	482.0	500.0	482.0	500.	90.	AG	1494.	3.5	.0	80.0		
5. Link_8	500.0	482.0	1000.0	482.0	500.	90.	AG	1721.	3.5	.0	68.0		
6. Link_9	464.0	482.0	428.6	482.0	35.	270.	AG	10.	100.0	.0	36.0	.45	1.8
7. Link_10	1000.0	512.0	500.0	512.0	500.	270.	AG	1721.	3.5	.0	68.0		
8. Link_11	500.0	512.0	.0	512.0	500.	270.	AG	2170.	3.5	.0	80.0		
9. Link_12	500.0	512.0	561.1	512.0	61.	90.	AG	6.	100.0	.0	24.0	.77	3.1

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_6	60	44	3.0	941	1600	5.54	3	3
6. Link_9	60	13	3.0	1494	1600	5.54	3	3
9. Link_12	60	13	3.0	1721	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. NW 10 ft	454.0	534.0	6.0
2. NE 10 ft	510.0	534.0	6.0
3. SW 10 ft	454.0	454.0	6.0
4. SE 10 ft	510.0	454.0	6.0

RUN: Hazeltine Ventura No Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.4	.4	.6	.7
10.	.7	.2	.8	.3
20.	.4	.0	.5	.3
30.	.4	.0	.4	.4
40.	.3	.0	.4	.4
50.	.3	.0	.4	.5
60.	.3	.0	.4	.5
70.	.3	.1	.6	.7
80.	.4	.2	.8	.8
90.	.9	.6	.5	.5
100.	1.1	.8	.2	.1
110.	.9	.7	.1	.1
120.	.7	.5	.0	.0
130.	.6	.4	.0	.0
140.	.5	.4	.0	.0
150.	.4	.4	.0	.0
160.	.4	.4	.0	.0
170.	.4	.4	.0	.0
180.	.4	.4	.0	.0
190.	.3	.5	.0	.0
200.	.3	.4	.0	.0
210.	.3	.4	.0	.0
220.	.4	.5	.0	.0
230.	.5	.6	.0	.0
240.	.6	.7	.0	.0
250.	.7	1.0	.1	.1
260.	.9	1.0	.2	.2
270.	.7	.9	.5	.5
280.	.3	.5	.7	.8
290.	.1	.3	.7	.7
300.	.1	.3	.5	.6
310.	.1	.2	.4	.5
320.	.1	.2	.4	.4
330.	.1	.4	.4	.5
340.	.1	.4	.4	.5
350.	.2	.6	.3	.9
360.	.4	.4	.6	.7
MAX	1.1	1.0	.8	.9
DEGR.	100	250	10	350

THE HIGHEST CONCENTRATION OF 1.10 PPM OCCURRED AT RECEPTOR REC1 .

JOB: HAVE PA RUN: Hazeltine Ventura Project

DATE : 2/28/ 8
TIME : 13:24: 4

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_2	500.0	500.0	500.0	1000.0	500.	360.	AG	267.	3.5	.0	68.0		
2. Link_4	482.0	1000.0	482.0	500.0	500.	180.	AG	942.	3.5	.0	68.0		
3. Link_5	482.0	524.0	482.0	896.0	372.	360.	AG	33.	100.0	.0	36.0	1.07	18.9
4. Link_3	.0	482.0	500.0	482.0	500.	90.	AG	1495.	3.5	.0	80.0		
5. Link_6	500.0	482.0	1000.0	482.0	500.	90.	AG	1721.	3.5	.0	68.0		
6. Link_7	464.0	482.0	428.6	482.0	35.	270.	AG	10.	100.0	.0	36.0	.45	1.8
7. Link_8	1000.0	512.0	500.0	512.0	500.	270.	AG	1722.	3.5	.0	68.0		
8. Link_9	500.0	512.0	.0	512.0	500.	270.	AG	2171.	3.5	.0	80.0		
9. Link_10	500.0	512.0	561.3	512.0	61.	90.	AG	6.	100.0	.0	24.0	.77	3.1

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_5	60	44	3.0	942	1600	5.54	3	3
6. Link_7	60	13	3.0	1495	1600	5.54	3	3
9. Link_10	60	13	3.0	1722	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	454.0	534.0	6.0
2. NE 10 ft	510.0	534.0	6.0
3. SW 10 ft	454.0	454.0	6.0
4. SE 10 ft	510.0	454.0	6.0

JOB: C:\Documents and Settings\msullivan\Desk RUN: Hazeltine Ventura Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.4	.4	.6	.7
10.	.7	.2	.8	.3
20.	.4	.0	.5	.3
30.	.4	.0	.4	.4
40.	.3	.0	.4	.4
50.	.3	.0	.4	.5
60.	.3	.0	.4	.5
70.	.3	.1	.6	.7
80.	.4	.2	.8	.8
90.	.9	.6	.5	.5
100.	1.1	.8	.2	.1
110.	.9	.7	.1	.1
120.	.7	.5	.0	.0
130.	.6	.4	.0	.0
140.	.5	.4	.0	.0
150.	.4	.4	.0	.0
160.	.4	.4	.0	.0
170.	.4	.4	.0	.0
180.	.4	.4	.0	.0
190.	.3	.5	.0	.0
200.	.3	.4	.0	.0
210.	.3	.4	.0	.0
220.	.4	.5	.0	.0
230.	.5	.6	.0	.0
240.	.6	.7	.0	.0
250.	.7	1.0	.1	.1
260.	.9	1.0	.2	.2
270.	.7	.9	.5	.5
280.	.3	.5	.7	.8
290.	.1	.3	.7	.7
300.	.1	.3	.5	.6
310.	.1	.2	.4	.5
320.	.1	.2	.4	.4
330.	.1	.4	.4	.5
340.	.1	.4	.4	.5
350.	.2	.6	.3	.9
360.	.4	.4	.6	.7
MAX	1.1	1.0	.8	.9
DEGR.	100	250	10	350

THE HIGHEST CONCENTRATION OF 1.10 PPM OCCURRED AT RECEPTOR REC1 .

JOB: RIVA EX RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 14:57:56

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	518.0	.0	518.0	500.0	500.	360.	AG	2156.	5.6	6.0	56.0		
2. nbd	518.0	500.0	518.0	1000.0	500.	360.	AG	1826.	5.6	6.0	56.0		
3. sba	476.0	1000.0	476.0	500.0	500.	180.	AG	1647.	5.6	6.0	68.0		
4. sbd	476.0	500.0	476.0	.0	500.	180.	AG	1906.	5.6	6.0	56.0		
5. wba	1000.0	518.0	500.0	518.0	500.	270.	AG	709.	5.6	6.0	56.0		
6. ebd	500.0	500.0	1000.0	500.0	500.	90.	AG	780.	5.6	6.0	32.0		
7. nbq	518.0	500.0	518.0	464.7	35.	180.	AG	7.	100.0	6.0	36.0	.59	1.8
8. sbq	476.0	536.0	476.0	556.2	20.	360.	AG	9.	100.0	6.0	48.0	.34	1.0
9. wbq	536.0	518.0	1174.8	518.0	639.	90.	AG	36.	100.0	6.0	36.0	1.27	32.5

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. nbq	60	9	3.0	2156	1600	5.52	3	3
8. sbq	60	9	3.0	1647	1600	5.52	3	3
9. wbq	60	48	3.0	709	1600	5.52	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. nw 10 ft	442.0	546.0	6.0
2. ne 10 ft	546.0	546.0	6.0
3. sw 10 ft	442.0	490.0	6.0
4. se 10 ft	546.0	490.0	6.0

JOB: RIVA   RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.5	.7	.6	1.1
10.	1.0	.1	1.0	.4
20.	.9	.0	.9	.3
30.	.7	.0	.7	.3
40.	.6	.0	.6	.3
50.	.5	.0	.5	.5
60.	.5	.0	.6	.6
70.	.4	.0	.7	.7
80.	.4	.0	1.3	1.1
90.	1.0	.5	1.2	.9
100.	1.1	.8	.6	.2
110.	.9	.6	.6	.1
120.	.7	.6	.6	.0
130.	.7	.4	.6	.0
140.	.6	.3	.7	.0
150.	.9	.3	.9	.0
160.	1.1	.3	1.0	.0
170.	1.3	.4	1.1	.1
180.	.6	1.1	.5	.8
190.	.0	1.7	.0	1.3
200.	.0	1.3	.0	1.1
210.	.0	1.0	.0	.8
220.	.0	.9	.0	.7
230.	.0	.8	.0	.7
240.	.0	.6	.0	.6
250.	.0	.6	.0	.6
260.	.0	.6	.0	.6
270.	.0	.5	.0	.7
280.	.0	.5	.0	.9
290.	.0	.5	.0	.8
300.	.0	.5	.0	.8
310.	.0	.5	.0	.9
320.	.0	.7	.0	.9
330.	.0	.8	.0	1.0
340.	.0	.9	.0	1.3
350.	.1	1.2	.1	1.5
360.	.5	.7	.6	1.1
MAX	1.3	1.7	1.3	1.5
DEGR.	170	190	80	350

THE HIGHEST CONCENTRATION OF 1.70 PPM OCCURRED AT RECEPTOR REC2 .

JOB: RIVA NP RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 15: 6:24

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	518.0	.0	518.0	500.0	500.	360.	AG	2466.	3.5	6.0	56.0		
2. nbd	518.0	500.0	518.0	1000.0	500.	360.	AG	2086.	3.5	6.0	56.0		
3. sba	476.0	1000.0	476.0	500.0	500.	180.	AG	1903.	3.5	6.0	68.0		
4. sbd	476.0	500.0	476.0	.0	500.	180.	AG	2208.	3.5	6.0	56.0		
5. wba	1000.0	518.0	500.0	518.0	500.	270.	AG	816.	3.5	6.0	56.0		
6. ebd	500.0	500.0	1000.0	500.0	500.	90.	AG	891.	3.5	6.0	32.0		
7. nbq	518.0	500.0	518.0	459.5	40.	180.	AG	7.	100.0	6.0	36.0	.67	2.1
8. sbq	476.0	536.0	476.0	559.4	23.	360.	AG	9.	100.0	6.0	48.0	.39	1.2
9. wbq	536.0	518.0	1551.5	518.0	1016.	90.	AG	36.	100.0	6.0	36.0	1.46	51.6

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. nbq	60	9	3.0	2466	1600	5.54	3	3
8. sbq	60	9	3.0	1903	1600	5.54	3	3
9. wbq	60	48	3.0	816	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. nw 10 ft	442.0	546.0	6.0
2. ne 10 ft	546.0	546.0	6.0
3. sw 10 ft	442.0	490.0	6.0
4. se 10 ft	546.0	490.0	6.0

JOB: RIVA RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.4	.3	.8
10.	.7	.1	.7	.4
20.	.7	.0	.7	.3
30.	.5	.0	.5	.3
40.	.4	.0	.4	.3
50.	.4	.0	.4	.3
60.	.4	.0	.4	.5
70.	.4	.0	.6	.6
80.	.3	.0	1.1	.8
90.	.8	.4	.8	.8
100.	.9	.6	.5	.2
110.	.6	.5	.4	.1
120.	.5	.4	.4	.0
130.	.3	.3	.4	.0
140.	.5	.3	.5	.0
150.	.6	.3	.6	.0
160.	.7	.3	.7	.0
170.	.9	.4	.8	.1
180.	.5	.9	.3	.5
190.	.0	1.3	.0	1.0
200.	.0	1.0	.0	.8
210.	.0	.8	.0	.6
220.	.0	.7	.0	.5
230.	.0	.5	.0	.5
240.	.0	.5	.0	.4
250.	.0	.4	.0	.4
260.	.0	.4	.0	.5
270.	.0	.3	.0	.4
280.	.0	.3	.0	.6
290.	.0	.3	.0	.6
300.	.0	.4	.0	.6
310.	.0	.4	.0	.7
320.	.0	.5	.0	.7
330.	.0	.5	.0	.8
340.	.0	.7	.0	1.0
350.	.1	.8	.1	1.1
360.	.3	.4	.3	.8
MAX	.9	1.3	1.1	1.1
DEGR.	100	190	80	350

THE HIGHEST CONCENTRATION OF 1.30 PPM OCCURRED AT RECEPTOR REC2 .

JOB: RIVA PA RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 17:46:21

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	518.0	.0	518.0	500.0	500.	360.	AG	2484.	3.5	6.0	56.0		
2. nbd	518.0	500.0	518.0	1000.0	500.	360.	AG	2131.	3.5	6.0	56.0		
3. sba	476.0	1000.0	476.0	500.0	500.	180.	AG	1918.	3.5	6.0	68.0		
4. sbd	476.0	500.0	476.0	.0	500.	180.	AG	2233.	3.5	6.0	56.0		
5. wba	1000.0	518.0	500.0	518.0	500.	270.	AG	886.	3.5	6.0	56.0		
6. ebd	500.0	500.0	1000.0	500.0	500.	90.	AG	924.	3.5	6.0	32.0		
7. nbq	518.0	500.0	518.0	454.7	45.	180.	AG	7.	100.0	6.0	36.0	.69	2.3
8. sbq	476.0	536.0	476.0	562.2	26.	360.	AG	10.	100.0	6.0	48.0	.40	1.3
9. wbq	536.0	518.0	1517.9	518.0	982.	90.	AG	35.	100.0	6.0	36.0	1.38	49.9

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. nbq	60	10	3.0	2484	1600	5.54	3	3
8. sbq	60	10	3.0	1918	1600	5.54	3	3
9. wbq	60	47	3.0	886	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. nw 10 ft	442.0	546.0	6.0
2. ne 10 ft	546.0	546.0	6.0
3. sw 10 ft	442.0	490.0	6.0
4. se 10 ft	546.0	490.0	6.0

JOB: RIVA RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.4	.3	.8
10.	.7	.1	.7	.4
20.	.7	.0	.7	.3
30.	.5	.0	.5	.3
40.	.4	.0	.4	.3
50.	.4	.0	.4	.3
60.	.4	.0	.5	.5
70.	.4	.0	.6	.6
80.	.4	.0	1.1	1.0
90.	.9	.4	1.1	.8
100.	1.0	.7	.5	.2
110.	.6	.5	.4	.1
120.	.6	.4	.4	.0
130.	.3	.3	.4	.0
140.	.5	.3	.5	.0
150.	.6	.3	.6	.0
160.	.7	.3	.7	.0
170.	.9	.4	.8	.1
180.	.5	.9	.3	.5
190.	.0	1.3	.0	1.0
200.	.0	1.0	.0	.8
210.	.0	.8	.0	.6
220.	.0	.7	.0	.5
230.	.0	.5	.0	.5
240.	.0	.5	.0	.5
250.	.0	.4	.0	.5
260.	.0	.4	.0	.5
270.	.0	.3	.0	.5
280.	.0	.3	.0	.7
290.	.0	.3	.0	.6
300.	.0	.4	.0	.7
310.	.0	.5	.0	.7
320.	.0	.5	.0	.7
330.	.0	.5	.0	.8
340.	.0	.8	.0	1.0
350.	.1	.8	.1	1.1
360.	.3	.4	.3	.8
MAX	1.0	1.3	1.1	1.1
DEGR.	100	190	80	350

THE HIGHEST CONCENTRATION OF 1.30 PPM OCCURRED AT RECEPTOR REC2 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: WORI EX RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 15:32:28

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	530.0	.0	530.0	500.0	500.	360.	AG	1456.	5.6	6.0	80.0		
2. nbd	530.0	500.0	530.0	1000.0	500.	360.	AG	1384.	5.6	6.0	44.0		
3. sba	476.0	1000.0	476.0	500.0	500.	180.	AG	1161.	5.6	6.0	68.0		
4. sbd	476.0	500.0	476.0	.0	500.	180.	AG	1319.	5.6	6.0	44.0		
5. eba	.0	476.0	500.0	476.0	500.	90.	AG	1386.	5.6	6.0	68.0		
6. ebd	500.0	476.0	1000.0	476.0	500.	90.	AG	1263.	5.6	6.0	44.0		
7. wba	1000.0	524.0	500.0	524.0	500.	270.	AG	1400.	5.6	6.0	68.0		
8. wbd	500.0	524.0	.0	524.0	500.	270.	AG	1437.	5.6	6.0	68.0		
9. nbq	530.0	452.0	530.0	407.4	45.	180.	AG	35.	100.0	6.0	60.0	.40	2.3
10. sbq	476.0	548.0	476.0	594.0	46.	360.	AG	29.	100.0	6.0	48.0	.42	2.3
11. ebq	452.0	476.0	446.3	476.0	6.	270.	AG	3.	100.0	6.0	48.0	.48	.3
12. wbq	560.0	524.0	565.7	524.0	6.	90.	AG	3.	100.0	6.0	48.0	.49	.3

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
9. nbq	60	28	3.0	1456	1600	5.52	3	3
10. sbq	60	29	3.0	1161	1600	5.52	3	3
11. ebq	60	3	28.0	1386	1600	5.52	3	3
12. wbq	60	3	28.0	1400	1600	5.52	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. nw 10 ft	442.0	558.0	6.0
2. ne 10 ft	570.0	558.0	6.0
3. sw 10 ft	442.0	442.0	6.0
4. se 10 ft	570.0	442.0	6.0

JOB: WORI RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.2	.7	.7
10.	.6	.0	1.0	.4
20.	.6	.0	1.0	.4
30.	.5	.0	.9	.4
40.	.4	.0	.9	.4
50.	.5	.0	.9	.5
60.	.4	.0	.9	.5
70.	.5	.0	1.2	.7
80.	.4	.1	1.2	.6
90.	.8	.4	.8	.2
100.	1.3	.7	.5	.0
110.	1.0	.6	.4	.0
120.	1.0	.5	.4	.0
130.	.8	.5	.4	.0
140.	.9	.4	.5	.0
150.	.9	.3	.5	.0
160.	1.1	.3	.7	.0
170.	1.2	.3	.7	.1
180.	.8	.6	.2	.3
190.	.4	1.0	.0	.6
200.	.4	.9	.0	.6
210.	.4	.8	.0	.5
220.	.5	.9	.0	.5
230.	.5	.6	.0	.5
240.	.5	.9	.0	.4
250.	.8	1.1	.0	.4
260.	.8	1.2	.1	.4
270.	.4	.7	.4	.7
280.	.1	.3	.8	1.0
290.	.0	.3	.7	.9
300.	.0	.3	.5	.9
310.	.0	.3	.5	.8
320.	.0	.5	.4	.8
330.	.0	.5	.4	1.0
340.	.0	.6	.4	1.1
350.	.1	.5	.4	1.2
360.	.3	.2	.7	.7
MAX	1.3	1.2	1.2	1.2
DEGR.	100	260	70	350

THE HIGHEST CONCENTRATION OF 1.30 PPM OCCURRED AT RECEPTOR REC1 .

JOB: WORI NP RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 15:43:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	530.0	.0	530.0	500.0	500.	360.	AG	1627.	3.5	6.0	80.0		
2. nbd	530.0	500.0	530.0	1000.0	500.	360.	AG	1546.	3.5	6.0	44.0		
3. sba	476.0	1000.0	476.0	500.0	500.	180.	AG	1303.	3.5	6.0	68.0		
4. sbd	476.0	500.0	476.0	.0	500.	180.	AG	1430.	3.5	6.0	44.0		
5. eba	.0	476.0	500.0	476.0	500.	90.	AG	1518.	3.5	6.0	68.0		
6. ebd	500.0	476.0	1000.0	476.0	500.	90.	AG	1439.	3.5	6.0	44.0		
7. wba	1000.0	524.0	500.0	524.0	500.	270.	AG	1592.	3.5	6.0	68.0		
8. wbd	500.0	524.0	.0	524.0	500.	270.	AG	1625.	3.5	6.0	68.0		
9. nbq	530.0	452.0	530.0	402.2	50.	180.	AG	35.	100.0	6.0	60.0	.45	2.5
10. sbq	476.0	548.0	476.0	599.5	52.	360.	AG	29.	100.0	6.0	48.0	.47	2.6
11. ebq	452.0	476.0	445.8	476.0	6.	270.	AG	3.	100.0	6.0	48.0	.53	.3
12. wbq	560.0	524.0	566.5	524.0	7.	90.	AG	3.	100.0	6.0	48.0	.55	.3

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
9. nbq	60	28	3.0	1627	1600	5.54	3	3
10. sbq	60	29	3.0	1303	1600	5.54	3	3
11. ebq	60	3	28.0	1518	1600	5.54	3	3
12. wbq	60	3	28.0	1592	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. nw 10 ft	442.0	558.0	6.0
2. ne 10 ft	570.0	558.0	6.0
3. sw 10 ft	442.0	442.0	6.0
4. se 10 ft	570.0	442.0	6.0

RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.2	.1	.4	.4
10.	.4	.0	.6	.2
20.	.5	.0	.7	.2
30.	.3	.0	.6	.2
40.	.4	.0	.6	.3
50.	.3	.0	.5	.3
60.	.3	.0	.6	.4
70.	.3	.0	.7	.5
80.	.3	.1	.8	.4
90.	.6	.3	.6	.1
100.	.8	.5	.3	.0
110.	.7	.5	.2	.0
120.	.5	.3	.2	.0
130.	.6	.3	.3	.0
140.	.5	.3	.3	.0
150.	.7	.3	.4	.0
160.	.8	.2	.5	.0
170.	.9	.2	.4	.0
180.	.6	.5	.1	.2
190.	.2	.6	.0	.5
200.	.3	.6	.0	.4
210.	.3	.6	.0	.3
220.	.3	.7	.0	.4
230.	.3	.6	.0	.4
240.	.4	.6	.0	.4
250.	.5	.7	.0	.3
260.	.5	.8	.0	.3
270.	.3	.5	.3	.6
280.	.1	.3	.5	.8
290.	.0	.2	.5	.7
300.	.0	.3	.4	.7
310.	.0	.3	.3	.5
320.	.0	.3	.3	.7
330.	.0	.3	.3	.5
340.	.0	.4	.2	.6
350.	.0	.4	.2	.7
360.	.2	.1	.4	.4
MAX	.9	.8	.8	.8
DEGR.	170	260	80	280

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC1 .

JOB: WORI PA RUN: CAL3QHC RUN

DATE : 2/28/ 8
TIME : 17:39:36

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. nba	530.0	.0	530.0	500.0	500.	360.	AG	1698.	3.5	6.0	80.0		
2. nbd	530.0	500.0	530.0	1000.0	500.	360.	AG	1546.	3.5	6.0	44.0		
3. sba	476.0	1000.0	476.0	500.0	500.	180.	AG	1325.	3.5	6.0	68.0		
4. sbd	476.0	500.0	476.0	.0	500.	180.	AG	1788.	3.5	6.0	44.0		
5. eba	.0	476.0	500.0	476.0	500.	90.	AG	1902.	3.5	6.0	68.0		
6. ebd	500.0	476.0	1000.0	476.0	500.	90.	AG	1475.	3.5	6.0	44.0		
7. wba	1000.0	524.0	500.0	524.0	500.	270.	AG	1638.	3.5	6.0	68.0		
8. wbd	500.0	524.0	.0	524.0	500.	270.	AG	1754.	3.5	6.0	68.0		
9. nbq	530.0	452.0	530.0	394.5	57.	180.	AG	38.	100.0	6.0	60.0	.53	2.9
10. sbq	476.0	548.0	476.0	604.1	56.	360.	AG	31.	100.0	6.0	48.0	.52	2.9
11. ebq	452.0	476.0	444.1	476.0	8.	270.	AG	3.	100.0	6.0	48.0	.61	.4
12. wbq	560.0	524.0	566.7	524.0	7.	90.	AG	3.	100.0	6.0	48.0	.53	.3

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
9. nbq	60	31	3.0	1698	1600	5.54	3	3
10. sbq	60	31	3.0	1325	1600	5.54	3	3
11. ebq	60	3	26.0	1902	1600	5.54	3	3
12. wbq	60	3	26.0	1638	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. nw 10 ft	442.0	558.0	6.0
2. ne 10 ft	570.0	558.0	6.0
3. sw 10 ft	442.0	442.0	6.0
4. se 10 ft	570.0	442.0	6.0

JOB: WORI RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.2	.1	.5	.4
10.	.4	.0	.7	.2
20.	.5	.0	.8	.2
30.	.4	.0	.6	.3
40.	.4	.0	.7	.3
50.	.3	.0	.6	.3
60.	.3	.0	.8	.4
70.	.3	.0	.8	.5
80.	.3	.1	.9	.4
90.	.6	.3	.7	.1
100.	.8	.5	.4	.0
110.	.7	.5	.4	.0
120.	.6	.3	.3	.0
130.	.6	.3	.3	.0
140.	.6	.3	.4	.0
150.	.7	.3	.5	.0
160.	.8	.3	.5	.0
170.	1.0	.3	.5	.0
180.	.6	.5	.2	.3
190.	.3	.7	.0	.5
200.	.3	.8	.0	.5
210.	.4	.7	.0	.5
220.	.4	.7	.0	.4
230.	.4	.6	.0	.4
240.	.5	.7	.0	.4
250.	.6	.7	.0	.4
260.	.7	.9	.1	.4
270.	.3	.6	.3	.7
280.	.1	.3	.6	1.0
290.	.0	.2	.6	.8
300.	.0	.3	.5	.8
310.	.0	.3	.4	.6
320.	.0	.3	.3	.7
330.	.0	.3	.3	.5
340.	.0	.4	.3	.7
350.	.0	.4	.3	.7
360.	.2	.1	.5	.4
MAX	1.0	.9	.9	1.0
DEGR.	170	260	80	280

THE HIGHEST CONCENTRATION OF 1.00 PPM OCCURRED AT RECEPTOR REC1 .

JOB: WORIwe EX RUN: Woodman Riverside we Existing

DATE : 8/13/ 7
TIME : 18:22:14

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	530.0	.0	530.0	500.0	500.	360.	AG	1367.	5.3	.0	****		
2. Link_2	530.0	500.0	530.0	1000.0	500.	360.	AG	1005.	5.3	.0	92.0		
3. Link_3	530.0	452.0	530.0	411.7	40.	180.	AG	32.	100.0	.0	60.0	.37	2.0
4. Link_4	476.0	1000.0	476.0	500.0	500.	180.	AG	1141.	5.3	.0	****		
5. Link_5	476.0	500.0	476.0	.0	500.	180.	AG	1465.	5.3	.0	****		
6. Link_6	476.0	548.0	476.0	590.1	42.	360.	AG	25.	100.0	.0	48.0	.38	2.1
7. Link_7	.0	476.0	500.0	476.0	500.	90.	AG	1339.	5.3	.0	92.0		
8. Link_8	500.0	476.0	1000.0	476.0	500.	90.	AG	1061.	5.3	.0	92.0		
9. Link_9	452.0	476.0	397.2	476.0	55.	270.	AG	28.	100.0	.0	48.0	.50	2.8
10. Link_10	1000.0	524.0	500.0	524.0	500.	270.	AG	959.	5.3	.0	92.0		
11. Link_11	500.0	524.0	.0	524.0	500.	270.	AG	1275.	5.3	.0	92.0		
12. Link_12	560.0	524.0	599.2	524.0	39.	90.	AG	28.	100.0	.0	48.0	.36	2.0

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	27	3.0	1367	1600	5.22	3	3
6. Link_6	60	27	3.0	1141	1600	5.22	3	3
9. Link_9	60	30	3.0	1339	1600	5.22	3	3
12. Link_12	60	30	3.0	959	1600	5.22	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	442.0	558.0	6.0
2. NE 10 ft	570.0	558.0	6.0
3. SW 10 ft	442.0	442.0	6.0
4. SE 10 ft	570.0	442.0	6.0

RUN: Woodman Riverside we Existing

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.3	.8	.5
10.	.4	.1	1.0	.4
20.	.5	.0	.9	.4
30.	.4	.0	.8	.3
40.	.3	.0	.8	.3
50.	.4	.0	.8	.3
60.	.4	.0	.7	.4
70.	.4	.1	.9	.5
80.	.5	.1	1.0	.5
90.	.6	.3	.9	.3
100.	.9	.4	.6	.1
110.	.7	.5	.5	.1
120.	.8	.4	.4	.0
130.	.7	.4	.4	.0
140.	.8	.4	.5	.0
150.	.8	.3	.5	.0
160.	.9	.3	.6	.1
170.	1.1	.5	.7	.2
180.	.9	.7	.4	.4
190.	.6	1.0	.2	.7
200.	.6	.8	.1	.6
210.	.5	.7	.1	.5
220.	.4	.7	.0	.4
230.	.4	.8	.0	.4
240.	.5	.7	.1	.5
250.	.6	.8	.2	.6
260.	.7	.8	.2	.7
270.	.4	.7	.5	.9
280.	.2	.4	.7	1.2
290.	.2	.2	.6	.8
300.	.0	.3	.6	.9
310.	.0	.3	.6	.8
320.	.0	.4	.5	.8
330.	.0	.4	.6	.8
340.	.1	.5	.5	.8
350.	.2	.5	.6	.8
360.	.3	.3	.8	.5
MAX	1.1	1.0	1.0	1.2
DEGR.	170	190	10	280

THE HIGHEST CONCENTRATION OF 1.20 PPM OCCURRED AT RECEPTOR REC4 .

JOB: WORIwe NP RUN: Woodman Riverside we No Project

DATE : 2/28/ 8
TIME : 14: 4:29

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	530.0	.0	530.0	500.0	500.	360.	AG	1553.	3.5	.0	****		
2. Link_2	530.0	500.0	530.0	1000.0	500.	360.	AG	1144.	3.5	.0	92.0		
3. Link_3	530.0	452.0	530.0	448.3	4.	180.	AG	401.	100.0	.0	****	.03	.2
4. Link_4	.0	476.0	500.0	476.0	500.	90.	AG	1542.	3.5	.0	92.0		
5. Link_5	500.0	476.0	1000.0	476.0	500.	90.	AG	1253.	3.5	.0	92.0		
6. Link_6	452.0	476.0	388.8	476.0	63.	270.	AG	30.	100.0	.0	48.0	.58	3.2
7. Link_7	476.0	1000.0	476.0	500.0	500.	180.	AG	1296.	3.5	.0	****		
8. Link_8	476.0	500.0	476.0	.0	500.	180.	AG	1673.	3.5	.0	****		
9. Link_9	476.0	548.0	476.0	595.8	48.	360.	AG	27.	100.0	.0	48.0	.43	2.4
10. Link_10	1000.0	524.0	500.0	524.0	500.	270.	AG	1141.	3.5	.0	92.0		
11. Link_11	500.0	524.0	.0	524.0	500.	270.	AG	1462.	3.5	.0	92.0		
12. Link_12	560.0	524.0	606.8	524.0	47.	90.	AG	30.	100.0	.0	48.0	.43	2.4

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	27	3.0	1553	1600	5.54	3	3
6. Link_6	60	30	3.0	1542	1600	5.54	3	3
9. Link_9	60	27	3.0	1296	1600	5.54	3	3
12. Link_12	60	30	3.0	1141	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. NW 10 ft	442.0	558.0	6.0
2. NE 10 ft	570.0	558.0	6.0
3. SW 10 ft	442.0	442.0	6.0
4. SE 10 ft	570.0	442.0	6.0

RUN: Woodman Riverside we No Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.2	.2	.6	.6
10.	.4	.1	.7	.4
20.	.3	.0	.5	.2
30.	.3	.0	.5	.2
40.	.3	.0	.7	.2
50.	.3	.0	.6	.3
60.	.3	.0	.5	.3
70.	.4	.0	.5	.3
80.	.4	.1	.7	.4
90.	.6	.2	.6	.3
100.	.7	.4	.4	.1
110.	.6	.4	.4	.0
120.	.5	.3	.3	.0
130.	.5	.3	.3	.0
140.	.7	.3	.3	.0
150.	.6	.3	.5	.0
160.	.7	.3	.5	.0
170.	.8	.4	.5	.1
180.	.7	.6	.3	.3
190.	.5	.9	.2	.4
200.	.4	.7	.1	.5
210.	.3	.6	.0	.5
220.	.3	.6	.0	.5
230.	.4	.4	.0	.4
240.	.4	.6	.0	.4
250.	.5	.7	.1	.2
260.	.5	.8	.1	.4
270.	.3	.5	.3	.6
280.	.1	.4	.5	1.0
290.	.1	.2	.5	.8
300.	.0	.2	.5	.6
310.	.0	.2	.4	.6
320.	.0	.2	.4	.7
330.	.0	.3	.4	.6
340.	.1	.3	.5	.6
350.	.1	.4	.5	.7
360.	.2	.2	.6	.6
MAX	.8	.9	.7	1.0
DEGR.	170	190	10	280

THE HIGHEST CONCENTRATION OF 1.00 PPM OCCURRED AT RECEPTOR REC4 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: WORIwe PA RUN: Woodman Riverside we Project

DATE : 2/28/ 8
TIME : 13:59:22

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	530.0	.0	530.0	500.0	500.	360.	AG	1655.	3.5	.0	****		
2. Link_2	530.0	500.0	530.0	1000.0	500.	360.	AG	1155.	3.5	.0	92.0		
3. Link_3	476.0	1000.0	476.0	500.0	500.	180.	AG	1329.	3.5	.0	****		
4. Link_4	476.0	500.0	476.0	.0	500.	180.	AG	1862.	3.5	.0	****		
5. Link_5	.0	476.0	500.0	476.0	500.	90.	AG	1771.	3.5	.0	92.0		
6. Link_6	500.0	476.0	1000.0	476.0	500.	90.	AG	1297.	3.5	.0	92.0		
7. Link_7	1000.0	524.0	500.0	524.0	500.	270.	AG	1208.	3.5	.0	92.0		
8. Link_8	500.0	524.0	.0	524.0	500.	270.	AG	1649.	3.5	.0	92.0		
9. Link_9	530.0	452.0	530.0	399.5	52.	180.	AG	36.	100.0	.0	60.0	.48	2.7
10. Link_10	476.0	548.0	476.0	600.6	53.	360.	AG	29.	100.0	.0	48.0	.48	2.7
11. Link_11	452.0	476.0	384.3	476.0	68.	270.	AG	28.	100.0	.0	48.0	.61	3.4
12. Link_12	560.0	524.0	606.2	524.0	46.	90.	AG	28.	100.0	.0	48.0	.42	2.3

LINK COORDINATES (FT): X1, Y1, X2, Y2

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
9. Link_9	60	29	3.0	1655	1600	5.54	3	3
10. Link_10	60	29	3.0	1329	1600	5.54	3	3
11. Link_11	60	28	3.0	1771	1600	5.54	3	3
12. Link_12	60	28	3.0	1208	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	442.0	558.0	6.0
2. NE 10 ft	570.0	558.0	6.0
3. SW 10 ft	442.0	442.0	6.0
4. SE 10 ft	570.0	442.0	6.0

COORDINATES (FT): X, Y, Z

RUN: Woodman Riverside we Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.2	.7	.5
10.	.4	.1	.8	.4
20.	.3	.0	.6	.3
30.	.4	.0	.6	.2
40.	.4	.0	.8	.2
50.	.3	.0	.8	.3
60.	.3	.0	.7	.3
70.	.4	.0	.8	.3
80.	.5	.1	.7	.4
90.	.6	.3	.7	.3
100.	.7	.4	.6	.1
110.	.6	.4	.5	.0
120.	.6	.3	.3	.0
130.	.6	.4	.3	.0
140.	.7	.3	.4	.0
150.	.7	.3	.5	.0
160.	.8	.3	.5	.0
170.	.8	.4	.5	.1
180.	.6	.6	.4	.3
190.	.6	.9	.2	.5
200.	.5	.7	.1	.5
210.	.3	.6	.0	.4
220.	.4	.6	.0	.5
230.	.4	.5	.0	.5
240.	.4	.7	.1	.4
250.	.5	.7	.1	.4
260.	.6	.8	.2	.5
270.	.4	.6	.4	.7
280.	.1	.5	.5	.9
290.	.1	.2	.6	.8
300.	.0	.2	.6	.6
310.	.0	.2	.5	.6
320.	.0	.3	.4	.6
330.	.0	.3	.5	.5
340.	.1	.4	.5	.6
350.	.1	.4	.6	.6
360.	.3	.2	.7	.5
MAX	.8	.9	.8	.9
DEGR.	170	190	10	280

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC2 .

JOB: WO10 EX RUN: Woodman 101 Westbound Ramp Existing

DATE : 2/28/ 8
TIME : 18:31:20

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1500.	5.3	.0	****		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1549.	5.3	.0	****		
3. Link_3	524.0	500.0	524.0	475.4	25.	180.	AG	11.	100.0	.0	48.0	.33	1.3
4. Link_4	470.0	1000.0	470.0	500.0	500.	180.	AG	1403.	5.3	.0	****		
5. Link_5	470.0	500.0	470.0	.0	500.	180.	AG	1319.	5.3	.0	****		
6. Link_6	470.0	536.0	470.0	554.4	18.	360.	AG	14.	100.0	.0	60.0	.24	.9
7. Link_7	1000.0	518.0	500.0	518.0	500.	270.	AG	765.	5.3	.0	56.0		
8. Link_8	500.0	518.0	.0	518.0	500.	270.	AG	800.	5.3	.0	32.0		
9. Link_9	548.0	518.0	668.3	518.0	120.	90.	AG	32.	100.0	.0	36.0	.96	6.1

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	12	3.0	1500	1600	5.22	3	3
6. Link_6	60	12	3.0	1403	1600	5.26	3	3
9. Link_9	60	45	3.0	765	1600	5.22	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. NW 10 ft	430.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	430.0	490.0	6.0
4. SE 10 ft	558.0	490.0	6.0

RUN: Woodman 101 Westbound Ramp Existing

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.4	.5	.5	.7
10.	.6	.2	.7	.4
20.	.7	.1	.7	.3
30.	.5	.1	.5	.2
40.	.4	.0	.7	.2
50.	.4	.0	.7	.3
60.	.4	.0	.7	.3
70.	.4	.1	.5	.4
80.	.4	.1	.7	.4
90.	.6	.3	.4	.3
100.	.7	.4	.4	.0
110.	.5	.4	.4	.0
120.	.7	.3	.4	.0
130.	.6	.3	.4	.0
140.	.6	.2	.4	.0
150.	.6	.3	.5	.1
160.	.7	.4	.6	.1
170.	.7	.5	.6	.3
180.	.5	.7	.4	.4
190.	.3	.9	.2	.7
200.	.2	.7	.1	.7
210.	.1	.7	.0	.5
220.	.2	.6	.0	.4
230.	.2	.5	.0	.4
240.	.2	.6	.0	.4
250.	.2	.6	.0	.3
260.	.3	.8	.0	.3
270.	.1	.7	.1	.6
280.	.0	.4	.3	.9
290.	.1	.4	.2	.6
300.	.0	.4	.2	.7
310.	.0	.4	.2	.6
320.	.0	.5	.2	.6
330.	.0	.6	.1	.7
340.	.1	.7	.2	.9
350.	.2	.7	.3	.9
360.	.4	.5	.5	.7
MAX	.7	.9	.7	.9
DEGR.	20	190	10	280

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC2 .

JOB: WO10 PA RUN: Woodman 101 Wesbound Ramp No Project

DATE : 2/28/ 8
TIME : 13:39:19

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1677.	3.5	.0	****		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1730.	3.5	.0	****		
3. Link_3	524.0	500.0	524.0	472.5	27.	180.	AG	12.	100.0	.0	48.0	.37	1.4
4. Link_4	470.0	1000.0	470.0	500.0	500.	180.	AG	1570.	3.5	.0	****		
5. Link_5	470.0	500.0	470.0	.0	500.	180.	AG	1496.	3.5	.0	****		
6. Link_6	470.0	536.0	470.0	556.6	21.	360.	AG	15.	100.0	.0	60.0	.27	1.0
7. Link_7	1000.0	518.0	500.0	518.0	500.	270.	AG	859.	3.5	.0	56.0		
8. Link_8	500.0	518.0	.0	518.0	500.	270.	AG	880.	3.5	.0	32.0		
9. Link_9	548.0	518.0	901.1	518.0	353.	90.	AG	33.	100.0	.0	36.0	1.08	17.9

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	12	3.0	1677	1600	5.54	3	3
6. Link_6	60	12	3.0	1570	1600	5.54	3	3
9. Link_9	60	45	3.0	859	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. NW 10 ft	430.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	430.0	490.0	6.0
4. SE 10 ft	558.0	490.0	6.0

RUN: Woodman 101 Wesbound Ramp No Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.3	.4	.5
10.	.4	.2	.6	.4
20.	.5	.1	.5	.3
30.	.4	.0	.5	.2
40.	.4	.0	.5	.2
50.	.3	.0	.3	.2
60.	.2	.0	.4	.3
70.	.2	.1	.5	.4
80.	.2	.1	.7	.5
90.	.4	.4	.4	.3
100.	.6	.5	.2	.0
110.	.4	.4	.2	.0
120.	.4	.3	.2	.0
130.	.4	.2	.2	.0
140.	.4	.3	.4	.0
150.	.5	.2	.4	.0
160.	.6	.3	.5	.1
170.	.7	.4	.4	.2
180.	.4	.6	.3	.3
190.	.3	.8	.1	.5
200.	.2	.7	.1	.5
210.	.1	.5	.0	.4
220.	.1	.4	.0	.3
230.	.1	.4	.0	.3
240.	.1	.6	.0	.3
250.	.2	.4	.0	.2
260.	.2	.5	.0	.2
270.	.1	.4	.1	.4
280.	.0	.2	.2	.6
290.	.0	.2	.2	.5
300.	.0	.3	.1	.5
310.	.0	.3	.1	.4
320.	.0	.4	.1	.4
330.	.0	.5	.1	.5
340.	.1	.5	.2	.7
350.	.1	.5	.2	.7
360.	.3	.3	.4	.5
MAX	.7	.8	.7	.7
DEGR.	170	190	80	340

THE HIGHEST CONCENTRATION OF .80 PPM OCCURRED AT RECEPTOR REC2 .

JOB: WO10 PA RUN: Woodman 101 Westbound Ramp Project

DATE : 2/28/ 8
TIME : 13:44:25

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1708.	3.5	.0	****		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1794.	3.5	.0	****		
3. Link_3	524.0	500.0	524.0	472.0	28.	180.	AG	12.	100.0	.0	48.0	.37	1.4
4. Link_4	470.0	1000.0	470.0	500.0	500.	180.	AG	1670.	3.5	.0	****		
5. Link_5	470.0	500.0	470.0	.0	500.	180.	AG	1563.	3.5	.0	****		
6. Link_6	470.0	536.0	470.0	557.9	22.	360.	AG	15.	100.0	.0	60.0	.29	1.1
7. Link_7	1000.0	518.0	500.0	518.0	500.	270.	AG	892.	3.5	.0	56.0		
8. Link_8	500.0	518.0	.0	518.0	500.	270.	AG	913.	3.5	.0	32.0		
9. Link_9	548.0	518.0	1015.3	518.0	467.	90.	AG	33.	100.0	.0	36.0	1.12	23.7

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. Link_3	60	12	3.0	1708	1600	5.54	3	3
6. Link_6	60	12	3.0	1670	1600	5.54	3	3
9. Link_9	60	45	3.0	892	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	430.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	430.0	490.0	6.0
4. SE 10 ft	558.0	490.0	6.0

RUN: Woodman 101 Westbound Ramp Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.3	.4	.5
10.	.4	.2	.6	.4
20.	.5	.1	.6	.3
30.	.4	.0	.5	.2
40.	.4	.0	.5	.2
50.	.4	.0	.3	.2
60.	.3	.0	.4	.4
70.	.2	.1	.5	.4
80.	.2	.1	.7	.5
90.	.5	.4	.5	.3
100.	.6	.5	.2	.0
110.	.4	.4	.2	.0
120.	.5	.4	.2	.0
130.	.4	.2	.2	.0
140.	.4	.3	.4	.0
150.	.5	.3	.4	.0
160.	.6	.3	.5	.1
170.	.7	.4	.4	.2
180.	.4	.6	.3	.3
190.	.3	.8	.1	.5
200.	.2	.7	.1	.5
210.	.1	.5	.0	.4
220.	.1	.4	.0	.4
230.	.1	.4	.0	.3
240.	.1	.6	.0	.3
250.	.2	.4	.0	.3
260.	.2	.5	.0	.2
270.	.1	.4	.1	.4
280.	.0	.2	.2	.6
290.	.0	.3	.2	.5
300.	.0	.3	.1	.5
310.	.0	.3	.1	.4
320.	.0	.4	.1	.5
330.	.0	.5	.1	.5
340.	.1	.5	.2	.7
350.	.2	.5	.3	.8
360.	.3	.3	.4	.5
MAX	.7	.8	.7	.8
DEGR.	170	190	80	350

THE HIGHEST CONCENTRATION OF .80 PPM OCCURRED AT RECEPTOR REC2 .

JOB: WO10we EX RUN: Woodman 101 Westbound Ramp Existing

DATE : 8/13/ 7
TIME : 18:48:33

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1407.	5.3	.0	****		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1266.	5.3	.0	****		
3. Link_3	470.0	1000.0	470.0	500.0	500.	180.	AG	1555.	5.3	.0	****		
4. Link_4	470.0	500.0	470.0	.0	500.	180.	AG	1380.	5.3	.0	****		
5. Link_5	1000.0	518.0	500.0	518.0	500.	270.	AG	596.	5.3	.0	56.0		
6. Link_6	500.0	518.0	.0	518.0	500.	270.	AG	912.	5.3	.0	32.0		
7. Link_7	524.0	500.0	524.0	480.8	19.	180.	AG	9.	100.0	.0	48.0	.29	1.0
8. Link_8	470.0	536.0	470.0	553.0	17.	360.	AG	12.	100.0	.0	60.0	.26	.9
9. Link_9	548.0	518.0	640.8	518.0	93.	90.	AG	33.	100.0	.0	36.0	.93	4.7

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. Link_7	60	10	3.0	1407	1600	5.22	3	3
8. Link_8	60	10	3.0	1555	1600	5.22	3	3
9. Link_9	60	47	3.0	596	1600	5.22	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	430.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	430.0	490.0	6.0
4. SE 10 ft	558.0	490.0	6.0

RUN: Woodman 101 Westbound Ramp Existing

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.4	.4	.5	.7
10.	.6	.2	.8	.4
20.	.6	.1	.7	.3
30.	.5	.0	.7	.2
40.	.5	.0	.7	.2
50.	.4	.0	.7	.2
60.	.3	.0	.6	.3
70.	.3	.1	.5	.3
80.	.3	.1	.6	.4
90.	.5	.3	.5	.3
100.	.6	.4	.3	.0
110.	.5	.3	.3	.0
120.	.6	.3	.4	.0
130.	.6	.2	.4	.0
140.	.7	.3	.4	.0
150.	.7	.3	.5	.1
160.	.7	.4	.7	.1
170.	.8	.5	.6	.2
180.	.5	.7	.4	.4
190.	.3	.9	.2	.6
200.	.2	.8	.1	.7
210.	.3	.6	.0	.5
220.	.2	.5	.0	.4
230.	.2	.6	.0	.4
240.	.2	.6	.0	.4
250.	.3	.5	.0	.3
260.	.3	.7	.0	.3
270.	.2	.6	.2	.6
280.	.0	.4	.3	.8
290.	.1	.4	.3	.6
300.	.0	.4	.2	.6
310.	.0	.4	.2	.5
320.	.0	.4	.2	.6
330.	.0	.6	.2	.6
340.	.1	.6	.2	.9
350.	.2	.6	.3	.8
360.	.4	.4	.5	.7
MAX	.8	.9	.8	.9
DEGR.	170	190	10	340

THE HIGHEST CONCENTRATION OF .90 PPM OCCURRED AT RECEPTOR REC4 .

JOB: WO10we NP RUN: Woodman 101 Westbound Ramp we No Project

DATE : 2/28/ 8
TIME : 14:23:39

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1598.	3.5	.0	****		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1443.	3.5	.0	****		
3. Link_3	470.0	1000.0	470.0	500.0	500.	180.	AG	1772.	3.5	.0	****		
4. Link_4	470.0	500.0	470.0	.0	500.	180.	AG	1607.	3.5	.0	****		
5. Link_5	1000.0	518.0	500.0	518.0	500.	270.	AG	690.	3.5	.0	56.0		
6. Link_6	500.0	518.0	.0	518.0	500.	270.	AG	1010.	3.5	.0	32.0		
7. Link_7	524.0	500.0	524.0	478.2	22.	180.	AG	10.	100.0	.0	48.0	.33	1.1
8. Link_8	470.0	536.0	470.0	555.4	19.	360.	AG	12.	100.0	.0	60.0	.30	1.0
9. Link_9	548.0	518.0	244.4	518.0	304.	270.	AG	35.	100.0	.0	36.0	1.08	15.4

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. Link_7	60	10	3.0	1598	1600	5.54	3	3
8. Link_8	60	10	3.0	1772	1600	5.54	3	3
9. Link_9	60	47	3.0	690	1600	5.54	3	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. NW 10 ft	430.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	430.0	490.0	6.0
4. SE 1- ft	558.0	490.0	6.0

RUN: Woodman 101 Westbound Ramp we No Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.3	.3	.5	.4
10.	.5	.2	.7	.3
20.	.5	.1	.7	.2
30.	.5	.0	.6	.1
40.	.3	.0	.5	.1
50.	.3	.0	.5	.1
60.	.3	.0	.6	.1
70.	.3	.0	.7	.2
80.	.2	.0	.5	.2
90.	.3	.1	.3	.1
100.	.4	.2	.2	.0
110.	.6	.2	.2	.0
120.	.6	.1	.2	.0
130.	.5	.1	.3	.0
140.	.5	.1	.3	.0
150.	.6	.1	.4	.0
160.	.7	.2	.5	.1
170.	.8	.3	.4	.2
180.	.5	.5	.3	.3
190.	.4	.7	.1	.5
200.	.3	.7	.1	.5
210.	.2	.6	.0	.4
220.	.2	.5	.0	.4
230.	.2	.5	.0	.2
240.	.4	.7	.0	.2
250.	.4	.6	.0	.2
260.	.4	.7	.0	.2
270.	.2	.4	.2	.4
280.	.0	.2	.4	.7
290.	.0	.2	.4	.7
300.	.0	.2	.4	.7
310.	.0	.3	.2	.5
320.	.0	.4	.2	.5
330.	.0	.4	.2	.6
340.	.1	.4	.3	.6
350.	.2	.5	.4	.6
360.	.3	.3	.5	.4
MAX	.8	.7	.7	.7
DEGR.	170	190	10	280

THE HIGHEST CONCENTRATION OF .80 PPM OCCURRED AT RECEPTOR REC1 .

JOB: WO10we PA RUN: Woodman 101 Westbound Ramp Project

DATE : 8/13/ 7
TIME : 19: 3:47

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM
U = 1.0 M/S CLAS = 6 (F) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Link_1	524.0	.0	524.0	500.0	500.	360.	AG	1585.	4.0	.0	****		
2. Link_2	524.0	500.0	524.0	1000.0	500.	360.	AG	1484.	4.0	.0	****		
3. Link_3	470.0	1000.0	470.0	500.0	500.	180.	AG	1834.	4.0	.0	****		
4. Link_4	470.0	500.0	470.0	.0	500.	180.	AG	1634.	4.0	.0	****		
5. Link_5	1000.0	518.0	500.0	518.0	500.	270.	AG	714.	4.0	.0	56.0		
6. Link_6	500.0	518.0	.0	518.0	500.	270.	AG	1015.	4.0	.0	32.0		
7. Link_7	524.0	500.0	524.0	478.3	22.	180.	AG	9.	100.0	.0	48.0	.33	1.1
8. Link_8	470.0	536.0	470.0	556.0	20.	360.	AG	12.	100.0	.0	60.0	.31	1.0
9. Link_9	548.0	518.0	935.1	518.0	387.	90.	AG	33.	100.0	.0	36.0	1.12	19.7

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
7. Link_7	60	10	3.0	1585	1600	5.27	3	3
8. Link_8	60	10	3.0	1834	1600	5.27	3	3
9. Link_9	60	47	3.0	714	1600	5.27	3	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NW 10 ft	430.0	546.0	6.0
2. NE 10 ft	558.0	546.0	6.0
3. SW 10 ft	430.0	490.0	6.0
4. SE 10 ft	558.0	490.0	6.0

RUN: Woodman 101 Westbound Ramp Project

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4
0.	.4	.3	.5	.5
10.	.5	.2	.6	.4
20.	.6	.1	.6	.3
30.	.5	.0	.5	.2
40.	.4	.0	.6	.2
50.	.3	.0	.6	.2
60.	.3	.0	.5	.3
70.	.3	.1	.5	.4
80.	.3	.0	.7	.4
90.	.5	.3	.4	.4
100.	.7	.4	.3	.0
110.	.5	.4	.3	.0
120.	.6	.3	.3	.0
130.	.6	.2	.4	.0
140.	.4	.2	.4	.0
150.	.6	.2	.5	.0
160.	.6	.3	.5	.1
170.	.7	.4	.5	.2
180.	.5	.6	.4	.4
190.	.3	.8	.2	.6
200.	.2	.7	.1	.5
210.	.1	.5	.0	.4
220.	.1	.4	.0	.4
230.	.2	.4	.0	.4
240.	.2	.5	.0	.3
250.	.2	.5	.0	.3
260.	.3	.7	.0	.3
270.	.1	.5	.1	.4
280.	.0	.2	.3	.6
290.	.1	.3	.2	.6
300.	.0	.3	.2	.6
310.	.0	.4	.2	.5
320.	.0	.4	.1	.5
330.	.0	.4	.1	.5
340.	.1	.6	.2	.8
350.	.2	.5	.3	.7
360.	.4	.3	.5	.5
MAX	.7	.8	.7	.8
DEGR.	170	190	80	340

THE HIGHEST CONCENTRATION OF .80 PPM OCCURRED AT RECEPTOR REC2 .

Appendix D

Construction Emission Calculations and Output Files

3/5/2008 2:29:35 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Construction\Construction.urb924

Project Name: Sherman Oaks Fashion Square Construction

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008 TOTALS (lbs/day unmitigated)	5.10	39.01	54.88	0.05	54.60	2.02	55.48	11.40	1.85	12.21	6,636.25
2008 TOTALS (lbs/day mitigated)	5.10	39.01	54.88	0.05	28.29	2.02	29.17	5.91	1.85	6.72	6,636.25
2009 TOTALS (lbs/day unmitigated)	11.54	133.11	55.93	0.12	100.43	5.91	106.34	21.03	5.44	26.46	15,653.62
2009 TOTALS (lbs/day mitigated)	11.54	133.11	55.93	0.12	52.24	5.91	58.15	10.96	5.44	16.40	15,653.62
2010 TOTALS (lbs/day unmitigated)	10.80	122.16	51.92	0.12	100.43	5.33	105.76	21.03	4.91	25.93	15,653.57
2010 TOTALS (lbs/day mitigated)	10.80	122.16	51.92	0.12	52.24	5.33	57.57	10.96	4.91	15.87	15,653.57
2011 TOTALS (lbs/day unmitigated)	67.61	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
2011 TOTALS (lbs/day mitigated)	67.61	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41

3/5/2008 2:29:35 PM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/1/2008-9/8/2008 Active Days: 6	3.54	37.21	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Demolition 09/01/2008-09/08/2008	3.54	37.21	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Fugitive Dust	0.00	0.00	0.00	0.00	19.95	0.00	19.95	4.15	0.00	4.15	0.00
Demo Off Road Diesel	1.58	12.75	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	1.92	24.40	10.04	0.03	0.09	1.10	1.20	0.03	1.01	1.05	2,796.17
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/9/2008-9/16/2008 Active Days: 6	1.80	13.30	6.59	0.00	54.60	0.88	55.48	11.40	0.81	12.21	1,206.28
Fine Grading 09/09/2008-09/16/2008	1.80	13.30	6.59	0.00	54.60	0.88	55.48	11.40	0.81	12.21	1,206.28
Fine Grading Dust	0.00	0.00	0.00	0.00	54.60	0.00	54.60	11.40	0.00	11.40	0.00
Fine Grading Off Road Diesel	1.77	13.24	5.65	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,112.94
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/17/2008-12/17/2008 Active Days: 66	5.10	30.61	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building 09/17/2008-12/17/2008	5.10	30.61	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building Off Road Diesel	3.26	22.07	11.32	0.00	0.00	1.64	1.64	0.00	1.51	1.51	1,802.64
Building Vendor Trips	0.56	6.17	5.11	0.01	0.03	0.28	0.31	0.01	0.26	0.27	988.78
Building Worker Trips	1.29	2.37	38.45	0.04	0.18	0.10	0.28	0.07	0.08	0.15	3,844.83

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Time Slice 12/18/2008-12/31/2008 Active Days: 10	3.68	39.01	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Demolition 12/18/2008-01/01/2009	3.68	39.01	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.58	12.75	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	2.07	26.20	10.78	0.03	0.10	1.18	1.28	0.03	1.09	1.12	3,002.20
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 1/1/2009-1/1/2009 Active Days: 1	3.44	36.56	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Demolition 12/18/2008-01/01/2009	3.44	36.56	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.46	11.86	5.36	0.00	0.00	0.74	0.74	0.00	0.68	0.68	1,223.23
Demo On Road Diesel	1.95	24.64	9.95	0.03	0.10	1.07	1.17	0.03	0.98	1.02	3,002.20
Demo Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.29
Time Slice 1/2/2009-2/23/2009 Active Days: 37	8.64	96.36	41.10	0.08	47.08	4.31	51.39	9.87	3.97	13.83	11,175.96
Mass Grading 01/02/2009-02/23/2009	8.64	96.36	41.10	0.08	47.08	4.31	51.39	9.87	3.97	13.83	11,175.96
Mass Grading Dust	0.00	0.00	0.00	0.00	46.80	0.00	46.80	9.77	0.00	9.77	0.00
Mass Grading Off Road Diesel	3.25	28.62	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	5.34	67.65	27.31	0.08	0.27	2.94	3.21	0.09	2.70	2.79	8,242.79
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 2/24/2009-9/30/2009 Active Days: 157	4.75	28.76	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building 02/24/2009-09/30/2009	4.75	28.76	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building Off Road Diesel	3.06	20.79	11.11	0.00	0.00	1.56	1.56	0.00	1.43	1.43	1,802.64
Building Vendor Trips	0.52	5.80	4.76	0.01	0.03	0.25	0.29	0.01	0.23	0.24	988.88
Building Worker Trips	1.17	2.17	35.88	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,842.92
Time Slice 10/1/2009-10/30/2009 Active Days: 22	3.62	38.40	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Demolition 10/01/2009-10/31/2009	3.62	38.40	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Fugitive Dust	0.00	0.00	0.00	0.00	22.64	0.00	22.64	4.71	0.00	4.71	0.00
Demo Off Road Diesel	1.53	12.28	5.58	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,276.64
Demo On Road Diesel	2.06	26.04	10.51	0.03	0.11	1.13	1.24	0.03	1.04	1.08	3,173.17
Demo Worker Trips	0.04	0.07	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 11/2/2009-12/31/2009 Active Days: 44	11.54	**133.11**	**55.93**	**0.12**	**100.43**	**5.91**	**106.34**	**21.03**	**5.44**	**26.46**	**15,653.62**
Mass Grading 11/01/2009-02/15/2010	11.54	133.11	55.93	0.12	100.43	5.91	106.34	21.03	5.44	26.46	15,653.62
Mass Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Mass Grading Off Road Diesel	3.25	28.62	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	8.24	104.40	42.14	0.12	0.42	4.53	4.96	0.14	4.17	4.31	12,720.46
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 1/1/2010-2/15/2010 Active Days: 32	10.80	122.16	51.92	**0.12**	**100.43**	5.33	105.76	**21.03**	4.91	25.93	15,653.57
Mass Grading 11/01/2009-02/15/2010	10.80	122.16	51.92	0.12	100.43	5.33	105.76	21.03	4.91	25.93	15,653.57
Mass Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Mass Grading Off Road Diesel	3.08	26.76	12.13	0.00	0.00	1.28	1.28	0.00	1.18	1.18	2,777.69
Mass Grading On Road Diesel	7.67	95.32	38.43	0.12	0.42	4.05	4.47	0.14	3.72	3.86	12,720.46
Mass Grading Worker Trips	0.04	0.08	1.36	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.43
Time Slice 2/16/2010-12/31/2010 Active Days: 229	4.41	26.88	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building 02/16/2010-01/08/2011	4.41	26.88	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building Off Road Diesel	2.85	19.58	10.93	0.00	0.00	1.45	1.45	0.00	1.34	1.34	1,802.64
Building Vendor Trips	0.48	5.30	4.42	0.01	0.03	0.23	0.26	0.01	0.21	0.22	988.94
Building Worker Trips	1.08	2.00	33.60	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,841.63
Time Slice 1/3/2011-1/7/2011 Active Days: 5	4.06	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building 02/16/2010-01/08/2011	4.06	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building Off Road Diesel	2.63	18.32	10.73	0.00	0.00	1.37	1.37	0.00	1.26	1.26	1,802.64
Building Vendor Trips	0.45	4.79	4.10	0.01	0.03	0.20	0.24	0.01	0.19	0.20	988.96
Building Worker Trips	0.98	1.83	31.34	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,840.80
Time Slice 1/24/2011-8/24/2011 Active Days: 153	**67.61**	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Coating 01/24/2011-08/24/2011	67.61	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Architectural Coating	67.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06

Phase Assumptions

Phase: Demolition 9/1/2008 - 9/8/2008 - Phase 1 Demo

Building Volume Total (cubic feet): 95000

Building Volume Daily (cubic feet): 47500

On Road Truck Travel (VMT): 659.72

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 12/18/2008 - 1/1/2009 - Phase 2 Demo

Building Volume Total (cubic feet): 163200

Building Volume Daily (cubic feet): 51000

On Road Truck Travel (VMT): 708.33

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 10/1/2009 - 10/31/2009 - Phase 3 Demo

Building Volume Total (cubic feet): 676255.2

Building Volume Daily (cubic feet): 53904.4

On Road Truck Travel (VMT): 748.67

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.73

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.34

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1944.79

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 3001.24

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 9/17/2008 - 12/17/2008 - Phase 1 Grade +2-level ParkingConstruction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/24/2009 - 9/30/2009 - Phase 2 7-Story Parking Structure Construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/16/2010 - 1/8/2011 - Phase 3 Subterr. Parking, mall retail construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 1/24/2011 - 8/24/2011 - Phase 3 Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/1/2008-9/8/2008 Active Days: 6	3.54	37.21	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Demolition 09/01/2008-09/08/2008	3.54	37.21	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Fugitive Dust	0.00	0.00	0.00	0.00	19.95	0.00	19.95	4.15	0.00	4.15	0.00
Demo Off Road Diesel	1.58	12.75	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	1.92	24.40	10.04	0.03	0.09	1.10	1.20	0.03	1.01	1.05	2,796.17
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/9/2008-9/16/2008 Active Days: 6	1.80	13.30	6.59	0.00	28.29	0.88	29.17	5.91	0.81	6.72	1,206.28
Fine Grading 09/09/2008-09/16/2008	1.80	13.30	6.59	0.00	28.29	0.88	29.17	5.91	0.81	6.72	1,206.28
Fine Grading Dust	0.00	0.00	0.00	0.00	28.29	0.00	28.29	5.91	0.00	5.91	0.00
Fine Grading Off Road Diesel	1.77	13.24	5.65	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,112.94
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/17/2008-12/17/2008 Active Days: 66	5.10	30.61	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building 09/17/2008-12/17/2008	5.10	30.61	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building Off Road Diesel	3.26	22.07	11.32	0.00	0.00	1.64	1.64	0.00	1.51	1.51	1,802.64
Building Vendor Trips	0.56	6.17	5.11	0.01	0.03	0.28	0.31	0.01	0.26	0.27	988.78
Building Worker Trips	1.29	2.37	38.45	0.04	0.18	0.10	0.28	0.07	0.08	0.15	3,844.83

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Time Slice 12/18/2008-12/31/2008 Active Days: 10	3.68	39.01	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Demolition 12/18/2008-01/01/2009	3.68	39.01	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.58	12.75	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	2.07	26.20	10.78	0.03	0.10	1.18	1.28	0.03	1.09	1.12	3,002.20
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 1/1/2009-1/1/2009 Active Days: 1	3.44	36.56	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Demolition 12/18/2008-01/01/2009	3.44	36.56	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.46	11.86	5.36	0.00	0.00	0.74	0.74	0.00	0.68	0.68	1,223.23
Demo On Road Diesel	1.95	24.64	9.95	0.03	0.10	1.07	1.17	0.03	0.98	1.02	3,002.20
Demo Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.29
Time Slice 1/2/2009-2/23/2009 Active Days: 37	8.64	96.36	41.10	0.08	24.53	4.31	28.84	5.16	3.97	9.12	11,175.96
Mass Grading 01/02/2009-02/23/2009	8.64	96.36	41.10	0.08	24.53	4.31	28.84	5.16	3.97	9.12	11,175.96
Mass Grading Dust	0.00	0.00	0.00	0.00	24.25	0.00	24.25	5.06	0.00	5.06	0.00
Mass Grading Off Road Diesel	3.25	28.62	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	5.34	67.65	27.31	0.08	0.27	2.94	3.21	0.09	2.70	2.79	8,242.79
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 2/24/2009-9/30/2009 Active Days: 157	4.75	28.76	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building 02/24/2009-09/30/2009	4.75	28.76	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building Off Road Diesel	3.06	20.79	11.11	0.00	0.00	1.56	1.56	0.00	1.43	1.43	1,802.64
Building Vendor Trips	0.52	5.80	4.76	0.01	0.03	0.25	0.29	0.01	0.23	0.24	988.88
Building Worker Trips	1.17	2.17	35.88	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,842.92
Time Slice 10/1/2009-10/30/2009 Active Days: 22	3.62	38.40	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Demolition 10/01/2009-10/31/2009	3.62	38.40	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Fugitive Dust	0.00	0.00	0.00	0.00	22.64	0.00	22.64	4.71	0.00	4.71	0.00
Demo Off Road Diesel	1.53	12.28	5.58	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,276.64
Demo On Road Diesel	2.06	26.04	10.51	0.03	0.11	1.13	1.24	0.03	1.04	1.08	3,173.17
Demo Worker Trips	0.04	0.07	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 11/2/2009-12/31/2009 Active Days: 44	11.54	**133.11**	**55.93**	**0.12**	52.24	**5.91**	58.15	10.96	**5.44**	16.40	**15,653.62**
Mass Grading 11/01/2009-02/15/2010	11.54	133.11	55.93	0.12	52.24	5.91	58.15	10.96	5.44	16.40	15,653.62
Mass Grading Dust	0.00	0.00	0.00	0.00	51.81	0.00	51.81	10.82	0.00	10.82	0.00
Mass Grading Off Road Diesel	3.25	28.62	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	8.24	104.40	42.14	0.12	0.42	4.53	4.96	0.14	4.17	4.31	12,720.46
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 1/1/2010-2/15/2010 Active Days: 32	10.80	122.16	51.92	**0.12**	52.24	5.33	57.57	10.96	4.91	15.87	15,653.57
Mass Grading 11/01/2009-02/15/2010	10.80	122.16	51.92	0.12	52.24	5.33	57.57	10.96	4.91	15.87	15,653.57
Mass Grading Dust	0.00	0.00	0.00	0.00	51.81	0.00	51.81	10.82	0.00	10.82	0.00
Mass Grading Off Road Diesel	3.08	26.76	12.13	0.00	0.00	1.28	1.28	0.00	1.18	1.18	2,777.69
Mass Grading On Road Diesel	7.67	95.32	38.43	0.12	0.42	4.05	4.47	0.14	3.72	3.86	12,720.46
Mass Grading Worker Trips	0.04	0.08	1.36	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.43
Time Slice 2/16/2010-12/31/2010 Active Days: 229	4.41	26.88	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building 02/16/2010-01/08/2011	4.41	26.88	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building Off Road Diesel	2.85	19.58	10.93	0.00	0.00	1.45	1.45	0.00	1.34	1.34	1,802.64
Building Vendor Trips	0.48	5.30	4.42	0.01	0.03	0.23	0.26	0.01	0.21	0.22	988.94
Building Worker Trips	1.08	2.00	33.60	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,841.63
Time Slice 1/3/2011-1/7/2011 Active Days: 5	4.06	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building 02/16/2010-01/08/2011	4.06	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building Off Road Diesel	2.63	18.32	10.73	0.00	0.00	1.37	1.37	0.00	1.26	1.26	1,802.64
Building Vendor Trips	0.45	4.79	4.10	0.01	0.03	0.20	0.24	0.01	0.19	0.20	988.96
Building Worker Trips	0.98	1.83	31.34	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,840.80
Time Slice 1/24/2011-8/24/2011 Active Days: 153	**67.61**	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Coating 01/24/2011-08/24/2011	67.61	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Architectural Coating	67.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

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For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Construction\construction-mitigated.urb924

Project Name: Sherman Oaks Fashion Square Construction

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008 TOTALS (lbs/day unmitigated)	5.10	39.01	54.88	0.05	54.60	2.02	55.48	11.40	1.85	12.21	6,636.25
2008 TOTALS (lbs/day mitigated)	5.10	36.53	54.88	0.05	28.29	2.02	29.17	5.91	1.85	6.72	6,636.25
2009 TOTALS (lbs/day unmitigated)	11.54	133.11	55.93	0.12	100.43	5.91	106.34	21.03	5.44	26.46	15,653.62
2009 TOTALS (lbs/day mitigated)	11.54	128.69	55.93	0.12	52.24	5.91	58.15	10.96	5.44	16.40	15,653.62
2010 TOTALS (lbs/day unmitigated)	10.80	122.16	51.92	0.12	100.43	5.33	105.76	21.03	4.91	25.93	15,653.57
2010 TOTALS (lbs/day mitigated)	10.80	118.01	51.92	0.12	52.24	5.33	57.57	10.96	4.91	15.87	15,653.57
2011 TOTALS (lbs/day unmitigated)	67.61	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
2011 TOTALS (lbs/day mitigated)	67.61	20.91	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/1/2008-9/8/2008 Active Days: 6	3.54	37.21	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Demolition 09/01/2008-09/08/2008	3.54	37.21	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Fugitive Dust	0.00	0.00	0.00	0.00	19.95	0.00	19.95	4.15	0.00	4.15	0.00
Demo Off Road Diesel	1.58	12.75	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	1.92	24.40	10.04	0.03	0.09	1.10	1.20	0.03	1.01	1.05	2,796.17
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/9/2008-9/16/2008 Active Days: 6	1.80	13.30	6.59	0.00	54.60	0.88	55.48	11.40	0.81	12.21	1,206.28
Fine Grading 09/09/2008-09/16/2008	1.80	13.30	6.59	0.00	54.60	0.88	55.48	11.40	0.81	12.21	1,206.28
Fine Grading Dust	0.00	0.00	0.00	0.00	54.60	0.00	54.60	11.40	0.00	11.40	0.00
Fine Grading Off Road Diesel	1.77	13.24	5.65	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,112.94
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/17/2008-12/17/2008 Active Days: 66	5.10	30.61	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building 09/17/2008-12/17/2008	5.10	30.61	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building Off Road Diesel	3.26	22.07	11.32	0.00	0.00	1.64	1.64	0.00	1.51	1.51	1,802.64
Building Vendor Trips	0.56	6.17	5.11	0.01	0.03	0.28	0.31	0.01	0.26	0.27	988.78
Building Worker Trips	1.29	2.37	38.45	0.04	0.18	0.10	0.28	0.07	0.08	0.15	3,844.83

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Time Slice 12/18/2008-12/31/2008 Active Days: 10	3.68	39.01	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Demolition 12/18/2008-01/01/2009	3.68	39.01	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.58	12.75	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	2.07	26.20	10.78	0.03	0.10	1.18	1.28	0.03	1.09	1.12	3,002.20
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 1/1/2009-1/1/2009 Active Days: 1	3.44	36.56	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Demolition 12/18/2008-01/01/2009	3.44	36.56	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.46	11.86	5.36	0.00	0.00	0.74	0.74	0.00	0.68	0.68	1,223.23
Demo On Road Diesel	1.95	24.64	9.95	0.03	0.10	1.07	1.17	0.03	0.98	1.02	3,002.20
Demo Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.29
Time Slice 1/2/2009-2/23/2009 Active Days: 37	8.64	96.36	41.10	0.08	47.08	4.31	51.39	9.87	3.97	13.83	11,175.96
Mass Grading 01/02/2009-02/23/2009	8.64	96.36	41.10	0.08	47.08	4.31	51.39	9.87	3.97	13.83	11,175.96
Mass Grading Dust	0.00	0.00	0.00	0.00	46.80	0.00	46.80	9.77	0.00	9.77	0.00
Mass Grading Off Road Diesel	3.25	28.62	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	5.34	67.65	27.31	0.08	0.27	2.94	3.21	0.09	2.70	2.79	8,242.79
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 2/24/2009-9/30/2009 Active Days: 157	4.75	28.76	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building 02/24/2009-09/30/2009	4.75	28.76	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building Off Road Diesel	3.06	20.79	11.11	0.00	0.00	1.56	1.56	0.00	1.43	1.43	1,802.64
Building Vendor Trips	0.52	5.80	4.76	0.01	0.03	0.25	0.29	0.01	0.23	0.24	988.88
Building Worker Trips	1.17	2.17	35.88	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,842.92
Time Slice 10/1/2009-10/30/2009 Active Days: 22	3.62	38.40	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Demolition 10/01/2009-10/31/2009	3.62	38.40	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Fugitive Dust	0.00	0.00	0.00	0.00	22.64	0.00	22.64	4.71	0.00	4.71	0.00
Demo Off Road Diesel	1.53	12.28	5.58	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,276.64
Demo On Road Diesel	2.06	26.04	10.51	0.03	0.11	1.13	1.24	0.03	1.04	1.08	3,173.17
Demo Worker Trips	0.04	0.07	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 11/2/2009-12/31/2009 Active Days: 44	11.54	**133.11**	**55.93**	**0.12**	**100.43**	**5.91**	**106.34**	**21.03**	**5.44**	**26.46**	**15,653.62**
Mass Grading 11/01/2009-02/15/2010	11.54	133.11	55.93	0.12	100.43	5.91	106.34	21.03	5.44	26.46	15,653.62
Mass Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Mass Grading Off Road Diesel	3.25	28.62	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	8.24	104.40	42.14	0.12	0.42	4.53	4.96	0.14	4.17	4.31	12,720.46
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 1/1/2010-2/15/2010 Active Days: 32	10.80	122.16	51.92	**0.12**	**100.43**	5.33	105.76	**21.03**	4.91	25.93	15,653.57
Mass Grading 11/01/2009-02/15/2010	10.80	122.16	51.92	0.12	100.43	5.33	105.76	21.03	4.91	25.93	15,653.57
Mass Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Mass Grading Off Road Diesel	3.08	26.76	12.13	0.00	0.00	1.28	1.28	0.00	1.18	1.18	2,777.69
Mass Grading On Road Diesel	7.67	95.32	38.43	0.12	0.42	4.05	4.47	0.14	3.72	3.86	12,720.46
Mass Grading Worker Trips	0.04	0.08	1.36	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.43
Time Slice 2/16/2010-12/31/2010 Active Days: 229	4.41	26.88	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building 02/16/2010-01/08/2011	4.41	26.88	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building Off Road Diesel	2.85	19.58	10.93	0.00	0.00	1.45	1.45	0.00	1.34	1.34	1,802.64
Building Vendor Trips	0.48	5.30	4.42	0.01	0.03	0.23	0.26	0.01	0.21	0.22	988.94
Building Worker Trips	1.08	2.00	33.60	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,841.63
Time Slice 1/3/2011-1/7/2011 Active Days: 5	4.06	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building 02/16/2010-01/08/2011	4.06	24.95	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building Off Road Diesel	2.63	18.32	10.73	0.00	0.00	1.37	1.37	0.00	1.26	1.26	1,802.64
Building Vendor Trips	0.45	4.79	4.10	0.01	0.03	0.20	0.24	0.01	0.19	0.20	988.96
Building Worker Trips	0.98	1.83	31.34	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,840.80
Time Slice 1/24/2011-8/24/2011 Active Days: 153	**67.61**	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Coating 01/24/2011-08/24/2011	67.61	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Architectural Coating	67.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06

Phase Assumptions

Phase: Demolition 9/1/2008 - 9/8/2008 - Phase 1 Demo

Building Volume Total (cubic feet): 95000

Building Volume Daily (cubic feet): 47500

On Road Truck Travel (VMT): 659.72

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 12/18/2008 - 1/1/2009 - Phase 2 Demo

Building Volume Total (cubic feet): 163200

Building Volume Daily (cubic feet): 51000

On Road Truck Travel (VMT): 708.33

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 10/1/2009 - 10/31/2009 - Phase 3 Demo

Building Volume Total (cubic feet): 676255.2

Building Volume Daily (cubic feet): 53904.4

On Road Truck Travel (VMT): 748.67

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.73

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.34

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1944.79

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 3001.24

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 9/17/2008 - 12/17/2008 - Phase 1 Grade +2-level ParkingConstruction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/24/2009 - 9/30/2009 - Phase 2 7-Story Parking Structure Construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/16/2010 - 1/8/2011 - Phase 3 Subterr. Parking, mall retail construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 1/24/2011 - 8/24/2011 - Phase 3 Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/1/2008-9/8/2008 Active Days: 6	3.54	34.73	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Demolition 09/01/2008-09/08/2008	3.54	34.73	16.52	0.03	20.05	1.90	21.95	4.18	1.75	5.93	4,112.73
Fugitive Dust	0.00	0.00	0.00	0.00	19.95	0.00	19.95	4.15	0.00	4.15	0.00
Demo Off Road Diesel	1.58	10.27	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	1.92	24.40	10.04	0.03	0.09	1.10	1.20	0.03	1.01	1.05	2,796.17
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/9/2008-9/16/2008 Active Days: 6	1.80	10.42	6.59	0.00	28.29	0.88	29.17	5.91	0.81	6.72	1,206.28
Fine Grading 09/09/2008-09/16/2008	1.80	10.42	6.59	0.00	28.29	0.88	29.17	5.91	0.81	6.72	1,206.28
Fine Grading Dust	0.00	0.00	0.00	0.00	28.29	0.00	28.29	5.91	0.00	5.91	0.00
Fine Grading Off Road Diesel	1.77	10.36	5.65	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,112.94
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 9/17/2008-12/17/2008 Active Days: 66	5.10	25.68	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building 09/17/2008-12/17/2008	5.10	25.68	54.88	0.05	0.22	2.02	2.23	0.08	1.85	1.92	6,636.25
Building Off Road Diesel	3.26	17.14	11.32	0.00	0.00	1.64	1.64	0.00	1.51	1.51	1,802.64
Building Vendor Trips	0.56	6.17	5.11	0.01	0.03	0.28	0.31	0.01	0.26	0.27	988.78
Building Worker Trips	1.29	2.37	38.45	0.04	0.18	0.10	0.28	0.07	0.08	0.15	3,844.83

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Time Slice 12/18/2008-12/31/2008 Active Days: 10	3.68	36.53	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Demolition 12/18/2008-01/01/2009	3.68	36.53	17.26	0.03	21.52	1.98	23.50	4.49	1.82	6.31	4,318.77
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.58	10.27	5.55	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,223.23
Demo On Road Diesel	2.07	26.20	10.78	0.03	0.10	1.18	1.28	0.03	1.09	1.12	3,002.20
Demo Worker Trips	0.03	0.06	0.93	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.34
Time Slice 1/1/2009-1/1/2009 Active Days: 1	3.44	34.25	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Demolition 12/18/2008-01/01/2009	3.44	34.25	16.18	0.03	21.52	1.81	23.34	4.49	1.67	6.16	4,318.72
Fugitive Dust	0.00	0.00	0.00	0.00	21.42	0.00	21.42	4.46	0.00	4.46	0.00
Demo Off Road Diesel	1.46	9.56	5.36	0.00	0.00	0.74	0.74	0.00	0.68	0.68	1,223.23
Demo On Road Diesel	1.95	24.64	9.95	0.03	0.10	1.07	1.17	0.03	0.98	1.02	3,002.20
Demo Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.29
Time Slice 1/2/2009-2/23/2009 Active Days: 37	8.64	89.60	41.10	0.08	24.53	4.31	28.84	5.16	3.97	9.12	11,175.96
Mass Grading 01/02/2009-02/23/2009	8.64	89.60	41.10	0.08	24.53	4.31	28.84	5.16	3.97	9.12	11,175.96
Mass Grading Dust	0.00	0.00	0.00	0.00	24.25	0.00	24.25	5.06	0.00	5.06	0.00
Mass Grading Off Road Diesel	3.25	21.86	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	5.34	67.65	27.31	0.08	0.27	2.94	3.21	0.09	2.70	2.79	8,242.79
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 2/24/2009-9/30/2009 Active Days: 157	4.75	24.15	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building 02/24/2009-09/30/2009	4.75	24.15	51.75	0.05	0.22	1.91	2.13	0.08	1.75	1.83	6,634.44
Building Off Road Diesel	3.06	16.17	11.11	0.00	0.00	1.56	1.56	0.00	1.43	1.43	1,802.64
Building Vendor Trips	0.52	5.80	4.76	0.01	0.03	0.25	0.29	0.01	0.23	0.24	988.88
Building Worker Trips	1.17	2.17	35.88	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,842.92
Time Slice 10/1/2009-10/30/2009 Active Days: 22	3.62	36.09	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Demolition 10/01/2009-10/31/2009	3.62	36.09	17.25	0.03	22.75	1.90	24.65	4.75	1.75	6.49	4,574.20
Fugitive Dust	0.00	0.00	0.00	0.00	22.64	0.00	22.64	4.71	0.00	4.71	0.00
Demo Off Road Diesel	1.53	9.98	5.58	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,276.64
Demo On Road Diesel	2.06	26.04	10.51	0.03	0.11	1.13	1.24	0.03	1.04	1.08	3,173.17
Demo Worker Trips	0.04	0.07	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 11/2/2009-12/31/2009 Active Days: 44	11.54	128.69	**55.93**	**0.12**	52.24	**5.91**	58.15	10.96	**5.44**	16.40	**15,653.62**
Mass Grading 11/01/2009-02/15/2010	11.54	128.69	55.93	0.12	52.24	5.91	58.15	10.96	5.44	16.40	15,653.62
Mass Grading Dust	0.00	0.00	0.00	0.00	51.81	0.00	51.81	10.82	0.00	10.82	0.00
Mass Grading Off Road Diesel	3.25	24.20	12.34	0.00	0.00	1.37	1.37	0.00	1.26	1.26	2,777.69
Mass Grading On Road Diesel	8.24	104.40	42.14	0.12	0.42	4.53	4.96	0.14	4.17	4.31	12,720.46
Mass Grading Worker Trips	0.05	0.09	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.48

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Time Slice 1/1/2010-2/15/2010 Active Days: 32	10.80	118.01	51.92	**0.12**	52.24	5.33	57.57	10.96	4.91	15.87	15,653.57
Mass Grading 11/01/2009-02/15/2010	10.80	118.01	51.92	0.12	52.24	5.33	57.57	10.96	4.91	15.87	15,653.57
Mass Grading Dust	0.00	0.00	0.00	0.00	51.81	0.00	51.81	10.82	0.00	10.82	0.00
Mass Grading Off Road Diesel	3.08	22.61	12.13	0.00	0.00	1.28	1.28	0.00	1.18	1.18	2,777.69
Mass Grading On Road Diesel	7.67	95.32	38.43	0.12	0.42	4.05	4.47	0.14	3.72	3.86	12,720.46
Mass Grading Worker Trips	0.04	0.08	1.36	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.43
Time Slice 2/16/2010-12/31/2010 Active Days: 229	4.41	22.55	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building 02/16/2010-01/08/2011	4.41	22.55	48.95	0.05	0.22	1.79	2.00	0.08	1.63	1.71	6,633.21
Building Off Road Diesel	2.85	15.25	10.93	0.00	0.00	1.45	1.45	0.00	1.34	1.34	1,802.64
Building Vendor Trips	0.48	5.30	4.42	0.01	0.03	0.23	0.26	0.01	0.21	0.22	988.94
Building Worker Trips	1.08	2.00	33.60	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,841.63
Time Slice 1/3/2011-1/7/2011 Active Days: 5	4.06	20.91	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building 02/16/2010-01/08/2011	4.06	20.91	46.17	0.05	0.22	1.68	1.90	0.08	1.54	1.62	6,632.41
Building Off Road Diesel	2.63	14.29	10.73	0.00	0.00	1.37	1.37	0.00	1.26	1.26	1,802.64
Building Vendor Trips	0.45	4.79	4.10	0.01	0.03	0.20	0.24	0.01	0.19	0.20	988.96
Building Worker Trips	0.98	1.83	31.34	0.04	0.18	0.10	0.29	0.07	0.09	0.15	3,840.80
Time Slice 1/24/2011-8/24/2011 Active Days: 153	**67.61**	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Coating 01/24/2011-08/24/2011	67.61	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06
Architectural Coating	67.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.06

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 9/1/2008 - 9/8/2008 - Phase 1 Demo

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For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Demolition 12/18/2008 - 1/1/2009 - Phase 2 Demo

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Demolition 10/1/2009 - 10/31/2009 - Phase 3 Demo

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Rubber Tired Loaders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Excavators, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Rubber Tired Loaders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 9/17/2008 - 12/17/2008 - Phase 1 Grade +2-level ParkingConstruction

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 2/24/2009 - 9/30/2009 - Phase 2 7-Story Parking Structure Construction

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 2/16/2010 - 1/8/2011 - Phase 3 Subterr. Parking, mall retail construction

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Construction\Construction.urb924

Project Name: Sherman Oaks Fashion Square Construction

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008 TOTALS (tons/year unmitigated)	0.20	1.36	1.97	0.00	0.34	0.08	0.42	0.07	0.08	0.15	256.55
2008 TOTALS (tons/year mitigated)	0.20	1.36	1.97	0.00	0.26	0.08	0.34	0.06	0.08	0.13	256.55
Percent Reduction	0.00	0.00	0.00	0.00	23.30	0.00	18.64	22.97	0.00	11.03	0.00
2009 TOTALS (tons/year unmitigated)	0.83	7.41	6.25	0.01	3.36	0.38	3.74	0.71	0.35	1.06	1,124.41
2009 TOTALS (tons/year mitigated)	0.83	7.41	6.25	0.01	1.88	0.38	2.26	0.40	0.35	0.75	1,124.41
Percent Reduction	0.00	0.00	0.00	0.00	43.99	0.00	39.50	43.73	0.00	29.21	0.00
2010 TOTALS (tons/year unmitigated)	0.68	5.03	6.44	0.01	1.63	0.29	1.92	0.35	0.27	0.61	1,009.96
2010 TOTALS (tons/year mitigated)	0.68	5.03	6.44	0.01	0.86	0.29	1.15	0.18	0.27	0.45	1,009.96
Percent Reduction	0.00	0.00	0.00	0.00	47.25	0.00	40.13	46.64	0.00	26.36	0.00
2011 TOTALS (tons/year unmitigated)	5.18	0.07	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
2011 TOTALS (tons/year mitigated)	5.18	0.07	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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2008	0.20	1.36	1.97	0.00	0.34	0.08	0.42	0.07	0.08	0.15	256.55
Demolition 09/01/2008-09/08/2008	0.01	0.11	0.05	0.00	0.06	0.01	0.07	0.01	0.01	0.02	12.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Demo On Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.39
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Fine Grading 09/09/2008-09/16/2008	0.01	0.04	0.02	0.00	0.16	0.00	0.17	0.03	0.00	0.04	3.62
Fine Grading Dust	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Building 09/17/2008-12/17/2008	0.17	1.01	1.81	0.00	0.01	0.07	0.07	0.00	0.06	0.06	219.00
Building Off Road Diesel	0.11	0.73	0.37	0.00	0.00	0.05	0.05	0.00	0.05	0.05	59.49
Building Vendor Trips	0.02	0.20	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	32.63
Building Worker Trips	0.04	0.08	1.27	0.00	0.01	0.00	0.01	0.00	0.00	0.00	126.88
Demolition 12/18/2008-01/01/2009	0.02	0.20	0.09	0.00	0.11	0.01	0.12	0.02	0.01	0.03	21.59
Fugitive Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.01
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
2009	0.83	7.41	6.25	0.01	3.36	0.38	3.74	0.71	0.35	1.06	1,124.41

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Demolition 12/18/2008-01/01/2009	0.00	0.02	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	2.16
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Demo On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mass Grading 01/02/2009-02/23/2009	0.16	1.78	0.76	0.00	0.87	0.08	0.95	0.18	0.07	0.26	206.76
Mass Grading Dust	0.00	0.00	0.00	0.00	0.87	0.00	0.87	0.18	0.00	0.18	0.00
Mass Grading Off Road Diesel	0.06	0.53	0.23	0.00	0.00	0.03	0.03	0.00	0.02	0.02	51.39
Mass Grading On Road Diesel	0.10	1.25	0.51	0.00	0.01	0.05	0.06	0.00	0.05	0.05	152.49
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.88
Building 02/24/2009-09/30/2009	0.37	2.26	4.06	0.00	0.02	0.15	0.17	0.01	0.14	0.14	520.80
Building Off Road Diesel	0.24	1.63	0.87	0.00	0.00	0.12	0.12	0.00	0.11	0.11	141.51
Building Vendor Trips	0.04	0.46	0.37	0.00	0.00	0.02	0.02	0.00	0.02	0.02	77.63
Building Worker Trips	0.09	0.17	2.82	0.00	0.01	0.01	0.02	0.01	0.01	0.01	301.67
Demolition 10/01/2009-10/31/2009	0.04	0.42	0.19	0.00	0.25	0.02	0.27	0.05	0.02	0.07	50.32
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.02	0.14	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	14.04
Demo On Road Diesel	0.02	0.29	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	34.90
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37

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Mass Grading 11/01/2009-02/15/2010	0.25	2.93	1.23	0.00	2.21	0.13	2.34	0.46	0.12	0.58	344.38
Mass Grading Dust	0.00	0.00	0.00	0.00	2.20	0.00	2.20	0.46	0.00	0.46	0.00
Mass Grading Off Road Diesel	0.07	0.63	0.27	0.00	0.00	0.03	0.03	0.00	0.03	0.03	61.11
Mass Grading On Road Diesel	0.18	2.30	0.93	0.00	0.01	0.10	0.11	0.00	0.09	0.09	279.85
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
2010	0.68	5.03	6.44	0.01	1.63	0.29	1.92	0.35	0.27	0.61	1,009.96
Mass Grading 11/01/2009-02/15/2010	0.17	1.95	0.83	0.00	1.61	0.09	1.69	0.34	0.08	0.41	250.46
Mass Grading Dust	0.00	0.00	0.00	0.00	1.60	0.00	1.60	0.33	0.00	0.33	0.00
Mass Grading Off Road Diesel	0.05	0.43	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	44.44
Mass Grading On Road Diesel	0.12	1.53	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	203.53
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Building 02/16/2010-01/08/2011	0.50	3.08	5.60	0.01	0.02	0.20	0.23	0.01	0.19	0.20	759.50
Building Off Road Diesel	0.33	2.24	1.25	0.00	0.00	0.17	0.17	0.00	0.15	0.15	206.40
Building Vendor Trips	0.06	0.61	0.51	0.00	0.00	0.03	0.03	0.00	0.02	0.03	113.23
Building Worker Trips	0.12	0.23	3.85	0.00	0.02	0.01	0.03	0.01	0.01	0.02	439.87
2011	5.18	0.07	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
Building 02/16/2010-01/08/2011	0.01	0.06	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.58
Building Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.51
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.60
Coating 01/24/2011-08/24/2011	5.17	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50
Architectural Coating	5.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50

Phase Assumptions

Phase: Demolition 9/1/2008 - 9/8/2008 - Phase 1 Demo

Building Volume Total (cubic feet): 95000

Building Volume Daily (cubic feet): 47500

On Road Truck Travel (VMT): 659.72

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 12/18/2008 - 1/1/2009 - Phase 2 Demo

Building Volume Total (cubic feet): 163200

Building Volume Daily (cubic feet): 51000

On Road Truck Travel (VMT): 708.33

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 10/1/2009 - 10/31/2009 - Phase 3 Demo

Building Volume Total (cubic feet): 676255.2

Building Volume Daily (cubic feet): 53904.4

On Road Truck Travel (VMT): 748.67

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.73

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.34

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1944.79

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 3001.24

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 9/17/2008 - 12/17/2008 - Phase 1 Grade +2-level ParkingConstruction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/24/2009 - 9/30/2009 - Phase 2 7-Story Parking Structure Construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/16/2010 - 1/8/2011 - Phase 3 Subterr. Parking, mall retail construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 1/24/2011 - 8/24/2011 - Phase 3 Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008	0.20	1.36	1.97	0.00	0.26	0.08	0.34	0.06	0.08	0.13	256.55
Demolition 09/01/2008-09/08/2008	0.01	0.11	0.05	0.00	0.06	0.01	0.07	0.01	0.01	0.02	12.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Demo On Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.39
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Fine Grading 09/09/2008-09/16/2008	0.01	0.04	0.02	0.00	0.08	0.00	0.09	0.02	0.00	0.02	3.62
Fine Grading Dust	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Building 09/17/2008-12/17/2008	0.17	1.01	1.81	0.00	0.01	0.07	0.07	0.00	0.06	0.06	219.00
Building Off Road Diesel	0.11	0.73	0.37	0.00	0.00	0.05	0.05	0.00	0.05	0.05	59.49
Building Vendor Trips	0.02	0.20	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	32.63
Building Worker Trips	0.04	0.08	1.27	0.00	0.01	0.00	0.01	0.00	0.00	0.00	126.88

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Demolition 12/18/2008-01/01/2009	0.02	0.20	0.09	0.00	0.11	0.01	0.12	0.02	0.01	0.03	21.59
Fugitive Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.01
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
2009	0.83	7.41	6.25	0.01	1.88	0.38	2.26	0.40	0.35	0.75	1,124.41
Demolition 12/18/2008-01/01/2009	0.00	0.02	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	2.16
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Demo On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mass Grading 01/02/2009-02/23/2009	0.16	1.78	0.76	0.00	0.45	0.08	0.53	0.10	0.07	0.17	206.76
Mass Grading Dust	0.00	0.00	0.00	0.00	0.45	0.00	0.45	0.09	0.00	0.09	0.00
Mass Grading Off Road Diesel	0.06	0.53	0.23	0.00	0.00	0.03	0.03	0.00	0.02	0.02	51.39
Mass Grading On Road Diesel	0.10	1.25	0.51	0.00	0.01	0.05	0.06	0.00	0.05	0.05	152.49
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.88
Building 02/24/2009-09/30/2009	0.37	2.26	4.06	0.00	0.02	0.15	0.17	0.01	0.14	0.14	520.80
Building Off Road Diesel	0.24	1.63	0.87	0.00	0.00	0.12	0.12	0.00	0.11	0.11	141.51
Building Vendor Trips	0.04	0.46	0.37	0.00	0.00	0.02	0.02	0.00	0.02	0.02	77.63
Building Worker Trips	0.09	0.17	2.82	0.00	0.01	0.01	0.02	0.01	0.01	0.01	301.67

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Demolition 10/01/2009-10/31/2009	0.04	0.42	0.19	0.00	0.25	0.02	0.27	0.05	0.02	0.07	50.32
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.02	0.14	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	14.04
Demo On Road Diesel	0.02	0.29	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	34.90
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37
Mass Grading 11/01/2009-02/15/2010	0.25	2.93	1.23	0.00	1.15	0.13	1.28	0.24	0.12	0.36	344.38
Mass Grading Dust	0.00	0.00	0.00	0.00	1.14	0.00	1.14	0.24	0.00	0.24	0.00
Mass Grading Off Road Diesel	0.07	0.63	0.27	0.00	0.00	0.03	0.03	0.00	0.03	0.03	61.11
Mass Grading On Road Diesel	0.18	2.30	0.93	0.00	0.01	0.10	0.11	0.00	0.09	0.09	279.85
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
2010	0.68	5.03	6.44	0.01	0.86	0.29	1.15	0.18	0.27	0.45	1,009.96
Mass Grading 11/01/2009-02/15/2010	0.17	1.95	0.83	0.00	0.84	0.09	0.92	0.18	0.08	0.25	250.46
Mass Grading Dust	0.00	0.00	0.00	0.00	0.83	0.00	0.83	0.17	0.00	0.17	0.00
Mass Grading Off Road Diesel	0.05	0.43	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	44.44
Mass Grading On Road Diesel	0.12	1.53	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	203.53
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Building 02/16/2010-01/08/2011	0.50	3.08	5.60	0.01	0.02	0.20	0.23	0.01	0.19	0.20	759.50
Building Off Road Diesel	0.33	2.24	1.25	0.00	0.00	0.17	0.17	0.00	0.15	0.15	206.40
Building Vendor Trips	0.06	0.61	0.51	0.00	0.00	0.03	0.03	0.00	0.02	0.03	113.23
Building Worker Trips	0.12	0.23	3.85	0.00	0.02	0.01	0.03	0.01	0.01	0.02	439.87

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2011	5.18	0.07	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
Building 02/16/2010-01/08/2011	0.01	0.06	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.58
Building Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.51
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.60
Coating 01/24/2011-08/24/2011	5.17	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50
Architectural Coating	5.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Construction\construction-mitigated.urb924

Project Name: Sherman Oaks Fashion Square Construction

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008 TOTALS (tons/year unmitigated)	0.20	1.36	1.97	0.00	0.34	0.08	0.42	0.07	0.08	0.15	256.55
2008 TOTALS (tons/year mitigated)	0.20	1.17	1.97	0.00	0.26	0.08	0.34	0.06	0.08	0.13	256.55
Percent Reduction	0.00	14.09	0.00	0.00	23.30	0.00	18.64	22.97	0.00	11.03	0.00
2009 TOTALS (tons/year unmitigated)	0.83	7.41	6.25	0.01	3.36	0.38	3.74	0.71	0.35	1.06	1,124.41
2009 TOTALS (tons/year mitigated)	0.83	6.80	6.25	0.01	1.88	0.38	2.26	0.40	0.35	0.75	1,124.41
Percent Reduction	0.00	8.25	0.00	0.00	43.99	0.00	39.50	43.73	0.00	29.21	0.00
2010 TOTALS (tons/year unmitigated)	0.68	5.03	6.44	0.01	1.63	0.29	1.92	0.35	0.27	0.61	1,009.96
2010 TOTALS (tons/year mitigated)	0.68	4.47	6.44	0.01	0.86	0.29	1.15	0.18	0.27	0.45	1,009.96
Percent Reduction	0.00	11.17	0.00	0.00	47.25	0.00	40.13	46.64	0.00	26.36	0.00
2011 TOTALS (tons/year unmitigated)	5.18	0.07	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
2011 TOTALS (tons/year mitigated)	5.18	0.06	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
Percent Reduction	0.00	15.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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2008	0.20	1.36	1.97	0.00	0.34	0.08	0.42	0.07	0.08	0.15	256.55
Demolition 09/01/2008-09/08/2008	0.01	0.11	0.05	0.00	0.06	0.01	0.07	0.01	0.01	0.02	12.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Demo On Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.39
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Fine Grading 09/09/2008-09/16/2008	0.01	0.04	0.02	0.00	0.16	0.00	0.17	0.03	0.00	0.04	3.62
Fine Grading Dust	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Building 09/17/2008-12/17/2008	0.17	1.01	1.81	0.00	0.01	0.07	0.07	0.00	0.06	0.06	219.00
Building Off Road Diesel	0.11	0.73	0.37	0.00	0.00	0.05	0.05	0.00	0.05	0.05	59.49
Building Vendor Trips	0.02	0.20	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	32.63
Building Worker Trips	0.04	0.08	1.27	0.00	0.01	0.00	0.01	0.00	0.00	0.00	126.88
Demolition 12/18/2008-01/01/2009	0.02	0.20	0.09	0.00	0.11	0.01	0.12	0.02	0.01	0.03	21.59
Fugitive Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.01
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
2009	0.83	7.41	6.25	0.01	3.36	0.38	3.74	0.71	0.35	1.06	1,124.41

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Demolition 12/18/2008-01/01/2009	0.00	0.02	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	2.16
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Demo On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mass Grading 01/02/2009-02/23/2009	0.16	1.78	0.76	0.00	0.87	0.08	0.95	0.18	0.07	0.26	206.76
Mass Grading Dust	0.00	0.00	0.00	0.00	0.87	0.00	0.87	0.18	0.00	0.18	0.00
Mass Grading Off Road Diesel	0.06	0.53	0.23	0.00	0.00	0.03	0.03	0.00	0.02	0.02	51.39
Mass Grading On Road Diesel	0.10	1.25	0.51	0.00	0.01	0.05	0.06	0.00	0.05	0.05	152.49
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.88
Building 02/24/2009-09/30/2009	0.37	2.26	4.06	0.00	0.02	0.15	0.17	0.01	0.14	0.14	520.80
Building Off Road Diesel	0.24	1.63	0.87	0.00	0.00	0.12	0.12	0.00	0.11	0.11	141.51
Building Vendor Trips	0.04	0.46	0.37	0.00	0.00	0.02	0.02	0.00	0.02	0.02	77.63
Building Worker Trips	0.09	0.17	2.82	0.00	0.01	0.01	0.02	0.01	0.01	0.01	301.67
Demolition 10/01/2009-10/31/2009	0.04	0.42	0.19	0.00	0.25	0.02	0.27	0.05	0.02	0.07	50.32
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.02	0.14	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	14.04
Demo On Road Diesel	0.02	0.29	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	34.90
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37

Mass Grading 11/01/2009-02/15/2010	0.25	2.93	1.23	0.00	2.21	0.13	2.34	0.46	0.12	0.58	344.38
Mass Grading Dust	0.00	0.00	0.00	0.00	2.20	0.00	2.20	0.46	0.00	0.46	0.00
Mass Grading Off Road Diesel	0.07	0.63	0.27	0.00	0.00	0.03	0.03	0.00	0.03	0.03	61.11
Mass Grading On Road Diesel	0.18	2.30	0.93	0.00	0.01	0.10	0.11	0.00	0.09	0.09	279.85
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
2010	0.68	5.03	6.44	0.01	1.63	0.29	1.92	0.35	0.27	0.61	1,009.96
Mass Grading 11/01/2009-02/15/2010	0.17	1.95	0.83	0.00	1.61	0.09	1.69	0.34	0.08	0.41	250.46
Mass Grading Dust	0.00	0.00	0.00	0.00	1.60	0.00	1.60	0.33	0.00	0.33	0.00
Mass Grading Off Road Diesel	0.05	0.43	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	44.44
Mass Grading On Road Diesel	0.12	1.53	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	203.53
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Building 02/16/2010-01/08/2011	0.50	3.08	5.60	0.01	0.02	0.20	0.23	0.01	0.19	0.20	759.50
Building Off Road Diesel	0.33	2.24	1.25	0.00	0.00	0.17	0.17	0.00	0.15	0.15	206.40
Building Vendor Trips	0.06	0.61	0.51	0.00	0.00	0.03	0.03	0.00	0.02	0.03	113.23
Building Worker Trips	0.12	0.23	3.85	0.00	0.02	0.01	0.03	0.01	0.01	0.02	439.87
2011	5.18	0.07	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
Building 02/16/2010-01/08/2011	0.01	0.06	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.58
Building Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.51
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.60
Coating 01/24/2011-08/24/2011	5.17	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50
Architectural Coating	5.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50

Phase Assumptions

Phase: Demolition 9/1/2008 - 9/8/2008 - Phase 1 Demo

Building Volume Total (cubic feet): 95000

Building Volume Daily (cubic feet): 47500

On Road Truck Travel (VMT): 659.72

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 12/18/2008 - 1/1/2009 - Phase 2 Demo

Building Volume Total (cubic feet): 163200

Building Volume Daily (cubic feet): 51000

On Road Truck Travel (VMT): 708.33

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Demolition 10/1/2009 - 10/31/2009 - Phase 3 Demo

Building Volume Total (cubic feet): 676255.2

Building Volume Daily (cubic feet): 53904.4

On Road Truck Travel (VMT): 748.67

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.73

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 2.34

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1944.79

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

Total Acres Disturbed: 12.86

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 3001.24

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 9/17/2008 - 12/17/2008 - Phase 1 Grade +2-level ParkingConstruction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/24/2009 - 9/30/2009 - Phase 2 7-Story Parking Structure Construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 2/16/2010 - 1/8/2011 - Phase 3 Subterr. Parking, mall retail construction

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 1/24/2011 - 8/24/2011 - Phase 3 Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008	0.20	1.17	1.97	0.00	0.26	0.08	0.34	0.06	0.08	0.13	256.55
Demolition 09/01/2008-09/08/2008	0.01	0.10	0.05	0.00	0.06	0.01	0.07	0.01	0.01	0.02	12.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Demo On Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.39
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Fine Grading 09/09/2008-09/16/2008	0.01	0.03	0.02	0.00	0.08	0.00	0.09	0.02	0.00	0.02	3.62
Fine Grading Dust	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Building 09/17/2008-12/17/2008	0.17	0.85	1.81	0.00	0.01	0.07	0.07	0.00	0.06	0.06	219.00
Building Off Road Diesel	0.11	0.57	0.37	0.00	0.00	0.05	0.05	0.00	0.05	0.05	59.49
Building Vendor Trips	0.02	0.20	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	32.63
Building Worker Trips	0.04	0.08	1.27	0.00	0.01	0.00	0.01	0.00	0.00	0.00	126.88

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Demolition 12/18/2008-01/01/2009	0.02	0.18	0.09	0.00	0.11	0.01	0.12	0.02	0.01	0.03	21.59
Fugitive Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.01
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
2009	0.83	6.80	6.25	0.01	1.88	0.38	2.26	0.40	0.35	0.75	1,124.41
Demolition 12/18/2008-01/01/2009	0.00	0.02	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	2.16
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Demo On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mass Grading 01/02/2009-02/23/2009	0.16	1.66	0.76	0.00	0.45	0.08	0.53	0.10	0.07	0.17	206.76
Mass Grading Dust	0.00	0.00	0.00	0.00	0.45	0.00	0.45	0.09	0.00	0.09	0.00
Mass Grading Off Road Diesel	0.06	0.40	0.23	0.00	0.00	0.03	0.03	0.00	0.02	0.02	51.39
Mass Grading On Road Diesel	0.10	1.25	0.51	0.00	0.01	0.05	0.06	0.00	0.05	0.05	152.49
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.88
Building 02/24/2009-09/30/2009	0.37	1.90	4.06	0.00	0.02	0.15	0.17	0.01	0.14	0.14	520.80
Building Off Road Diesel	0.24	1.27	0.87	0.00	0.00	0.12	0.12	0.00	0.11	0.11	141.51
Building Vendor Trips	0.04	0.46	0.37	0.00	0.00	0.02	0.02	0.00	0.02	0.02	77.63
Building Worker Trips	0.09	0.17	2.82	0.00	0.01	0.01	0.02	0.01	0.01	0.01	301.67

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Demolition 10/01/2009-10/31/2009	0.04	0.40	0.19	0.00	0.25	0.02	0.27	0.05	0.02	0.07	50.32
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.02	0.11	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	14.04
Demo On Road Diesel	0.02	0.29	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	34.90
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37
Mass Grading 11/01/2009-02/15/2010	0.25	2.83	1.23	0.00	1.15	0.13	1.28	0.24	0.12	0.36	344.38
Mass Grading Dust	0.00	0.00	0.00	0.00	1.14	0.00	1.14	0.24	0.00	0.24	0.00
Mass Grading Off Road Diesel	0.07	0.53	0.27	0.00	0.00	0.03	0.03	0.00	0.03	0.03	61.11
Mass Grading On Road Diesel	0.18	2.30	0.93	0.00	0.01	0.10	0.11	0.00	0.09	0.09	279.85
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
2010	0.68	4.47	6.44	0.01	0.86	0.29	1.15	0.18	0.27	0.45	1,009.96
Mass Grading 11/01/2009-02/15/2010	0.17	1.89	0.83	0.00	0.84	0.09	0.92	0.18	0.08	0.25	250.46
Mass Grading Dust	0.00	0.00	0.00	0.00	0.83	0.00	0.83	0.17	0.00	0.17	0.00
Mass Grading Off Road Diesel	0.05	0.36	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	44.44
Mass Grading On Road Diesel	0.12	1.53	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	203.53
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Building 02/16/2010-01/08/2011	0.50	2.58	5.60	0.01	0.02	0.20	0.23	0.01	0.19	0.20	759.50
Building Off Road Diesel	0.33	1.75	1.25	0.00	0.00	0.17	0.17	0.00	0.15	0.15	206.40
Building Vendor Trips	0.06	0.61	0.51	0.00	0.00	0.03	0.03	0.00	0.02	0.03	113.23
Building Worker Trips	0.12	0.23	3.85	0.00	0.02	0.01	0.03	0.01	0.01	0.02	439.87

2011	5.18	0.06	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.08
Building 02/16/2010-01/08/2011	0.01	0.05	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.58
Building Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.51
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.60
Coating 01/24/2011-08/24/2011	5.17	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50
Architectural Coating	5.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 9/1/2008 - 9/8/2008 - Phase 1 Demo

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Demolition 12/18/2008 - 1/1/2009 - Phase 2 Demo

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Demolition 10/1/2009 - 10/31/2009 - Phase 3 Demo

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Fine Grading 9/9/2008 - 9/16/2008 - Phase 1 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 1/2/2009 - 2/23/2009 - Phase 2 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Rubber Tired Loaders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Excavators, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 11/1/2009 - 2/15/2010 - Phase 3 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Rubber Tired Loaders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 9/17/2008 - 12/17/2008 - Phase 1 Grade +2-level ParkingConstruction

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 2/24/2009 - 9/30/2009 - Phase 2 7-Story Parking Structure Construction

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 2/16/2010 - 1/8/2011 - Phase 3 Subterr. Parking, mall retail construction

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

Appendix E

Operational Emission Calculations and Output Files

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Existing Weekday Operational.urb924

Project Name: Sherman Oaks Existing Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.13	1.53	1.56	0.00	0.00	0.00	1,835.95

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	18.31	25.13	209.20	0.22	38.46	7.50	22,409.77

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	18.44	26.66	210.76	0.22	38.46	7.50	24,245.72

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.11	1.53	1.28	0.00	0.00	0.00	1,835.44
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings							
TOTALS (tons/year, unmitigated)	0.13	1.53	1.56	0.00	0.00	0.00	1,835.95

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	18.31	25.13	209.20	0.22	38.46	7.50	22,409.77
TOTALS (tons/year, unmitigated)	18.31	25.13	209.20	0.22	38.46	7.50	22,409.77

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		28.70	1000 sq ft	867.00	24,882.90	121,926.22
					24,882.90	121,926.22

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Existing Weekday Operational.urb924

Project Name: Sherman Oaks Existing Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.73	8.40	8.59	0.00	0.03	0.02	10,060.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	97.75	129.13	1,147.78	1.29	210.76	41.11	126,763.98

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	98.48	137.53	1,156.37	1.29	210.79	41.13	136,823.99

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20
Hearth							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.73	8.40	8.59	0.00	0.03	0.02	10,060.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	97.75	129.13	1,147.78	1.29	210.76	41.11	126,763.98
TOTALS (lbs/day, unmitigated)	97.75	129.13	1,147.78	1.29	210.76	41.11	126,763.98

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		28.70	1000 sq ft	867.00	24,882.90	121,926.22
					24,882.90	121,926.22

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Existing Weekday Operational.urb924

Project Name: Sherman Oaks Existing Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	105.49	154.83	1,143.28	1.08	210.76	41.11	114,851.86

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	106.10	163.21	1,150.32	1.08	210.78	41.12	124,909.06

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	105.49	154.83	1,143.28	1.08	210.76	41.11	114,851.86
TOTALS (lbs/day, unmitigated)	105.49	154.83	1,143.28	1.08	210.76	41.11	114,851.86

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		28.70	1000 sq ft	867.00	24,882.90	121,926.22
					24,882.90	121,926.22

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Proposed Weekday Operational.urb924

Project Name: Sherman Oaks Proposed Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.17	2.02	1.98	0.00	0.00	0.00	2,428.71

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	22.07	30.14	250.91	0.27	46.13	9.00	26,878.63

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	22.24	32.16	252.89	0.27	46.13	9.00	29,307.34

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.15	2.02	1.70	0.00	0.00	0.00	2,428.20
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings							
TOTALS (tons/year, unmitigated)	0.17	2.02	1.98	0.00	0.00	0.00	2,428.71

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	22.07	30.14	250.91	0.27	46.13	9.00	26,878.63
TOTALS (tons/year, unmitigated)	22.07	30.14	250.91	0.27	46.13	9.00	26,878.63

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		26.02	1000 sq ft	1,147.00	29,844.94	146,240.21
					29,844.94	146,240.21

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Proposed Weekday Operational.urb924

Project Name: Sherman Oaks Proposed Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.92	11.11	10.86	0.00	0.03	0.03	13,308.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	117.94	154.88	1,376.67	1.55	252.79	49.31	152,042.70

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	118.86	165.99	1,387.53	1.55	252.82	49.34	165,350.71

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20
Hearth							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.92	11.11	10.86	0.00	0.03	0.03	13,308.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	117.94	154.88	1,376.67	1.55	252.79	49.31	152,042.70
TOTALS (lbs/day, unmitigated)	117.94	154.88	1,376.67	1.55	252.79	49.31	152,042.70

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

3/5/2008 12:04:38 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		26.02	1000 sq ft	1,147.00	29,844.94	146,240.21
					29,844.94	146,240.21

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

3/5/2008 12:04:38 PM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Proposed Weekday Operational.urb924

Project Name: Sherman Oaks Proposed Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	126.85	185.70	1,371.27	1.29	252.79	49.31	137,755.12

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	127.65	196.79	1,380.58	1.29	252.81	49.33	151,060.32

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	126.85	185.70	1,371.27	1.29	252.79	49.31	137,755.12
TOTALS (lbs/day, unmitigated)	126.85	185.70	1,371.27	1.29	252.79	49.31	137,755.12

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

3/5/2008 12:04:51 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		26.02	1000 sq ft	1,147.00	29,844.94	146,240.21
					29,844.94	146,240.21

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Existing Weekend Operational.urb924

Project Name: Sherman Oaks Existing Weekend Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.13	1.53	1.56	0.00	0.00	0.00	1,835.95

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	23.60	32.75	272.61	0.29	50.12	9.78	29,202.98

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	23.73	34.28	274.17	0.29	50.12	9.78	31,038.93

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.11	1.53	1.28	0.00	0.00	0.00	1,835.44
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings							
TOTALS (tons/year, unmitigated)	0.13	1.53	1.56	0.00	0.00	0.00	1,835.95

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	23.60	32.75	272.61	0.29	50.12	9.78	29,202.98
TOTALS (tons/year, unmitigated)	23.60	32.75	272.61	0.29	50.12	9.78	29,202.98

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		37.40	1000 sq ft	867.00	32,425.80	158,886.43
					32,425.80	158,886.43

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Existing Weekend Operational.urb924

Project Name: Sherman Oaks Existing Weekend Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.73	8.40	8.59	0.00	0.03	0.02	10,060.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	125.66	168.28	1,495.72	1.69	274.65	53.57	165,190.69

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	126.39	176.68	1,504.31	1.69	274.68	53.59	175,250.70

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20
Hearth							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.73	8.40	8.59	0.00	0.03	0.02	10,060.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	125.66	168.28	1,495.72	1.69	274.65	53.57	165,190.69
TOTALS (lbs/day, unmitigated)	125.66	168.28	1,495.72	1.69	274.65	53.57	165,190.69

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

3/5/2008 12:00:36 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		37.40	1000 sq ft	867.00	32,425.80	158,886.43
					32,425.80	158,886.43

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Existing Weekend Operational.urb924

Project Name: Sherman Oaks Existing Weekend Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	136.68	201.76	1,489.85	1.41	274.65	53.57	149,667.59

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	137.29	210.14	1,496.89	1.41	274.67	53.58	159,724.79

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.61	8.38	7.04	0.00	0.02	0.01	10,057.20

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	136.68	201.76	1,489.85	1.41	274.65	53.57	149,667.59
TOTALS (lbs/day, unmitigated)	136.68	201.76	1,489.85	1.41	274.65	53.57	149,667.59

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

3/5/2008 12:00:53 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		37.40	1000 sq ft	867.00	32,425.80	158,886.43
					32,425.80	158,886.43

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Proposed Weekend Operational.urb924

Project Name: Sherman Oaks Proposed Weekend Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.17	2.02	1.98	0.00	0.00	0.00	2,428.71

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	28.26	39.06	325.17	0.35	59.79	11.66	34,832.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	28.43	41.08	327.15	0.35	59.79	11.66	37,261.43

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.15	2.02	1.70	0.00	0.00	0.00	2,428.20
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings							
TOTALS (tons/year, unmitigated)	0.17	2.02	1.98	0.00	0.00	0.00	2,428.71

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	28.26	39.06	325.17	0.35	59.79	11.66	34,832.72
TOTALS (tons/year, unmitigated)	28.26	39.06	325.17	0.35	59.79	11.66	34,832.72

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		33.72	1000 sq ft	1,147.00	38,676.84	189,516.53
					38,676.84	189,516.53

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

3/5/2008 11:58:32 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Proposed Weekend Operational.urb924

Project Name: Sherman Oaks Proposed Weekend Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.92	11.11	10.86	0.00	0.03	0.03	13,308.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	150.63	200.72	1,784.06	2.01	327.60	63.90	197,036.13

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	151.55	211.83	1,794.92	2.01	327.63	63.93	210,344.14

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20
Hearth							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.92	11.11	10.86	0.00	0.03	0.03	13,308.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	150.63	200.72	1,784.06	2.01	327.60	63.90	197,036.13
TOTALS (lbs/day, unmitigated)	150.63	200.72	1,784.06	2.01	327.60	63.90	197,036.13

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		33.72	1000 sq ft	1,147.00	38,676.84	189,516.53
					38,676.84	189,516.53

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Proposed Weekend Operational.urb924

Project Name: Sherman Oaks Proposed Weekend Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	163.37	240.66	1,777.06	1.68	327.60	63.90	178,520.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	164.17	251.75	1,786.37	1.68	327.62	63.92	191,825.68

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.80	11.09	9.31	0.00	0.02	0.02	13,305.20

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	163.37	240.66	1,777.06	1.68	327.60	63.90	178,520.48
TOTALS (lbs/day, unmitigated)	163.37	240.66	1,777.06	1.68	327.60	63.90	178,520.48

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		33.72	1000 sq ft	1,147.00	38,676.84	189,516.53
					38,676.84	189,516.53

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

GREENHOUSE GAS EMISSIONS CALCULATION - Mobile Source

N_2O to NO_X Ratio	0.048

Emissions Factors from EMFAC2007	
Daily VMT	223,514,000
NO_X (tons/mi)	0.000000969
N_2O (tons/mi)	0.000000047
CH_4 (tons/mi)	0.000000038

Estimated VMT for Existing Conditions	47,730,363
Estimated VMT for Expansion	9,413,113
Estimated VMT for Project Baseline	57,143,476

Estimated Greenhouse Gas Emissions (mobile sources)		
Land Use	**N_2O**	**CH_4**
	tons	tons
Existing	2.2	1.8
Expansion	0.4	0.4
Project Baseline	2.7	2.2

Estimated Carbon Equivalent (mobile sources)		
Land Use	**N_2O**	**CH_4**
Carbon Equivalent	**310**	**21**
	tons	tons
Existing	688	38
Expansion	136	8
Project Baseline	824	46

GREENHOUSE GAS EMISSIONS CALCULATION - Electricity

Electrical Usage Rate

	General Electrical Usage (Kwh/Year)[a]
Existing	3,396,325
Expansion	1,096,852
Project Baseline	4,493,177
Project with LEED	4,378,008

Emission Factor (pounds/Kwh)[b]			
	N_2O	CH_4	CO_2
	3.70E-06	6.70E-06	0.805

Estimated Greenhouse Gas Emissions (Electricity)			
Land Use	N_2O	CH_4	CO_2
	tons	tons	tons
Existing	0.006	0.010	1,239
Expansion	0.002	0.003	400.278
Project Baseline	0.008	0.014	1,640
Project with LEED	0.007	0.013	1,598

Estimated Carbon Equivalent (Electricity)			
Land Use	N_2O	CH_4	CO_2
Carbon Equivalent	**310**	**21**	**1**
	tons	tons	tons
Existing	1.77	0.22	1,239
Expansion	0.57	0.1	400.3
Project Baseline	2.34	0.29	1,640
Project with LEED	2.28	0.28	1,598

a) Based on existing Fashion Square electricity use.

b) California Climate Action Registry, *General Reporting Protocol*, March 2007.

GREENHOUSE GAS EMISSIONS CALCULATION - Electricity From Water Consumption

Electrical Usage Rate From Water Consumption

	Electrical Usage from Water Consumption (Kwh/Year)[a]
Existing	197,653
Expansion	63,833
Project Baseline	261,486
Project with LEED	242,783

Emission Factor (pounds/Kwh)[b]			
	N_2O	**CH_4**	**CO_2**
	3.70E-06	6.70E-06	0.805

Estimated Greenhouse Gas Emissions (Water Consumption)			
Land Use	**N_2O**	**CH_4**	**CO_2**
	tons	tons	tons
Existing	0.00033	0.00060	72
Expansion	0.00011	0.00019	23
Project Baseline	0.00044	0.00079	95
Project with LEED	0.00041	0.00074	89

Estimated Carbon Equivalent (Water Consumption)			
Land Use	**N_2O**	**CH_4**	**CO_2**
Carbon Equivalent	**310**	**21**	**1**
	tons	tons	tons
Existing	0.103	0.013	72
Expansion	0.033	0.004	23
Project Baseline	0.136	0.017	95
Project with LEED	0.126	0.015	89

a) Based on existing Fashion Square water usage.

b) California Climate Action Registry, *General Reporting Protocol*, March 2007.

GREENHOUSE GAS EMISSIONS CALCULATION - Natural Gas

Natural Gas Usage Rate

	Natural Gas Use (cubic ft./month)[a]	**Natural Gas Use (mmBTU/year)**
Existing	2,443,998	29,328
Expansion	680,096	8,161
Project Baseline	3,124,094	37,489

Emission Factor (kg/mmBTU)[b]			
	N_2O	**CH_4**	**CO_2**
	0.0001	0.0059	52.78

Estimated Greenhouse Gas Emissions (Natural Gas)			
Land Use	**N_2O**	**CH_4**	**CO_2**
	tons	tons	tons
Existing	0.003	0.173	1,548
Expansion	0.001	0.048	431
Project Baseline	0.004	0.221	1,979

Estimated Carbon Equivalent (Natural Gas)			
Land Use	**N_2O**	**CH_4**	**CO_2**
Carbon Equivalent	**310**	**21**	**1**
	tons	tons	tons
Existing	0.91	3.63	1,548
Expansion	0.25	1.01	431
Project Baseline	1.16	4.64	1,979

a) SCAQMD, CEQA Air Quality Handbook, Table A-9-11-A, 1993. Assumes a natural gas generation rate of 2.9 CF/SF/month for retail and restaurant uses.

b) California Climate Action Registry, *General Reporting Protocol* , March 2007.

GREENHOUSE GAS EMISSIONS CALCULATION - Mobile Source Construction

N_2O to NO_X Ratio	0.048

Emissions Factors from EMFAC2007	
Daily VMT	218,863,000
NO_X (tons/mi)	0.000001280
N_2O (tons/mi)	0.000000061

Estimated Construction VMT	1,264,032

Estimated Greenhouse Gas Emissions (mobile sources construction)	
	N_2O
	tons
Construction	0.1

Estimated Carbon Equivalent (mobile sources construction)	
Land Use	**N_2O**
Carbon Equivalent	**310**
	tons
Construction	24

Annual VMT Calculations

	ADT		
	Weekday	Weekend	Total
Existing	24,882	32,423	57,305
Expansion	4,964	6,252	11,216
Proposed	29,846	38,675	68,521

	Daily VMT (ADT x 4.85)		
	Weekday	Weekend	Total
Existing	120,678	157,252	277,929
Expansion	24,075	30,322	54,398
Proposed	144,753	187,574	332,327

	Annual VMT (Weekday 260 Days, Weekend 104 Days)			
	Weekday	Weekend	Total	Average Daily Annual
Existing	31,376,202	16,354,161	47,730,363	130,768
Expansion	6,259,604	3,153,509	9,413,113	
Proposed	37,635,806	19,507,670	57,143,476	156,557

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Existing Weekday Operational.urb924

Project Name: Sherman Oaks Existing Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.13	1.53	1.56	0.00	0.00	0.00	1,835.95

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	18.31	25.13	209.20	0.22	38.46	7.50	22,409.77

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	18.44	26.66	210.76	0.22	38.46	7.50	24,245.72

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.11	1.53	1.28	0.00	0.00	0.00	1,835.44
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings							
TOTALS (tons/year, unmitigated)	0.13	1.53	1.56	0.00	0.00	0.00	1,835.95

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	18.31	25.13	209.20	0.22	38.46	7.50	22,409.77
TOTALS (tons/year, unmitigated)	18.31	25.13	209.20	0.22	38.46	7.50	22,409.77

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		28.70	1000 sq ft	867.00	24,882.90	121,926.22
					24,882.90	121,926.22

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: J:\Projects\Sherman Oaks Fashion Square Noise Monitoring 2006-127\AQN\Operations\Revised Operational\Proposed Weekday Operational.urb924

Project Name: Sherman Oaks Proposed Weekday Operations

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.17	2.02	1.98	0.00	0.00	0.00	2,428.71

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	22.07	30.14	250.91	0.27	46.13	9.00	26,878.63

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	22.24	32.16	252.89	0.27	46.13	9.00	29,307.34

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.15	2.02	1.70	0.00	0.00	0.00	2,428.20
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings							
TOTALS (tons/year, unmitigated)	0.17	2.02	1.98	0.00	0.00	0.00	2,428.71

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	22.07	30.14	250.91	0.27	46.13	9.00	26,878.63
TOTALS (tons/year, unmitigated)	22.07	30.14	250.91	0.27	46.13	9.00	26,878.63

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		26.02	1000 sq ft	1,147.00	29,844.94	146,240.21
					29,844.94	146,240.21

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.9	4.9	4.9	4.9	4.9	4.9

3/5/2008 12:05:01 PM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is 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.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	**Control Measure**	**Guidance**
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure		Guidance
Unpaved roads/parking lots	19-1	Stabilize soils to meet the applicable performance standards; and	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
	19-2	Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	
Vacant land	20-1	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL MEASURES
Earth-moving	(1A)	Cease all active operations; OR
	(2A)	Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B)	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR
	(1B)	Apply chemical stabilizers prior to wind event; OR
	(2B)	Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR
	(3B)	Take the actions specified in Table 2, Item (3c); OR
	(4B)	Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C)	Apply chemical stabilizers prior to wind event; OR
	(2C)	Apply water twice per hour during active operation; OR
	(3C)	Stop all vehicular traffic.
Open storage piles	(1D)	Apply water twice per hour; OR
	(2D)	Install temporary coverings.
Paved road track-out	(1E)	Cover all haul vehicles; OR
	(2E)	Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

Appendix G

Mobile Noise

Sherman Oaks Fashion Square Expansion Project CNEL Noise Estimates - Based on Saturday Peak Hour

Existing Conditions (2007)

ROAD SEGMENT	from:	to:	TOT. # VEH.	[VALENT LANE DIST/ D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1379	26	62	40	91	1255	6	83	3	41	35	56	35	56	35	56	65.3	63.2	65.4	69.5	70.5	70.5	67.0
Riverside	Hazeltine	Woodman	2116	23	59	37	91	1926	6	127	3	63	35	56	35	56	35	56	67.2	65.1	67.3	71.4	72.7	72.7	69.0
Riverside	Woodman	Sunnyslope	2020	26	62	40	91	1838	6	121	3	61	35	56	35	56	35	56	67.0	64.9	67.1	71.2	72.1	72.1	68.6
Woodman	Magnolia	Riverside	2146	22	58	36	91	1953	6	129	3	64	35	56	35	56	35	56	67.2	65.1	68.8	72.1	73.5	73.5	69.7
Woodman	101	Moorpark	2391	20	56	33	91	2176	6	143	3	72	35	56	35	56	35	56	67.7	65.6	67.8	71.9	73.7	73.6	69.7
Hazeltine	Fashion Square	Moorpark	1598	22	58	36	91	1454	6	96	3	48	35	56	35	56	35	56	65.9	63.8	67.6	70.8	72.3	72.3	68.5
Hazeltine	Magnolia	Riverside	1778	20	56	33	91	1618	6	107	3	53	35	56	35	56	35	56	66.4	64.3	68.0	71.3	73.0	73.0	69.0

Future No Project Conditions (2012)

ROAD SEGMENT	from:	to:	TOT. # VEH.	[VALENT LANE DIST/ D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1615	26	62	40	91	1470	6	97	3	48	35	56	35	56	35	56	66.0	63.9	66.1	70.2	71.2	71.2	67.6
Riverside	Hazeltine	Woodman	2456	23	59	37	91	2235	6	147	3	74	35	56	35	56	35	56	67.8	65.7	67.9	72.0	73.4	73.3	69.6
Riverside	Woodman	Sunnyslope	2394	26	62	40	91	2179	6	144	3	72	35	56	35	56	35	56	67.7	65.6	67.8	71.9	72.9	72.9	69.4
Woodman	Magnolia	Riverside	2440	22	58	36	91	2220	6	146	3	73	35	56	35	56	35	56	67.8	65.7	69.4	72.6	74.1	74.1	70.3
Woodman	101	Moorpark	2789	20	56	33	91	2538	6	167	3	84	35	56	35	56	35	56	68.4	66.3	68.5	72.6	74.3	74.3	70.4
Hazeltine	Fashion Square	Moorpark	1831	22	58	36	91	1666	6	110	3	55	35	56	35	56	35	56	66.5	64.4	68.1	71.4	72.9	72.8	69.1
Hazeltine	Magnolia	Riverside	2018	20	56	33	91	1836	6	121	3	61	35	56	35	56	35	56	66.9	64.9	68.6	71.8	73.6	73.6	69.6

Future With Project Conditions (2012)

ROAD SEGMENT	from:	to:	TOT. # VEH.	[VALENT LANE DIST/ D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1742	26	62	40	91	1585	6	105	3	52	35	56	35	56	35	56	66.3	64.2	66.4	70.5	71.5	71.5	68.0
Riverside	Hazeltine	Woodman	2742	23	59	37	91	2495	6	164	3	82	35	56	35	56	35	56	68.3	66.2	68.4	72.5	73.8	73.8	70.1
Riverside	Woodman	Sunnyslope	2505	26	62	40	91	2280	6	150	3	75	35	56	35	56	35	56	67.9	65.8	68.0	72.1	73.1	73.1	69.6
Woodman	Magnolia	Riverside	2484	22	58	36	91	2260	6	149	3	75	35	56	35	56	35	56	67.9	65.8	69.5	72.7	74.2	74.2	70.4
Woodman	101	Moorpark	2842	20	56	33	91	2586	6	171	3	85	35	56	35	56	35	56	68.4	66.4	68.6	72.7	74.4	74.4	70.4
Hazeltine	Fashion Square	Moorpark	1891	22	58	36	91	1721	6	113	3	57	35	56	35	56	35	56	66.7	64.6	68.3	71.5	73.0	73.0	69.2
Hazeltine	Magnolia	Riverside	2134	20	56	33	91	1942	6	128	3	64	35	56	35	56	35	56	67.2	65.1	68.8	72.1	73.8	73.8	69.8

Sherman Oaks Fashion Square Expansion Project CNEL Noise Estimates - Based on PM Peak Hour

Existing Conditions (2007)

ROAD SEGMENT	from:	to:	TOT. # VEH.	EQUIVALENT LANE DISTANCE D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1561	26	62	40	91	1421	6	93.7	3	46.8	35	56	35	56	35	56	65.8	63.7	65.9	70.1	71.0	71.0	67.5
Riverside	Hazeltine	Woodman	2423	23	59	37	91	2204	6	145	3	72.7	35	56	35	56	35	56	67.7	65.7	67.9	72.0	73.3	73.3	69.6
Riverside	Woodman	Sunnyslope	2663	26	62	40	91	2423	6	160	3	79.9	35	56	35	56	35	56	68.2	66.1	68.3	72.4	73.3	73.3	69.8
Woodman	Magnolia	Riverside	2418	22	58	36	91	2200	6	145	3	72.5	35	56	35	56	35	56	67.7	65.6	69.4	72.6	74.1	74.1	70.3
Woodman	101	Moorpark	2654	20	56	33	91	2415	6	159	3	79.6	35	56	35	56	35	56	68.1	66.1	68.3	72.4	74.1	74.1	70.1
Hazeltine	Fashion Square	Moorpark	1945.5	22	58	36	91	1770	6	117	3	58.4	35	56	35	56	35	56	66.8	64.7	68.4	71.7	73.1	73.1	69.3
Hazeltine	Magnolia	Riverside	2157	20	56	33	91	1963	6	129	3	64.7	35	56	35	56	35	56	67.2	65.2	68.9	72.1	73.9	73.8	69.9

Future No Project Conditions (2012)

ROAD SEGMENT	from:	to:	TOT. # VEH.	EQUIVALENT LANE DISTANCE D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1786	26	62	40	91	1625	6	107	3	53.6	35	56	35	56	35	56	66.4	64.3	66.5	70.6	71.6	71.6	68.1
Riverside	Hazeltine	Woodman	2779	23	59	37	91	2529	6	167	3	83.4	35	56	35	56	35	56	68.3	66.3	68.5	72.6	73.9	73.9	70.2
Riverside	Woodman	Sunnyslope	3031	26	62	40	91	2758	6	182	3	90.9	35	56	35	56	35	56	68.7	66.6	68.8	72.9	73.9	73.9	70.4
Woodman	Magnolia	Riverside	2708	22	58	36	91	2464	6	162	3	81.2	35	56	35	56	35	56	68.2	66.1	69.8	73.1	74.6	74.5	70.8
Woodman	101	Moorpark	3023.5	20	56	33	91	2751	6	181	3	90.7	35	56	35	56	35	56	68.7	66.6	68.8	72.9	74.7	74.7	70.7
Hazeltine	Fashion Square	Moorpark	2180.5	22	58	36	91	1984	6	131	3	65.4	35	56	35	56	35	56	67.3	65.2	68.9	72.2	73.6	73.6	69.8
Hazeltine	Magnolia	Riverside	2416.5	20	56	33	91	2199	6	145	3	72.5	35	56	35	56	35	56	67.7	65.6	69.3	72.6	74.3	74.3	70.4

Future With Project Conditions (2012)

ROAD SEGMENT	from:	to:	TOT. # VEH.	EQUIVALENT LANE DISTANCE D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1898	26	62	40	91	1727	6	114	3	56.9	35	56	35	56	35	56	66.7	64.6	66.8	70.9	71.9	71.9	68.3
Riverside	Hazeltine	Woodman	3062	23	59	37	91	2786	6	184	3	91.9	35	56	35	56	35	56	68.8	66.7	68.9	73.0	74.3	74.3	70.6
Riverside	Woodman	Sunnyslope	3113	26	62	40	91	2833	6	187	3	93.4	35	56	35	56	35	56	68.8	66.7	68.9	73.1	74.0	74.0	70.5
Woodman	Magnolia	Riverside	2731	22	58	36	91	2485	6	164	3	81.9	35	56	35	56	35	56	68.3	66.2	69.9	73.1	74.6	74.6	70.8
Woodman	101	Moorpark	3049	20	56	33	91	2775	6	183	3	91.5	35	56	35	56	35	56	68.7	66.7	68.9	73.0	74.7	74.7	70.7
Hazeltine	Fashion Square	Moorpark	2222.5	22	58	36	91	2022	6	133	3	66.7	35	56	35	56	35	56	67.4	65.3	69.0	72.2	73.7	73.7	69.9
Hazeltine	Magnolia	Riverside	2514	20	56	33	91	2288	6	151	3	75.4	35	56	35	56	35	56	67.9	65.8	69.5	72.8	74.5	74.5	70.5

Sherman Oaks Fashion Square Expansion Project CNEL Noise Estimates - Based on AM Peak Hour

Existing Conditions (2007)

ROAD SEGMENT	from:	to:	TOT. # VEH.	EQUIVALENT LANE DISTANCE D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1626	26	62	40	91	1479	6	97.5	3	48.8	35	56	35	56	35	56	66.0	63.9	66.1	70.2	71.2	71.2	67.7
Riverside	Hazeltine	Woodman	2394	23	59	37	91	2178	6	144	3	71.8	35	56	35	56	35	56	67.7	65.6	67.8	71.9	73.2	73.2	69.5
Riverside	Woodman	Sunnyslope	2814	26	62	40	91	2561	6	169	3	84.4	35	56	35	56	35	56	68.4	66.3	68.5	72.6	73.6	73.6	70.1
Woodman	Magnolia	Riverside	2456	22	58	36	91	2235	6	147	3	73.7	35	56	35	56	35	56	67.8	65.7	69.4	72.7	74.1	74.1	70.3
Woodman	101	Moorpark	2420.5	20	56	33	91	2203	6	145	3	72.6	35	56	35	56	35	56	67.7	65.7	67.9	72.0	73.7	73.7	69.7
Hazeltine	Fashion Square	Moorpark	1788	22	58	36	91	1627	6	107	3	53.6	35	56	35	56	35	56	66.4	64.3	68.0	71.3	72.8	72.7	69.0
Hazeltine	Magnolia	Riverside	1667	20	56	33	91	1517	6	100	3	50	35	56	35	56	35	56	66.1	64.0	67.7	71.0	72.7	72.7	68.8

Future No Project Conditions (2012)

ROAD SEGMENT	from:	to:	TOT. # VEH.	EQUIVALENT LANE DISTANCE D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1846	26	62	40	91	1680	6	111	3	55.4	35	56	35	56	35	56	66.6	64.5	66.7	70.8	71.7	71.7	68.2
Riverside	Hazeltine	Woodman	2712	23	59	37	91	2468	6	163	3	81.4	35	56	35	56	35	56	68.2	66.1	68.3	72.5	73.8	73.8	70.1
Riverside	Woodman	Sunnyslope	3273	26	62	40	91	2978	6	196	3	98.2	35	56	35	56	35	56	69.0	67.0	69.2	73.3	74.2	74.2	70.7
Woodman	Magnolia	Riverside	2616.5	22	58	36	91	2381	6	157	3	78.5	35	56	35	56	35	56	68.1	66.0	69.7	72.9	74.4	74.4	70.6
Woodman	101	Moorpark	2735.5	20	56	33	91	2489	6	164	3	82.1	35	56	35	56	35	56	68.3	66.2	68.4	72.5	74.2	74.2	70.3
Hazeltine	Fashion Square	Moorpark	2010.5	22	58	36	91	1830	6	121	3	60.3	35	56	35	56	35	56	66.9	64.8	68.5	71.8	73.3	73.3	69.5
Hazeltine	Magnolia	Riverside	1877	20	56	33	91	1708	6	113	3	56.3	35	56	35	56	35	56	66.6	64.5	68.3	71.5	73.2	73.2	69.3

Future With Project Conditions (2012)

ROAD SEGMENT	from:	to:	TOT. # VEH.	EQUIVALENT LANE DISTANCE D1	D2	Eq. Dis.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Eq. Dis. Leq (dBA)	Eq. Dis. CNEL (dBA)	50 ft ROW Leq (dBA)
Riverside	Van Nuys	Hazeltine	1865	26	62	40	91	1697	6	112	3	56	35	56	35	56	35	56	66.6	64.5	66.7	70.8	71.8	71.8	68.3
Riverside	Hazeltine	Woodman	2759	23	59	37	91	2510	6	166	3	82.8	35	56	35	56	35	56	68.3	66.2	68.4	72.5	73.9	73.8	70.1
Riverside	Woodman	Sunnyslope	3290	26	62	40	91	2994	6	197	3	98.7	35	56	35	56	35	56	69.1	67.0	69.2	73.3	74.2	74.2	70.7
Woodman	Magnolia	Riverside	2757.5	22	58	36	91	2509	6	165	3	82.7	35	56	35	56	35	56	68.3	66.2	69.9	73.2	74.6	74.6	70.8
Woodman	101	Moorpark	2793	20	56	33	91	2542	6	168	3	83.8	35	56	35	56	35	56	68.4	66.3	68.5	72.6	74.3	74.3	70.4
Hazeltine	Fashion Square	Moorpark	2019.5	22	58	36	91	1838	6	121	3	60.6	35	56	35	56	35	56	67.0	64.9	68.6	71.8	73.3	73.3	69.5
Hazeltine	Magnolia	Riverside	1894	20	56	33	91	1724	6	114	3	56.8	35	56	35	56	35	56	66.7	64.6	68.3	71.5	73.3	73.3	69.3