WESTFIELD FAHSION SQUARE EXPANSION PROJECT AIR QUALITY AND NOISE IMPACT REPORT

taha
environmental planners

Prepared for

PLANNING ASSOCIATES

Prepared by

TERRY A. HAYES ASSOCIATES LLC

March 6, 2008

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WESTFIELD FASHION SQUARE EXPANSION PROJECT

AIR QUALITY AND NOISE IMPACT REPORT

Prepared for

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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.

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[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*)*.

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. 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.[3] 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, chemistry, and climate change are very complex. For example, historical records indicate a natural variability in surface temperature.[4] Historical records also indicate that atmospheric concentrations of a number of GHG have increased significantly since the beginning of the industrial revolution.[5] 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.[6]

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

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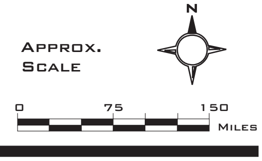
[3]Finlayson-Pitts, Barbara J., and James N. Pitts, Jr., *Chemistry of the Upper and Lower Atmosphere*, 1999.
[4]*Ibid*.
[5]*Ibid*.
[6]California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF, December 2006.

LEGEND:

South Coast Air Basin

State of California



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

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FIGURE AQ-1

SOUTH COAST AIR BASIN

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.[7] 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.[8] 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.[9] 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.

On September 27, 2006, AB 32, the California Global Warming Solutions Act of 2006, was enacted by the State of California.[10] 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.[11] 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.[12] 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

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

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

[9]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.

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

[11]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.

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

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,[13] which rules would take effect no later than 2012.[14] 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.[15] 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 1, 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.

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

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

[14] *Ibid*.

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

growth in natural gas use by 8.8 million therms per year.[16] The savings attributable to new nonresidential buildings are 163.2 GWh/y of electricity savings and 0.5 million therms of natural gas.[17] 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.[18] 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.[19] 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.

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[16] California Energy Commission, *2005 Building Energy Efficiency Standards Nonresidential Compliance Manual*, March 2005.
[17] *Ibid*.
[18] *Ibid*.
[19] City of Los Angeles, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, May 2007.

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}.

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}.[20]

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.

[20]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		Federal	
		Standards	Attainment Status	Standards	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.

3.2.2 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.

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.[21]

The annual average temperature in the project area is 64.1 degrees Fahrenheit (°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 inches during the spring, approximately 2.3 inches during the fall, and less than 1 inch during the summer.[22]

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.

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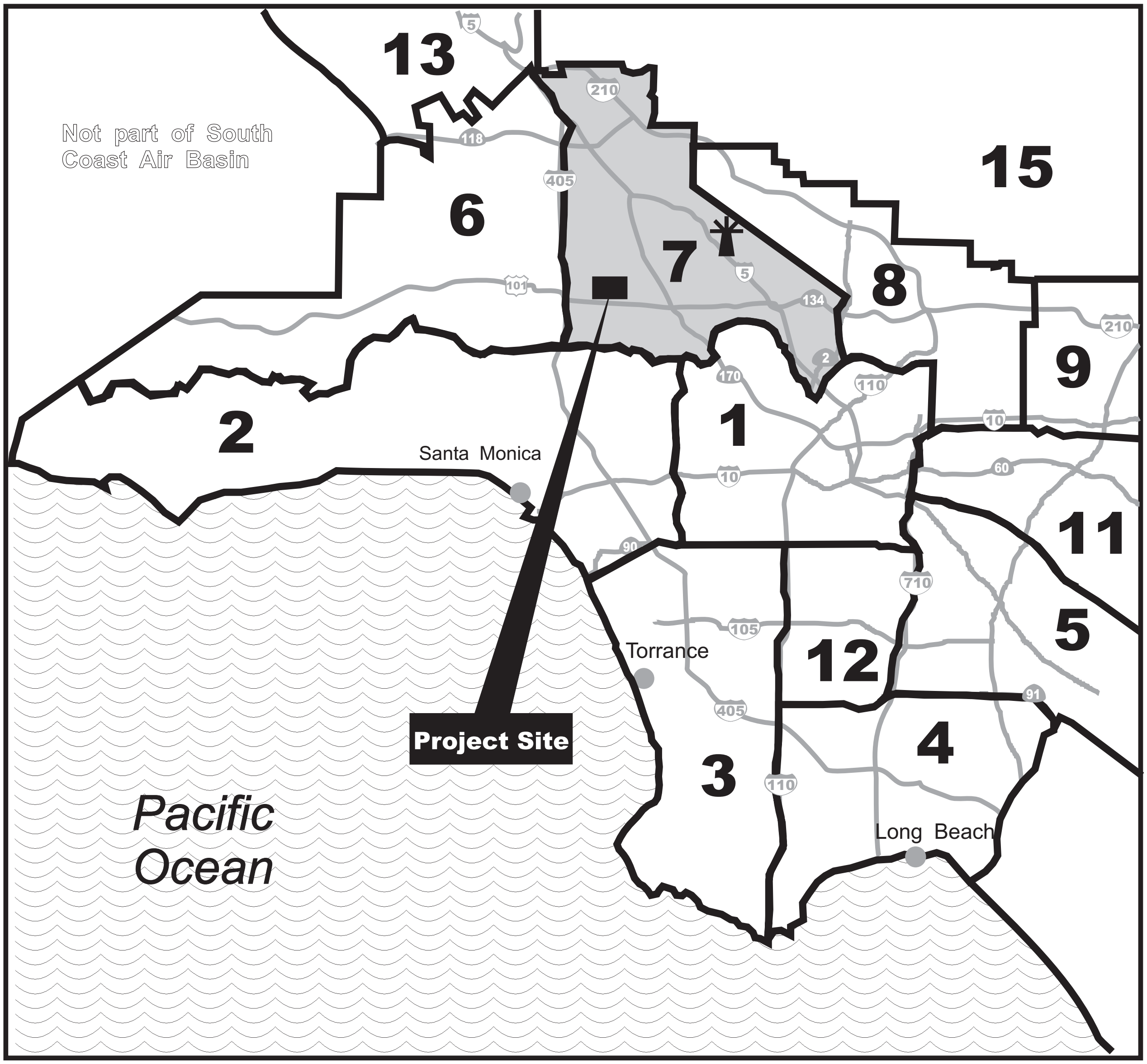
[21]SCAQMD, http://www.aqmd.gov/smog/metdata/MeteorologicalData.html. See Appendix A.
[22]Western Regional Climate Center, http:// www.wrrc.dri.edu, accessed July 26, 2007. See Appendix A.



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

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

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FIGURE AQ-2

AIR MONITORING AREAS

TABLE 3-2: 2004-2006 AMBIENT AIR QUALITY DATA IN PROJECT VICINITY				
		Number of Days Above State Standard		
Pollutant	**Pollutant Concentration & Standards**	**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)				

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.[23,24]

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 located 3 meters (approximately 10 feet) from each intersection corner.[25] 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)

[23] 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).

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

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

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.

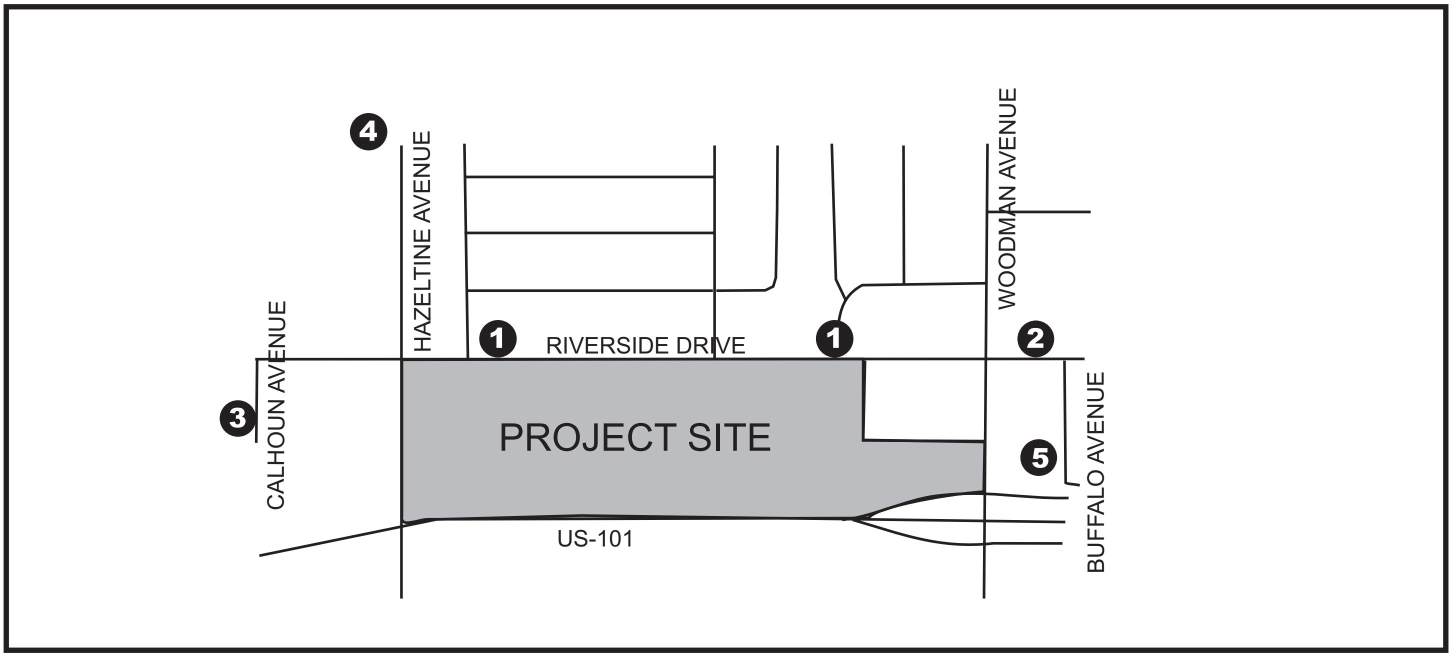
3.3.6 Sensitive Receptors

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.

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.



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

SOURCE: TAHA, 2008

Not to Scale

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FIGURE AQ-3

AIR QUALITY RECEPTORS

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.[26]

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).[27] In January 2005, the SCAQMD supplemented the SCAQMD LST Guidance Document with *Sample Construction Scenarios for Projects Less than Five Acres in Size*.[28]

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 model uses a traffic algorithm for estimating vehicular queue lengths at signalized intersections.[29] 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.

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

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 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;[30]
- 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

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

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 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.[31] 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.

[31]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/**
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**
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

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/**
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**
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**

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/**
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**
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**

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/**
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**
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.[32]

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 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.[33] 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.

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

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

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)

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/						
	1-hour (parts per million)			**8-hour (parts per million)**		
Intersection	**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.[34] The proposed project would develop commercial uses on the project site. The commercial uses are not anticipated to generate 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

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

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.[35] 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[36]. URBEMIS2007 uses emission factors obtained from the CARB's OFFROAD2007 model to calculate construction equipment emissions[37]. 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.[38] Neither the SCAQMD nor OFFROAD2007 provides construction equipment N_2O emission factors. Other models that have been developed to inventory GHG emissions, such as Clean Air and Climate Protection Software[39], Sustainable Communities Model[40], I-PLACS[41], EMFAC2007[42], and Climate Action Registry Reporting On-Line Tool[43], 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.[44] 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

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

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

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

[38]*Ibid.*

[39]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.

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

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

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

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

[44]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.

Project Applicant, Westfield Fashion Square currently consumes approximately 3,396,325 kilowatt-hours (kWh) per year.[45] 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.[46] 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.[47]

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 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.

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.[48] 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.

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

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

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

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

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

TABLE 3-13 ANNUAL GREENHOUSE GAS EMISSIONS			
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.			

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.[49] 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

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

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).[50] 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.[51] 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.[52]

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.

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.[53,54] 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.[55] 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.[56] 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

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[50]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.

[51]*Ibid.*

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

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

[54]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.

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

[56]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.

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.[57] 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 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.[58] OPR has also indicated that there may not be sufficient amount of information or research available to develop significance

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

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

thresholds.[59] 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.[60] 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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[59] *Ibid.*

[60] 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.[61] 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

[61]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

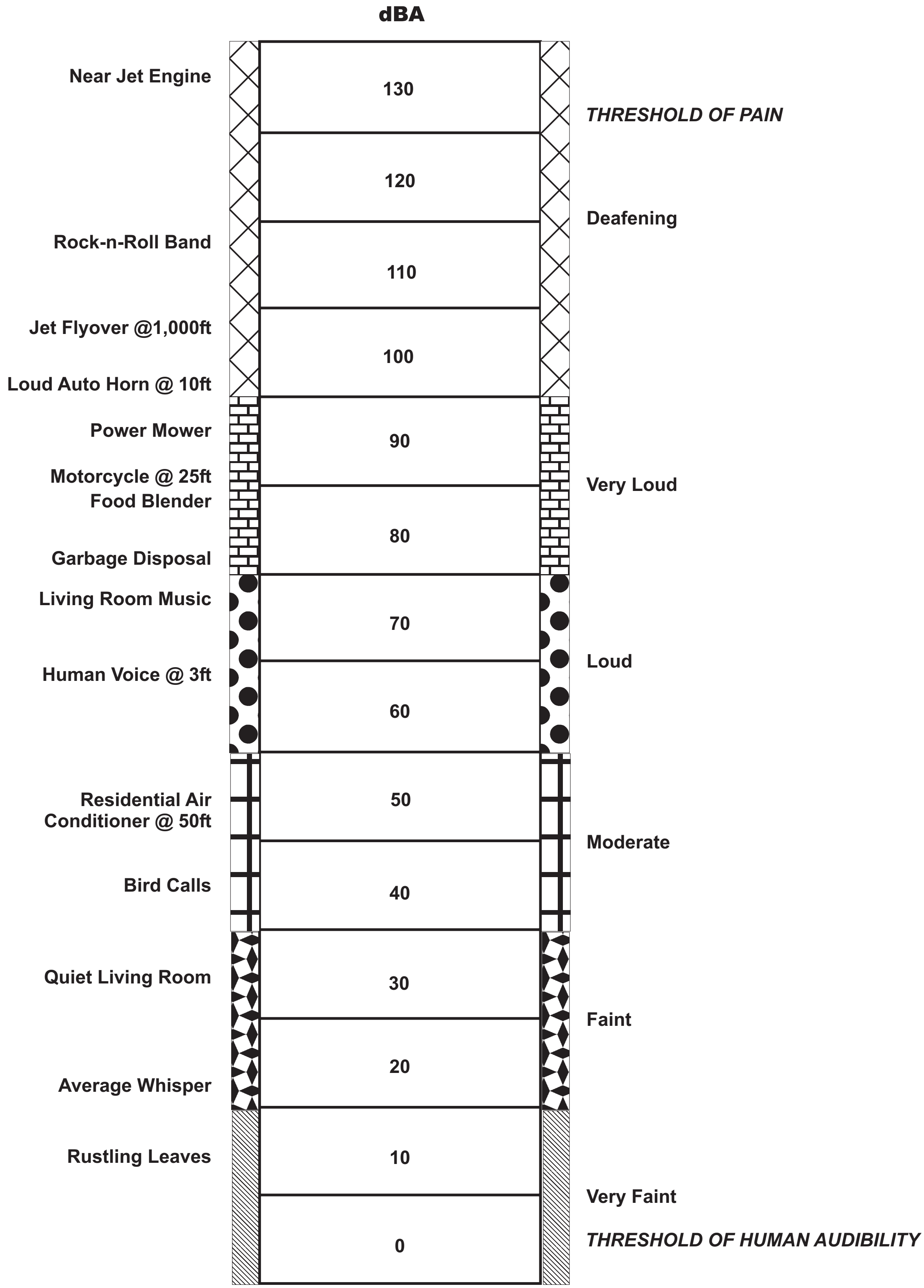
This noise analysis discusses sound levels in terms of Community Noise Equivalent Level (CNEL) and Equivalent Noise Level (L_{eq}).

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



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

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Planning Associates

FIGURE N-1

A-Weighted Decibel Scale

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.

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.[62] 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.[63] 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.[64] 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.

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

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

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

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.

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.[65]

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.[66]

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

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[65]Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, April 1995.
[66]Federal Railway Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, December 1998.

lower, well below the threshold of perception for humans which is around 65 Vdb RMS.[67] 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.

Applicable Regulations

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

4.2 EXISTING ENVIRONMENTAL SETTING

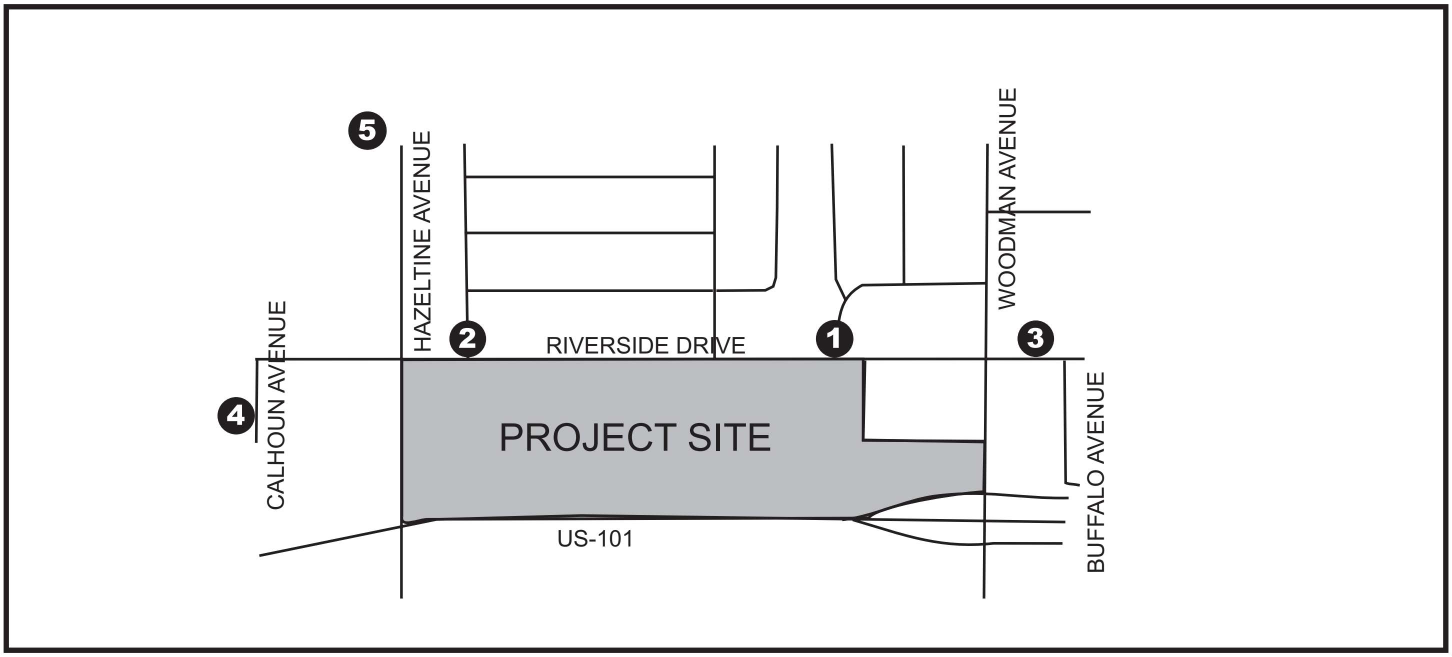
4.2.1 Existing Noise Environment

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.

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



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

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						

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

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)

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).

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:

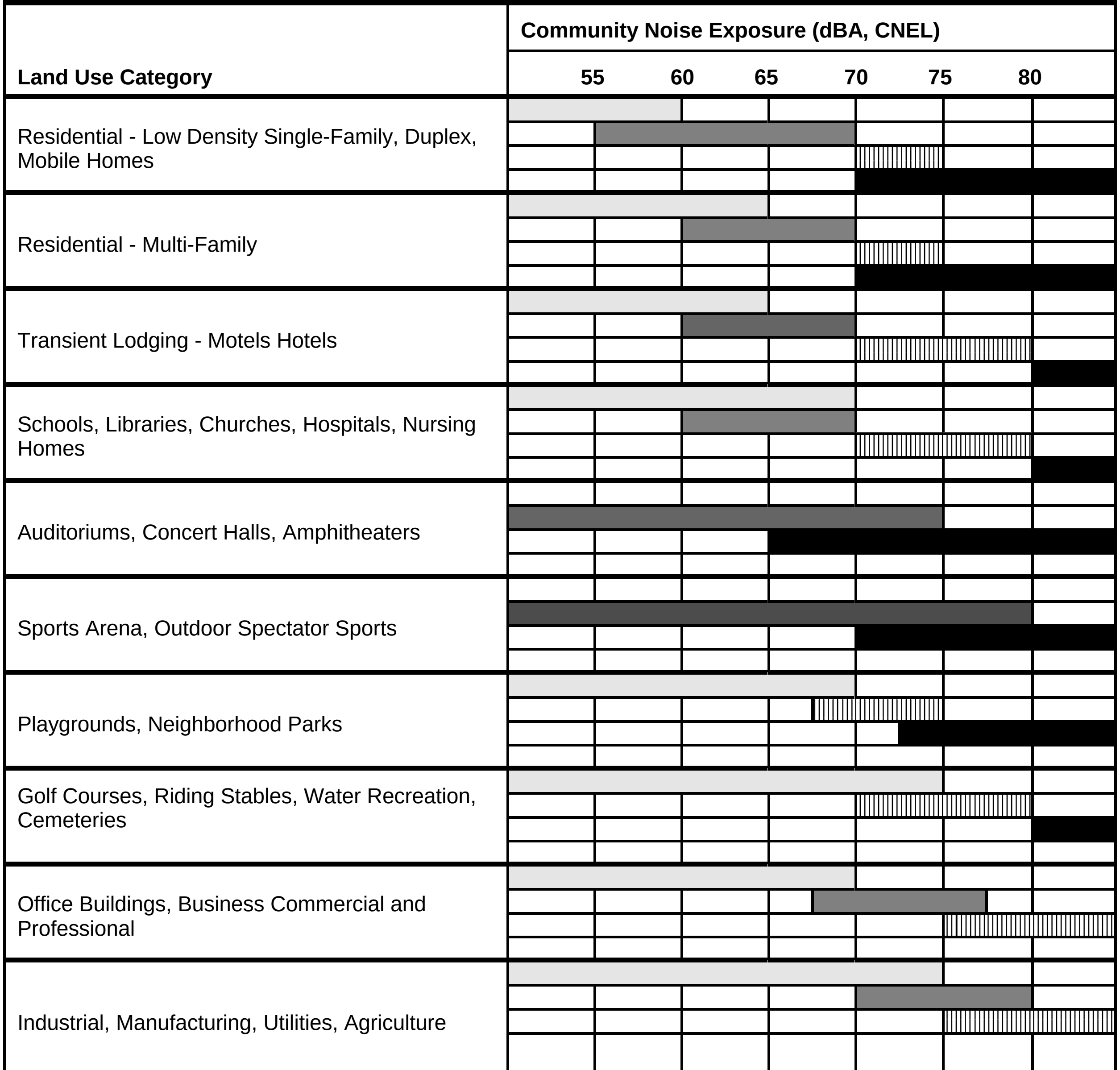
- Project-related mobile noise causes the ambient noise level measured at the property line of the affected uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category (**Table 4-4**) or any five decibel or more increase in noise level; or
- Stationary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

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.

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 4-5: 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.[68] "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

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

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.

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.

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

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]

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

	Estimated dBA, CNEL /b/				
Roadway Segment	**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.