
4.9 - Noise

4.9.1 - Introduction

This section describes the existing noise setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Noise Impact Analysis prepared in November 2007 by MBA. The entirety of the Noise Impact Assessment Report is contained in DEIR Appendix G.

As explained in Section 1, Introduction, where applicable, this project-level DEIR incorporates by reference information and analysis contained in the City of San Bernardino General Plan EIR and the Paradise Hills Specific Plan EIR, certified by the San Bernardino City Mayor and Common Council in 2005 and 1993, respectively. The General Plan EIR contemplated buildout of the General Plan at a programmatic level and concluded that all noise impacts were less than significant after mitigation. The Paradise Hills EIR provided project-level analysis of the smaller Paradise Hills project and concluded that all noise impacts were less than significant after mitigation.

This DEIR accounts for modifications to the baseline conditions that have occurred since certification of the previous EIRs and changes that have increased the size and intensity of the Proposed Project. Accordingly, not all of the conclusions in the previous EIRs are applicable to the Proposed Project and new analysis is provided for potential impacts not previously considered in those documents.

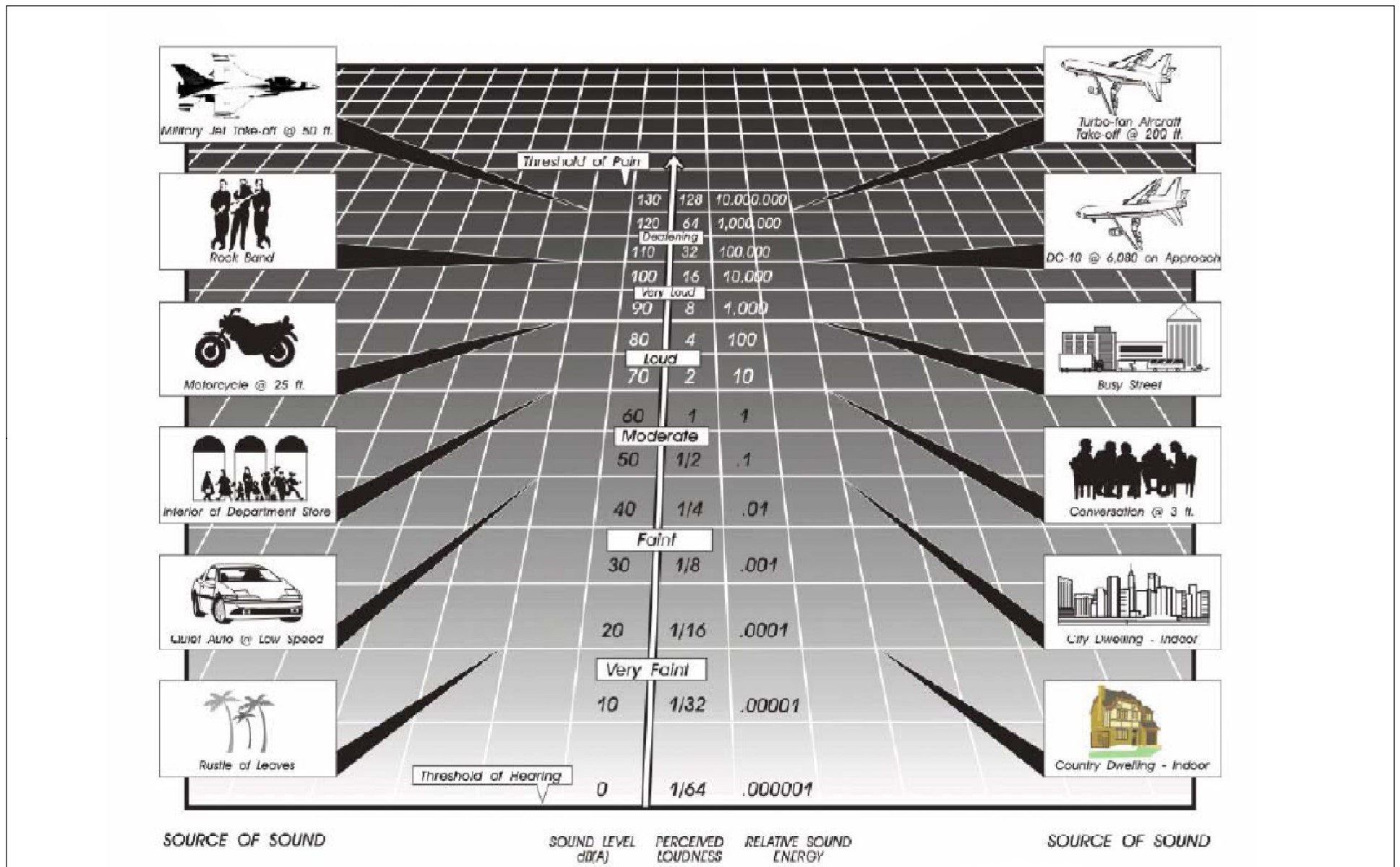
4.9.2 - Environmental Setting

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit that expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear. Exhibit 4.9-1 shows noise levels from typical urban and suburban sources.

Noise Measurement

Noise-equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels. The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period.

The Day-Night Average Level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day correction or penalty requires the addition of 10 decibels to sound levels at night between 10 p.m. and 7 a.m.



Source: County of Riverside General Plan Noise Elements.

The Community Noise Equivalent Level (CNEL) is similar to the L_{dn} , except that it has another addition of 5 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These adjustments are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason, the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of San Bernardino relies on the CNEL noise standard to assess transportation-related impacts on noise-sensitive land uses.

Traffic Noise Propagation

Traffic noise is analyzed as a line source noise, where the noise levels are normalized throughout a roadway segment. In order to assess the noise levels at different locations near the roadway, the roadway noise, the trajectory of the path from the source to receiver, and the location of the receiver are all considered in the noise prediction analysis. This analysis method is known as the source-path-receiver concept. In general, noise control measures can be applied to each of these three elements.

Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For traffic, a drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard, packed earth. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and a greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires.

Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise (acoustic energy) results in a noise-level increase of 3 dBA. Based on the FHWA community noise assessment criteria, this change is “barely perceptible.” In other words, doubling the traffic volume (assuming that the speed and truck mix do not change) results in a noise increase of 3 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. For a noise barrier to work, it must be high enough and long enough to block the view of a road. A noise barrier is most effective when placed close to the noise source or receiver. A noise barrier can achieve a 5-dBA noise-level reduction when it is tall enough to break the line of sight. When the noise barrier is a berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

Groundborne Vibration Fundamentals

Groundborne vibration consists of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibrations typically cause a nuisance only to people, but at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically an annoyance only to people indoors, where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may consist of the rattling of windows or dishes on shelves.

Vibration Descriptors

Vibration is quantified through the measurement of the motion of a particular point on the ground or structure. Since the current available vibration measurement devices measure either the velocity or acceleration of the ground or structure, vibratory motion is commonly described by identifying the peak particle velocity (PPV) or peak particle acceleration (PPA). The PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. However, for human response, an average vibration amplitude is more appropriate, since it takes time for the human body to respond to the vibration. Since the average particle velocity over time is zero, the root-mean-square amplitude of the vibration velocity is typically used to assess human response. The root-mean-square values are always less than PPV, and for typical single-frequency conditions, the root-mean-square value is about 70 percent of the PPV.

Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels, is denoted as L_v , and is based on the root-mean-square velocity amplitude. A commonly used abbreviation is VdB, which, in this text, is L_v based on the reference quantity of 1 micro-inch per second.

Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration. Generally, the thresholds of perception and annoyance

are higher for transient sources than continuous sources. Table 4.9-1 shows PPV levels for continuous and transient sources and the associated human response.

Table 4.9-1: Vibration Levels and Human Response

Peak Particle Velocity (inches/second)		Human Response
Continuous	Transient	
0.40	2.00	Severe
0.10	0.90	Strongly perceptible
0.04	0.25	Distinctly perceptible
0.01	0.04	Barely perceptible
Source: California Department of Transportation, 2004.		

Vibration Propagation

The propagation of groundborne vibration is not as simple to model as airborne noise. This is caused by noise in the air that travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground’s surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a “push-pull” fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature, and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

Construction-Related Vibration Level Prediction

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings near construction activities respond to these vibrations with varying results, ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 4.9-2 gives approximate vibration levels for particular construction activities. The data in the table provides a reasonable estimate for a wide range of soil conditions.

Table 4.9-2: Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L _v) at 25 feet
Pile driver (impact)	1.518 (upper range) 0.644 (typical)	112 104
Pile driver (sonic)	0.734 (upper range) 0.170 (typical)	105 93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 (soil) 0.017 (rock)	66 75
Vibratory roller	0.210	106
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: California Department of Transportation, 2004. Federal Transit Administration, 1995.

Existing Noise Environment

To determine the existing noise environment, short-term, peak-hour noise measurements were taken at nine locations in the project study area, and 24-hour noise measurements were taken by MBA personnel at two locations on the project site in September and November 2007. These measurements were then used to calculate ambient noise levels, both on and around the project site. The project site is located in a largely vacant area and onsite noise levels were relatively low, ranging from 40 to 45.2 dB.

Sensitive Receptors

Sensitive receptors are land uses that contain persons who are sensitive to increases in ambient noise levels. Examples of sensitive receptors include hospitals, schools, convalescent facilities, and residential areas.

Regulatory Framework

Construction vibration is regulated in accordance with standards established by the Transportation and Construction-Induced Vibration Guidance Manual issued by the California Department of Transportation (Caltrans). The manual recommends a threshold of 0.2 inch per second or 106 VdB (dB re: 1 micro-inch per second) as the significance level for construction activities.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element

must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.” The City of San Bernardino’s adopted land use compatibility guidelines are discussed below.

Local

City of San Bernardino

The project site is located in the jurisdiction of the City of San Bernardino. The City General Plan Noise Element establishes goals and policies related to noise control. The most stringent noise standards are associated with residential land uses. The General Plan limits “normally acceptable” outdoor noise to 60 dBA CNEL and interior noise levels to 45 dBA CNEL. The General Plan allows exterior noise levels up to 70 dBA CNEL at residences where noise levels have been substantially mitigated using reasonable application of the best available noise reduction technology and interior noise levels do not exceed 45 dBA CNEL (i.e., conditionally acceptable). Noise levels over 70 dB are considered “normally unacceptable” and noise levels above 75 dB are considered “clearly unacceptable” (CSB 2005).

NOP Comments

No letters were received during the NOP period and no comments were made at the scoping meeting regarding noise.

Methodology

MBA prepared a Noise Impact Analysis, dated June 2007, to determine the offsite and onsite noise impacts associated with the Proposed Project.

4.9.3 - Thresholds of Significance

According to the CEQA Guidelines’ Appendix G, Environmental Checklist, to determine whether noise impacts are significant environmental effects, the following questions are analyzed and evaluated: Would the project result in:

- a.) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b.) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- c.) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- d.) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

- e.) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- f.) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

“Substantial” is not defined within the CEQA guidelines as a quantitative measure, nor is it defined by the City of San Bernardino. A change of 1 dBA or less is generally not detectable by the human ear, while a change of 3 dBA, under ambient conditions, may be noticeable to some people. A change of 5 dBA is readily noticeable, and a change of 10 dBA is perceived by the human ear as a doubling of sound. For the purpose of this evaluation, noise impacts will be considered significant if the UHSP project increased sound levels by 3 dBA and if: 1) the existing noise levels already exceeded 60 dBA CNEL at an existing residence, or 2) the project increased noise levels from below 60 dBA CNEL to above 70 dBA CNEL. In the City of San Bernardino General Plan Noise Element, 60 dBA is the noise standard for residential development.

In addition, the Caltrans Transportation- and Construction-Induced Vibration Guidance Manual provides thresholds of 0.5 PPV for construction and 1.0 PPV for construction.

4.9.4 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Construction Noise

Impact NOI-1: **The Proposed Project would generate substantial construction noise that may adversely impact nearby noise-sensitive land uses.**

Impact Analysis

Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Short-term noise impacts could occur during construction activities either from the noise impacts created from the transport of workers and movement of construction materials to and from the project site, or from the noise generated onsite during demolition, ground clearing, excavation, grading, and construction activities. Table 4.9-3 lists typical construction equipment noise levels for equipment that would be used during construction of the proposed project. Construction activities are carried out in discrete steps, each of which has a unique mix of equipment and, consequently, unique noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of

construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase.

Table 4.9-3: Construction Equipment Noise Levels

Construction Activity / Equipment	Maximum Noise Levels Measured (dBA at 50 feet)
Grading	89
Backhoe	90
Pneumatic tools	88
Air compressor	86
Crane	83
Plate compactor	89
Concrete vibrator	85
Trucks	87
Source: Federal Transit Administration, 1995	

As discussed above under Sensitive Receptors, the residential land uses to the south of the project site are the sensitive receptors of most concern as they relate to project construction noise. Table 4.9-4 provides the estimated maximum noise levels the sensitive receptors would be expected to experience during construction. Note that construction noise often varies significantly on a day-to-day basis, and the noise levels shown in the table represent a worst-case scenario.

Table 4.9-4: Estimated Construction Noise Levels at the Closest Sensitive Receptors

Receptor	Distance From Project Site (feet)	Maximum Noise Levels (L _{max} , dB)
Residences along North I Street	600	69
Noise levels based on construction noise at 90 dB measured at 50 feet from project site; assumes a 6-dB reduction for each doubling of distance. Noise levels in this table depict peak levels and do not predict the 24-hour weighted average (CNEL). Due to the distance from project (Planning Areas 16-20) and anticipated project construction schedule, CNEL values are not expected to exceed these maximum estimated noise levels. Source: Michael Brandman Associates, 2007.		

Maximum construction noise levels for residences along North I Street, the north side of W. 59th Street, the north ends of Crescent Street, North G Street, Berkeley Street, and Louise Street are estimated to be approximately 69 dB. However, actual maximum noise levels are expected to be lower than this because construction activities will be located on other portions of the site much of the time, and actual construction noise would be attenuated by existing block walls, elevation differences, mature vegetation at the residential properties, and the distance to the actual construction area on the project site. Construction noise would last the duration of construction, although it would be the most

noticeable during the initial months of intensive grading and building construction, and especially when these activities are in the eastern portion of the site.

Construction activities are carried out in discrete steps, each of which will create construction noise. Residents that move into the project during the earlier phases of development will experience an extended amount of construction noise compared to residents in later phases of development. Depending on the location of equipment relative to inhabited units, some residents may experience noise levels that exceed City standards. This impact is considered potentially significant. Once construction is complete, noise associated with those activities will be eliminated.

Grading and site preparation are expected to take approximately 3-6 months, followed by or in concert with construction of backbone infrastructure (e.g., roads, utility lines, etc.). After the site has been mass graded, groups of houses will be constructed in various Planning Areas depending on market conditions. The central and western portions of the site are relatively isolated, only the far eastern portion of the site is proximate to existing housing. Therefore, the evaluation of noise impacts in this area (i.e., south of Planning Areas 16-20) will constitute “worst-case” conditions for this analysis.

While actual construction noise levels are not expected to exceed applicable standards, the time needed to grade and develop the site may extend noise impacts over a period of many months or more than a year. Therefore, measures should be implemented to help reduce offsite noise impacts to the extent feasible.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- MM NOI-1a** At the time the grading permit application is submitted, the project applicant shall submit a Construction Noise Mitigation Plan to the City for review and approval. The plan shall depict the location of staging areas for construction equipment and describe how noise would be mitigated for any nearby sensitive receptors..
- MM NOI-1b** Stationary noise-generating equipment (such as pumps and generators) will be located as far as possible from nearby noise-sensitive receptors (i.e., homes south of PA 16-20) and no closer than 200 feet from any existing home within the Proposed Project site once occupancy has begun.
- MM NOI-1c** Noise-generating equipment will be shielded from nearby noise-sensitive receptors by noise-attenuating buffers such as structures or haul truck trailers.
- MM NOI-1d** Onsite noise sources located less than 600 feet from noise-sensitive receptors will be equipped with noise-reducing engine housings.

- MM NOI-1e** Portable acoustic barriers able to attenuate at least 6 dB will be placed around noise-generating equipment in the “East Village” portion of the project site.
- MM NOI-1f** Water tanks and equipment storage, staging, and warm-up areas will be located as far from noise-sensitive receptors as possible, and at least 200 feet from any existing home within the Proposed Project site once occupancy has begun.
- MM NOI-1g** All construction equipment shall utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- MM NOI-1h** No construction equipment shall be allowed to idle for more than 5 minutes if it is within 100 feet of an existing house.
- MM NOI-1i** Prior to approval of any subsequent tentative tract maps, the developer shall submit noise studies as appropriate for any residences within the project to assure that exterior and interior noise levels meet City noise standards based on actual final floor elevations, actual roadway cross sections and elevations, onsite topography after grading, etc. Walls or other attenuating improvements shall be installed as needed based on the results of these studies to assure onsite residences meet the City’s noise regulations.

Level of Significance After Mitigation

Less than significant impact.

Vibration

Impact NOI-2: Operational vibration associated with the Proposed Project may subject project residents to substantial vibration.

Impact Analysis

This impact assesses the Proposed Project’s potential to expose persons and structures to substantial vibration from operational activities. Because the City of San Bernardino does not have any adopted vibration exposure threshold criteria, the thresholds presented in the Caltrans’ Transportation- and Construction-Induced Vibration Guidance Manual were used in this analysis.

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The soils underlying the project site are relatively deep alluvium with extensive cobbles and boulders. Some earthwork may cause vibration as rocky materials are encountered and removed. However, extensive earthwork is not proposed in areas with exposed bedrock, which would require blasting or large ripping activities. The nearest sensitive receptor to pile driving activities would be the residential neighborhoods south of Planning Area 20. These residences are approximately 600 feet south of the project site at their closest point. Based on construction and operation of similar projects, vibration is

not expected to exceed a 0.3 peak particle velocity (PPV) threshold during construction and 0.5 PPV threshold during operations. Therefore, construction-related vibration from the Proposed Project would not result in a significant vibration impact. Impacts would be less than significant.

Operational Vibration

The Proposed Project would result in the occupancy of 980 residential units on the project site. The clubhouse would occasionally require the use of delivery trucks that may create vibration. For the purposes of evaluating operational vibration, a threshold of 0.02 inch per second or 86 VdB (dB re: 1 micro-inch per second) was used as the significance level for ongoing, operation-related impacts—the suggested threshold provided in the Transportation- and Construction-Induced Vibration Guidance Manual. Project residents located next to the proposed clubhouse will experience incremental operational vibration from onsite vehicular traffic, including delivery trucks, but are not expected to experience vibration levels in excess of this standard.

Residential neighborhoods to the south of the Planning Area 20 may also experience incremental increases in vibration from project excavation and/or construction. These residences are approximately 600 feet south of the project site at their closest point. As shown in Table 4.9-2, a large bulldozer, which would be comparable to a tractor-trailer, generates 87 VdB at 25 feet. Since the closest residences would be over 20 times that distance from the nearest truck path, operational vibration from truck movements on the project site would not be expected to be felt by occupants. Therefore, no offsite vibration impacts are anticipated from the operation of delivery trucks.

Level of Significance Before Mitigation

Less than significant impact.

Level of Significance After Mitigation

Less than significant impact.

Operational Noise - Offsite Impacts

Impact NOI-3: Operational activities associated with the Proposed Project would not create any substantial offsite noise impacts.

Impact Analysis

The ongoing operation of the Proposed Project would result in a long-term increase in ambient noise levels. Potential noise impacts associated with the operations of the Proposed Project are a result of project-generated vehicular traffic on the project vicinity roadways. An analysis of potential offsite noise impacts associated with the ongoing occupancy of the Proposed Project follows.

Long-term noise generated from the project is related primarily to the increase in vehicle traffic on the surrounding roadways and stationary noise associated with operation of the project. Future peak-hour traffic noise levels were modeled using the Federal Highway Administration Noise Prediction Model (FHWA-RD-77-108), which calculates noise levels for varying traffic volumes,

mixes, and speeds. The results of the noise modeling are summarized below in Table 4.9-5. Data from this table is based on the Traffic Impact Analysis prepared for the project by Kunzman Associates on October 5, 2007 and Table 2 from the Traffic Analysis Summary, Appendix 14, of the City of San Bernardino General Plan.

Table 4.9-5: Projected Offsite Noise Impacts (dBA)

Roadway/Segment	Existing Traffic (ADT)	Lanes/ LOS	Project Traffic (%/ADT)	Existing Noise Levels @ 50 feet from centerline	Noise Level Change from Project Traffic	Significant Change?
Kendall Drive South of University Pkwy.	18,752	4/A	14%-860	68.0 dB	+0.2 dB	No
University Parkway West of Northpark Blvd.	28,400	4/C	54% - 3,316	69.8 dB	+0.4 dB	No
Northpark Boulevard North of University Pkwy.	8,342	4/A	60% - 3,684	64.4 dB	+1.6 dB	No
Little Mountain Drive North of Northpark Blvd.	4,000 (estim.)	2/A	20% - 1,228	61.3 dB	+1.1 dB	No
<p>Notes: Existing traffic data from 2002-2003 from General Plan Circulation Element. A 4-lane arterial roadway is expected to carry up to 40,000 vehicles per day. LOS = Level of Service based on Highway Capacity Manual methodology. Traffic volume for Little Mountain Drive estimated – data not available from General Plan or project TIA. LOS for Little Mountain Drive estimated based on 24-hour operation and may not reflect temporary congestion from CSUSB traffic. Project traffic ADTs estimated from trip distribution percentages in Kunzman Assoc. traffic study without flyover ramp connections (i.e., worst-case conditions). Source: Traffic data from General Plan Appendix 14, Traffic Analysis Summary, Table 2.</p>						

Table 4.9-5 estimates potential noise impacts off the UHSP project site. There are no improved roads on the project site. According to the Noise Impact Analysis, offsite noise generated from project-related traffic would increase by 0.2 to 1.6 db, depending on location. The threshold of significance for increases in noise is 3 dB (the noise level increase which is audible to most people), making impacts from the Proposed Project less than significant. Furthermore, walls or other attenuating improvements will be installed as needed based on the results of the Noise Impact Analysis to assure that outdoor noise will be below 60 dBA CNEL and interior noise levels will be below 45 dBA CNEL, meeting the City’s noise regulations.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Operational Noise - Onsite Impacts

Impact NOI-4: Project occupants may be exposed to noise levels that exceed normally acceptable standards.

Impact Analysis

The analysis in section NOI-3 concludes that offsite noise impacts from project-related traffic will be less than significant (i.e., max. 1.6 dB increase compared to significance threshold of 3 dB). The analysis also indicates that noise levels onsite will increase substantially as the UHSP project is developed. It is estimated that onsite noise will increase from 45.2 dB at present (vacant) to 63.1 dB CNEL (60 feet from centerline of Campus Parkway) once the project is built out and the extension of Campus Parkway through the project carries 6,140 ADT. The City's standard for outdoor living areas for sensitive receptors is 60 dBA CNEL. Walls are proposed on Campus Parkway, at a height of 8 feet. Walls will provide a minimum sound attenuation of 5 dBA, reducing the noise levels for residences adjacent to the roadway from 63.1 dB to 58.1 dB. This noise level is below the City's standard, and will assure that impacts associated with long term noise levels within the project are less than significant. Therefore, operational noise impacts to project residents will be less than significant as long as it complies with City noise standards.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

