4.7 NOISE

This section of the EA/EIR presents the results of an analysis of existing conditions, as well as future noise conditions following completion of the project. These findings also reflect the project traffic study prepared by Crain & Associates. Complete copies of the acoustic analysis data and traffic analysis prepared by Crain & Associates (April 2003) is contained within **Appendix 4.7** and **4.2** of this EA/EIR, respectively.

4.7.1 AFFECTED ENVIRONMENT

Characteristics of Noise

Noise is usually defined as unwanted sound. It is an undesirable by product of human society's normal day-to-day activities. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. The definition of noise as unwanted sound implies that it has an adverse effect on people and their environment.

Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). The human ear does not respond uniformly to sounds at all frequencies. People are less sensitive to very low and high frequencies than to medium frequencies that correspond with human speech. In response, the A-weighted noise level (or scale) has been developed. It corresponds better with peoples' subjective judgment of sound levels. This A-weighted sound level is called the "noise level" referenced in units of dB(A). Because noise is measured on a logarithmic scale, a doubling of sound energy results in a 3.0 dB(A) increase in noise levels. However, changes in a community noise level of less than 3.0 dB(A) are not typically noticed by the human ear. Changes from 3.0 to 5.0 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. A 5.0 dB(A) increase is readily noticeable, while the human ear perceives a 10.0 dB(A) increase in sound level to be a doubling of sound. Common noise levels associated with certain activities are shown on **Figure 4.7-1**.

Noise sources are classified in two forms: (1) point sources, such as stationary equipment; and (2) line sources, such as a roadway with a large number of point sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dB(A) for each doubling of distance from the source to the receptor at acoustically "hard" sites and 7.5 dB(A) at acoustically "soft" sites. For example, a 60.0 dB(A) noise level measured at 50 feet from a point source at an acoustically hard site would be 54.0 dB(A) at 100 feet from the source and 48.0 dB(A) at 200 feet from the source. Sound generated by a line

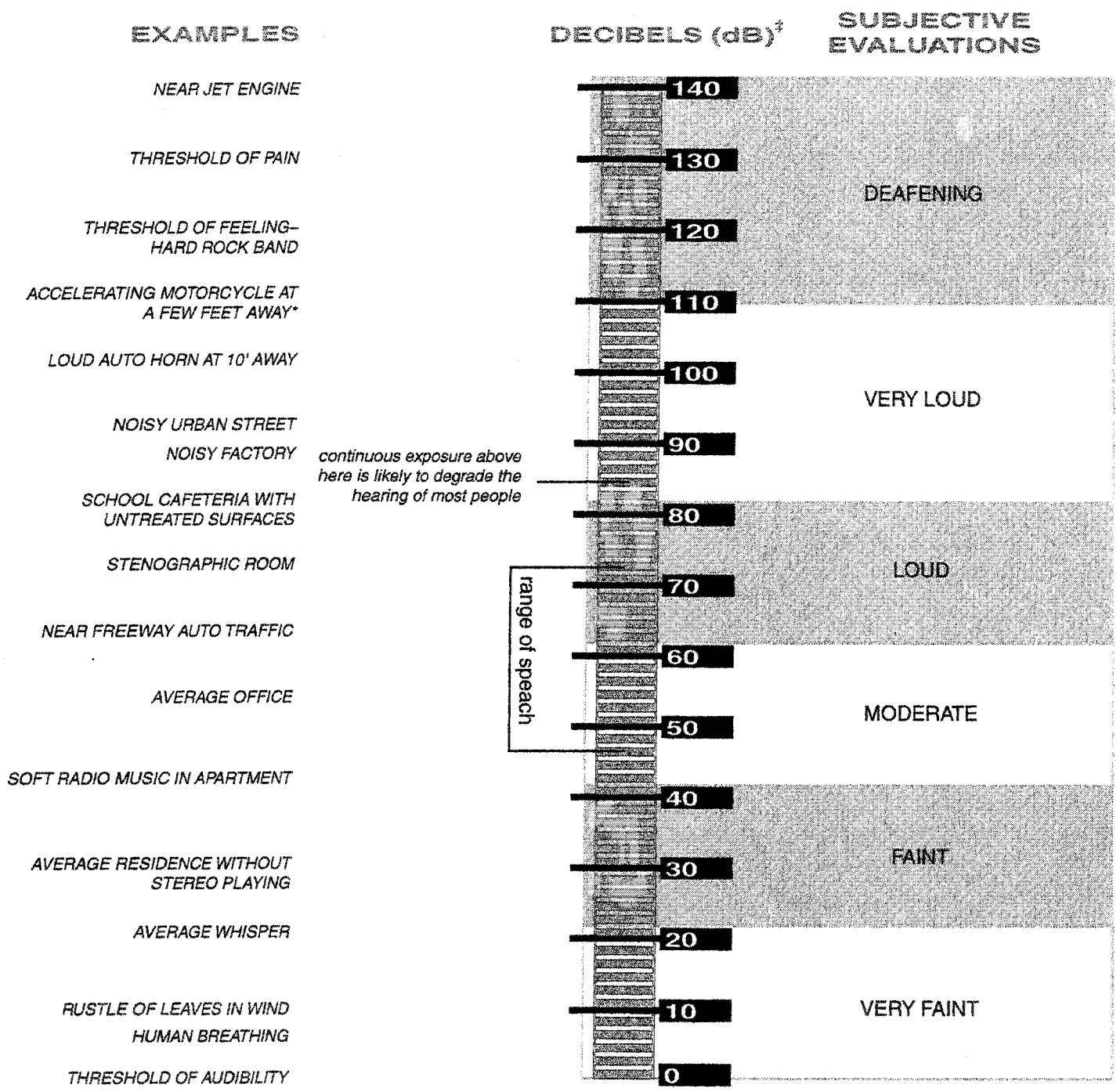
source typically attenuates at a rate of 3.0 dB(A) and 4.5 dB(A) per doubling of distance from the source to the receptor for hard and soft sites, respectively. Sound levels can also be attenuated by man-made or natural barriers, as illustrated in **Figure 4.7-2**. Solid walls, berms, or elevation differences typically reduce noise levels by 5.0 to 10.0 dB(A). The noise attenuation provided by typical structures in California is provided below in **Table 4.7-1**.

Table 4.7-1
Outside to Inside Noise Attenuation

	Noise Reduction - dB(A)	
Building Type	**Open Windows**	**Closed Windows**
Residences	12	25
Schools	12	25
Churches	20	30
Hospitals/Convalescent	17	25
Homes	17	25
Offices	20	30
Theaters	17	25
Hotels/Motels	17	25

Source: Highway Noise Fundamentals, *p. 117.*

When assessing community reaction to noise, there is an obvious need for a scale that averages varying noise exposures over time and quantifies the results in terms of a single number descriptor. Several scales have been developed which address community noise levels. Those that are applicable to this analysis are the Equivalent Noise Level (L_{eq}) and the Community Noise Equivalent Level (CNEL). L_{eq} is the average A-weighted sound level measured over a given time interval. L_{eq} can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods. CNEL is another average A-weighted sound level measured over a 24-hour period and is adjusted to account for some individual's increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained after adding 5.0 decibels to sound levels occurring during the evening from 7:00 PM to 10:00 PM, and 10.0 decibels to sound levels occurring during the nighttime from 10:00 PM to 7:00 AM. The 5.0 and 10.0 decibel "penalties" are applied to account for peoples' increased sensitivity during the evening and nighttime hours. For example, the logarithmic effect of these additions is that a 60.0 dB(A) 24-hour L_{eq} would result in a measurement of 66.7 dB(A) CNEL.

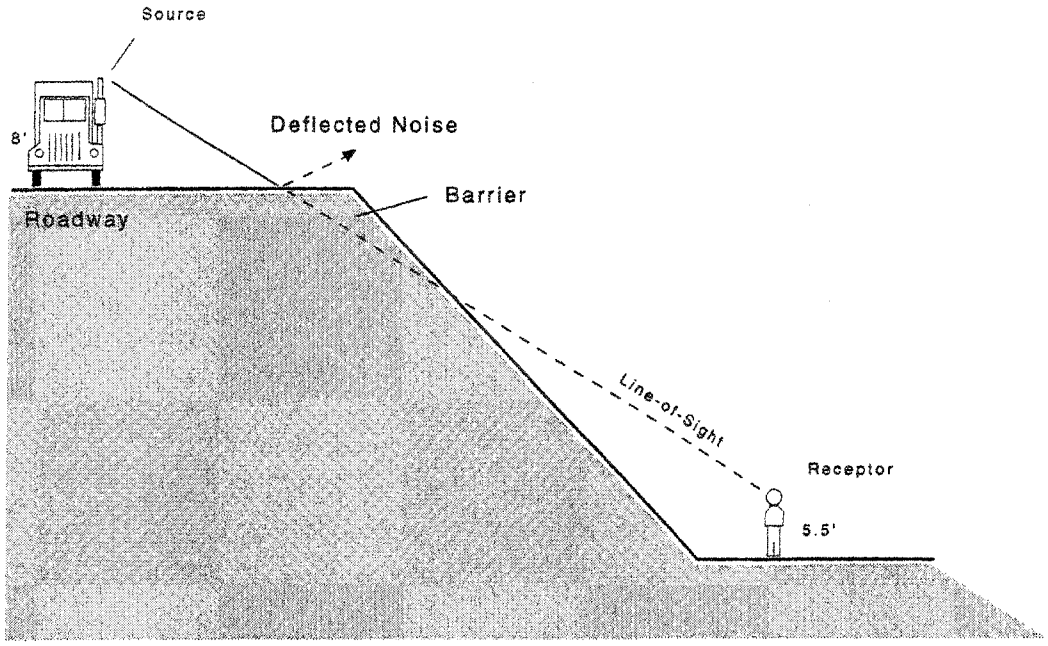


* NOTE: 50' from motorcycle equals noise at about 2000' from a four-engine jet aircraft.

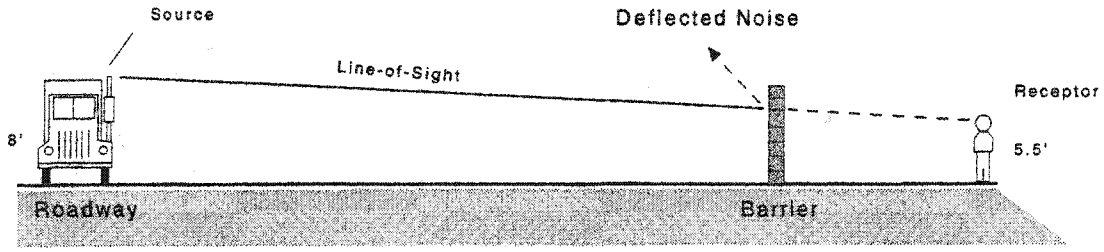
‡ NOTE: dB are "average" values as measured on the A–scale of a sound–level meter.

FIGURE **4.7-1**

Common Noise Levels



"Barrier Effect" Resulting from Differences in Elevation.



"Barrier Effect" Resulting from Typical Soundwall.

SOURCE: © Impact Sciences, September 1997.

FIGURE 4.7-2

Noise Attenuation by Barriers

600-01-04/03

Characteristics of Vibration

Vibration is a unique form of noise in that its energy is carried through structures and the earth, whereas noise is carried through the air. Thus, vibration is generally felt, rather than heard. Some vibration effects can be caused by noise; for example, the rattling of windows from truck pass-bys. This phenomenon is related to the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal, while RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

Analysis Methodology

Analysis of the existing and future noise environments presented in this EA/EIR section is based on technical reports, noise monitoring, and noise prediction modeling. Noise level monitoring was conducted by Impact Sciences, Inc. using a Brüel and Kjær Type 2237 controller Integrating Sound Level Meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Noise modeling procedures involved the calculation of existing and future vehicular noise levels along individual roadway segments in the vicinity of the project site. This was accomplished using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108). This model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site conditions. Average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation ("Caltrans"). Caltrans data shows that California automobile noise is 0.8 to 1.0 dB(A) louder than national levels and that medium and heavy truck noise is 0.3 to 3.0 dB(A) quieter than national levels. Traffic volumes utilized as data inputs to the noise prediction model were calculated based on information provided by Crain & Associates, the project traffic engineer, and are consistent with the analysis provided in **Section 4.2, Traffic/Circulation and Parking**, of this EA/EIR.

The primary concern regarding on-site noise is to determine whether on-site noise levels are compatible with proposed on-site land uses and land uses surrounding the site. In addition to evaluating on-site

noise, this section also evaluates off-site post-project noise conditions at locations along roadways that would accommodate project traffic. At these locations, noise levels were modeled both with and without the project's traffic volumes to determine whether or not project-related traffic would significantly increase noise levels at these locations.

Plans and Policies

In advance of presenting the existing and future noise environments and the thresholds of significance utilized in this document, plans and policies which pertain to the noise conditions affecting and affected by the proposed project are discussed below. These plans and policies include; (1) the State CEQA *Guidelines*, Appendix G, Significant Effects, (2) the County of Los Angeles Noise Ordinance, and (3) the State of California, Department of Health Services, Environmental Health Division *Guidelines for Noise and Land Use Compatibility*.

County of Los Angeles Noise Ordinance *(For Point and Stationary Source Noise)*

The County of Los Angeles has adopted a Noise Ordinance (No. 11743), which identifies exterior noise standards for stationary and point noise sources, specific noise restrictions, exemptions, and variances for exterior point, or stationary, noise sources. Several of these standards are applicable to the project and are discussed below.

The County Noise Ordinance states that exterior noise levels caused by stationary or point noise sources shall not exceed the levels identified below in **Table 4.7-2**, or the ambient noise level,[1] whichever is greater, when the ambient noise level is determined without the noise source operating. The Noise Ordinance also states that interior noise levels resulting from outside point or stationary sources within multi-family residential units shall not exceed 45.0 dB(A) L_{eq} between 7:00 AM and 10:00 PM, and 40.0 dB(A) L_{eq} between 10:00 PM and 7:00 AM.

1 Ambient noise level is defined as the existing background noise level at the time of measurement or prediction.

Table 4.7-2
County of Los Angeles Exterior Noise Standards for Stationary and Point Noise Sources

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level dB(A) L_{50} [1]
I	Noise Sensitive Area [2]	Anytime	45
II	Residential Properties	10:00 PM to 7:00 AM 7:00 AM to 10:00 PM	45 50
III	Commercial Properties	10:00 PM to 7:00 AM 7:00 AM to 10:00 PM	55 60
IV	Industrial Properties	Anytime	70

Source: County of Los Angeles Ordinance No. 11743, §12.08.390.

[1] ***Standard No. 1** shall be the exterior noise level, which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable noise level; or, if the ambient L_{50} exceeds the forgoing level, then the ambient L_{50} becomes the exterior noise level for Standard No. 1.*
***Standard No. 2** shall be the exterior noise level, which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable noise level from Standard 1 plus 5.0 dB(A); or, if the ambient L_{25} exceeds the forgoing level, then the ambient L_{25} becomes the exterior noise level for Standard No. 2.*
***Standard No. 3** shall be the exterior noise level, which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable noise level from Standard 1 plus 10.0 dB(A); or, if the ambient $L_{8.3}$ exceeds the forgoing level, then the ambient $L_{8.3}$ becomes the exterior noise level for Standard No. 3.*
***Standard No. 4** shall be the exterior noise level, which may not be exceeded for a cumulative period of more than one minute in any hour. Standard No. 4 shall be the applicable noise level from Standard 1 plus 15.0 dB(A); or, if the ambient $L_{1.7}$ exceeds the forgoing level, then the ambient $L_{1.7}$ becomes the exterior noise level for Standard No. 4.*
***Standard No. 4** shall be the exterior noise level, which may not be exceeded for any period of time. Standard No. 4 shall be the applicable noise level from Standard 1 plus 20.0 dB(A); or, if the ambient L_0 exceeds the forgoing level, then the ambient L_0 becomes the exterior noise level for Standard No. 4.*

[2] *Not defined in the County* Noise Ordinance. *To be designated by the County Health Officer.*

The County Noise Ordinance identifies specific restrictions regarding construction noise. The operation of equipment used in construction, drilling, repair, alteration or demolition work is prohibited between weekday hours of 7:00 PM to 7:00 AM and anytime on Sundays or legal holidays if such noise would create a noise disturbance across a residential or commercial real-property line.[2] The Noise Ordinance further states that the contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in **Table 4.7-3, County of Los Angeles Construction Equipment Noise Restrictions**. All mobile and stationary internal-combustion-powered equipment and machinery is also required to be equipped with suitable exhaust and air-intake silencers in proper working order.

2 County of Los Angeles Ordinance No. 11743, §12.08.440. Noise disturbance is not defined in the noise ordinance. The County Health Officer has the authority to define and determine the extent of a noise disturbance on a case-by-case basis.

Table 4.7-3
County of Los Angeles Construction Equipment Noise Restrictions

Residential Structures	Single Family Residential	Multi-Family Residential	Commercial[1]
Mobile Equipment: Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:			
Daily, except Sundays and legal holidays, 7:00 AM to 8:00 PM	75 dB(A) L_{eq}	80 dB(A) L_{eq}	85 dB(A) L_{eq}
Daily, 8:00 PM to 7:00 AM and all day Sunday and legal holidays	60 dB(A) L_{eq}	64 dB(A) L_{eq}	70 dB(A) L_{eq}
Stationary Equipment: Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment:			
Daily, except Sundays and legal holidays, 7:00 AM to 8:00 PM	60 dB(A) L_{eq}	65 dB(A) L_{eq}	70 dB(A) L_{eq}
Daily, 8:00 PM to 7:00 AM and all day Sunday and legal holidays	50 dB(A) L_{eq}	55 dB(A) L_{eq}	60 dB(A) L_{eq}
Business Structures			
		All Structures	
Mobile Equipment: Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:			
Daily, including Sunday and legal holidays, all hours		85 dB(A) L_{eq}	

Source: County of Los Angeles Ordinance No. 11743, §12.08.440.
[1] *Refers to residential structures within a commercial area. This standard does not apply to commercial structures.*

The County exempts all transportation vehicles (with a few exceptions) that operate in a legal manner within the public right-of-way, railway, or air space, or on private property, from the standards of the Noise Ordinance. The County has no adopted ordinance regulating individual motor vehicle noise levels. These are regulated by the state.

California Department of Health Services (For Mobile Source Noise)

The State of California, Department of Health Services, Environmental Health Division has published recommended guidelines for mobile source noise and land use compatibility. Each jurisdiction is required to consider these guidelines when developing its general plan noise element and determining the acceptable noise levels within its community. The County of Los Angeles defers to these guidelines when assessing a land use's compatibility with motor vehicle noise sources. These guidelines are illustrated in **Figure 4.7-3**. In addition, interior noise levels of 45.0 dB(A) CNEL are recommended for residential uses.

Based on these guidelines, Los Angeles County typically considers an exterior noise level of 60.0 dB(A) CNEL to be an acceptable level for single family, duplex, and mobile homes involving normal, conventional construction, without any special noise insulation requirements (normally acceptable noise levels). Exterior noise levels up to 65.0 dB(A) CNEL are typically considered acceptable for multi-family units and transient lodging without any special noise insulation requirements. Between these values and 70.0 dB(A) CNEL, exterior noise levels for both single family and multi-family units are typically considered acceptable only if the buildings are conditioned to include noise insulation features (conditionally acceptable noise levels). Conventional construction of the buildings with the inclusion of fresh air supply systems or air conditioning will normally ensure that interior noise levels are acceptable (reference **Table 4.7-1** for noise reduction provided by conventional construction techniques). An exterior noise level of 70.0 dB(A) CNEL is typically the dividing line between an acceptable and unacceptable exterior noise environment for all noise sensitive uses, including schools, libraries, churches, hospitals, day care centers, and nursing homes of conventional construction. Noise levels below 75.0 dB(A) CNEL are typically acceptable for office and commercial buildings, while levels up to 75.0 dB(A) CNEL are typically acceptable for industrial uses.

Existing Noise Environment

The project site is located in an urban environment and is exposed to a variety of noises typical of such a setting. Such noise includes heavy vehicle traffic, truck delivery traffic, parking lot and structure noise, car alarms, mechanical equipment and people. In order to characterize the ambient noise environment in the study area, both noise monitoring and noise prediction modeling was conducted. Monitoring was conducted at locations surrounding the Hall of Justice site to get a representation of on- and off-site ambient hourly noise levels. The existing ambient noise environment for roadways was determined by calculating noise levels from vehicular traffic along segments of the studied circulation network. Although no sensitive receptors are located along any of the studied roadways, the evaluated roadway segments were those that have been identified as being potentially affected by project related traffic.

Noise monitoring was conducted at selected locations surrounding the Hall of Justice during the late morning and afternoon hours (10:00 AM to 3:00 PM) of April 9, 2003. Noise readings were taken in L_{eq} 1-hour periods with "A" frequency fast-time weighting. No unique or special events, such as high-winds or construction activities, were noted during the monitoring periods. **Figure 4.7-4** illustrates the location of noise monitoring sites, while **Table 4.7-4**, provides the statistical data associated each monitoring period. As shown, noise levels ranged from a low of 72.7 to a high of 73.6 dB(A) L_{eq}. These monitored levels are typical and consistent with the urban nature of the project area.

Table 4.7-4
Existing On-Site Noise Levels –Hour L_{eq}[1]

Location	Time	L_{eq}
1	10:10 AM – 11:10 AM	73.6
2	11:30 AM – 12:30 PM	72.9
3	12:45 PM – 1:45 PM	72.7
4	2:00 PM – 3:00 PM	73.0

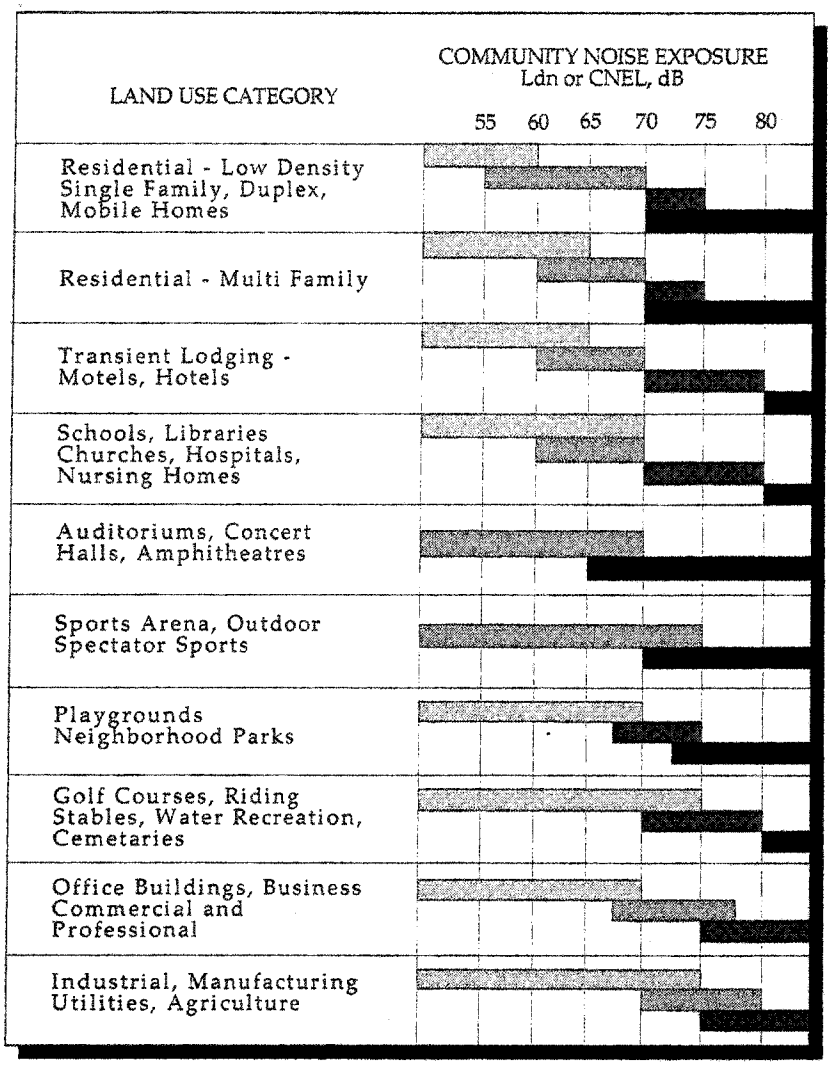
[1] *Impact Sciences, April 2003.*

The noise modeling effort was accomplished using the modified version of the Federal Highway Administration Highway Noise Prediction Model (Stamina 2.0). This model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. Average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The results of the noise modeling are provided in **Table 4.7-5**. As shown, roadway noise levels range from a low of 68.7 to a high of 73.7 dB(A). These modeled results are consistent with the results of the noise monitoring.

Table 4.7-5
Existing Modeled Roadway Noise Levels

ROADWAY SEGMENT	Noise Levels in dB(A) Peak Hour L_{eq}	CNEL
North Broadway		
Northeast of 101	71.2	71.7
Between Aliso Street and Temple Street	73.1	73.7
101 Freeway		
Between Broadway Street and Los Angeles Street	72.1	72.6
Spring Street		
Northeast of 101	68.6	69.2
Between Aliso Street and Temple Street	70.5	71.0
Aliso Street		
Between Broadway Street and Spring Street	68.2	68.7
Temple Street		
Between Broadway Street and Spring Street	69.9	70.5

Source: Impact Sciences, Inc, Model results are contained in ***Appendix 4.7.***



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 systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE

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

CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

SOURCE: California Department of Health, Office of Noise Control, Guidelines for the Preparation and Content of Noise Elements of The General Plan, February 1976.

FIGURE **4.7-3**

Land Use Compatibility Guidelines for Noise

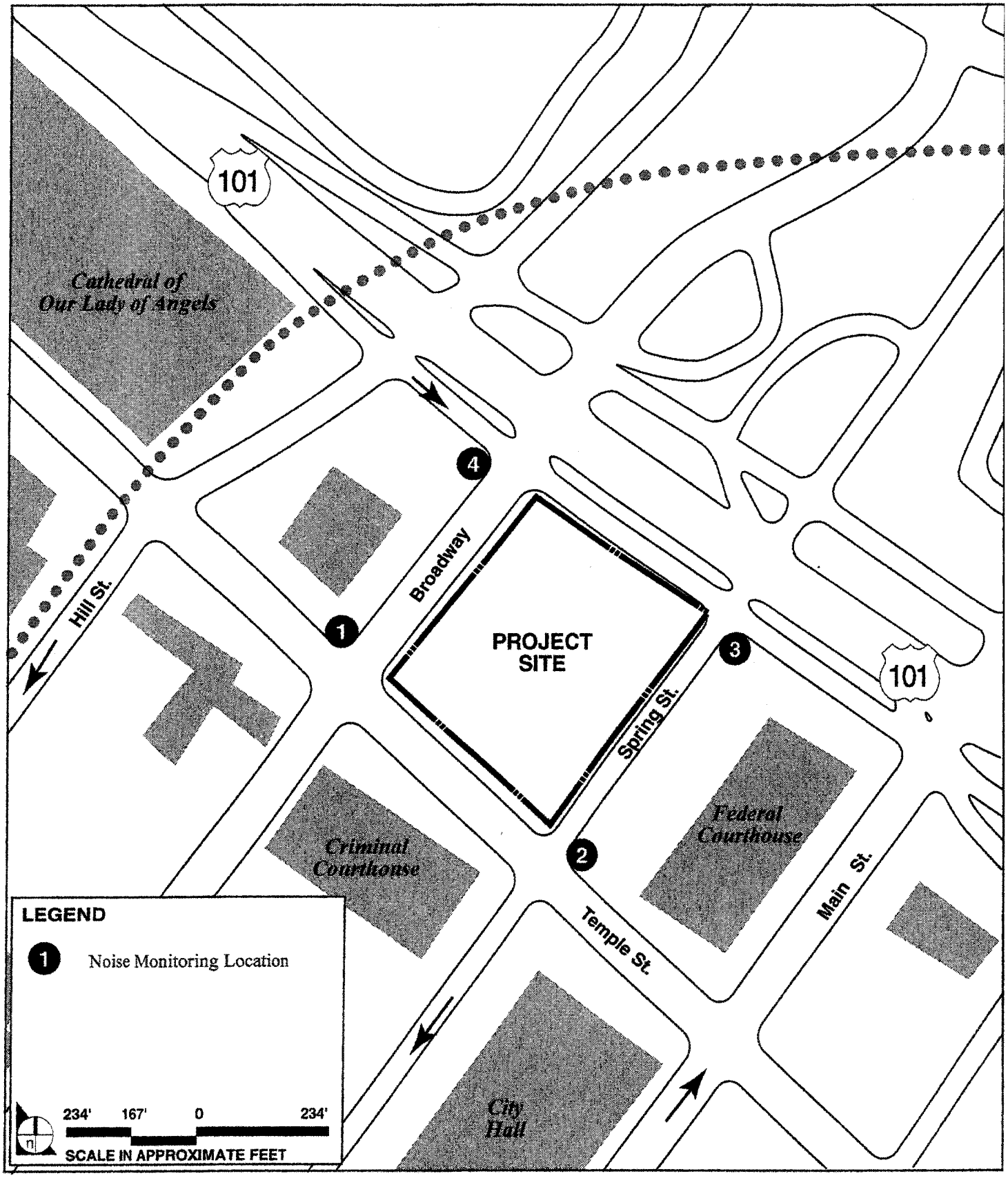


FIGURE **4.7-4**

Noise Monitoring Locations

600-01•04/03

4.7.2 THRESHOLDS OF SIGNIFICANCE

Construction Thresholds

As discussed earlier, the County Noise Ordinance identifies specific restrictions regarding construction noise. The operation of equipment used in construction, drilling, repair, alteration or demolition work is prohibited between weekday hours of 7:00 PM to 7:00 AM and anytime on Saturdays and Sundays or legal holidays if such noise would create a noise disturbance across a residential or commercial real-property line.[3] The Noise Ordinance further states that the contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in **Table 4.7-6**. It should be noted that since the Hall of Justice project is commercial in nature, the residential restrictions have been omitted, as they are not applicable. All mobile and stationary internal-combustion-powered equipment and machinery is also required to be equipped with suitable exhaust and air-intake silencers in proper working order.

Table 4.7-6
County of Los Angeles Construction Equipment Noise Restrictions

Business Structures	All Structures
Mobile Equipment: Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:	
Daily, including Sunday and legal holidays, all hours	85 dB(A) L_{eq}

Source: County of Los Angeles Ordinance No. 11743, §12.08.440.

Based on this information, the proposed project would result in significant noise impacts from construction if:

- Construction activities would exceed 85.0 dB(A) L_{eq} during the day, including Sundays and legal holidays.

Operational Thresholds

The proposed project would result in significant on-site mobile source noise impacts if on-site exterior locations are exposed to noise levels greater than the normally acceptable *Land Use Compatibility*

[3] County of Los Angeles Ordinance No. 11743, §12.08.440. Noise disturbance is not defined in the noise ordinance. The County Health Officer has the authority to define and determine the extent of a noise disturbance on a case-by-case basis.

Guidelines utilized by the County (i.e., 60.0 dB(A) CNEL for single family, 65.0 dB(A) CNEL for multi-family, and 70.0 dB(A) CNEL for schools, parks, and commercial uses as identified in **Figure 4.7-3**). Also, if components of the proposed project were subject to point source noise levels originating on or off the project site, which are above County Noise Ordinance standards identified in **Tables 4.7-7**, a significant on-site noise impact would occur.

Table 4.7-7
County of Los Angeles Exterior Noise Standards for Stationary and Point Noise Sources

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level dB(A) L_{eq} [1]
III	Commercial Properties	10:00 PM to 7:00 AM	55
		7:00 AM to 10:00 PM	60

Source: County of Los Angeles Ordinance No. 11743, §12.08.390.
[1] ***Standard No. 3** shall be the exterior noise level, which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable noise level from Standard 1 plus 10.0 dB(A); or, if the ambient $L_{8.3}$ exceeds the forgoing level, then the ambient $L_{8.3}$ becomes the exterior noise level for Standard No. 3.*

The significance of off-site noise impacts is based on both the *Land Use Compatibility Guidelines* identified in **Figure 4.7-3**, and typical community responses to changes in noise levels. Changes in a noise level of less than 3.0 dB(A) are not typically noticed by the human ear. Changes from 3.0 to 5.0 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. A 5.0 dB(A) increase is readily noticeable. Based on this information, significant off-site noise impacts would occur when:

1. an increase of 5.0 dB(A) or greater in noise level occurs from project-related activities if levels remain within the same land use compatibility classification (e.g., noise levels remain within the normally acceptable range); or
2. an increase of 3.0 dB(A) or greater in noise level occurs from project-related activities which results in a change in land use compatibility classification (e.g., noise levels change from normally acceptable to conditionally acceptable).

Vibration

The County of Los Angeles and City of Los Angeles do not have standards or significance threshold for determining vibration impacts. Reaction to vibration would vary from person to person. Peak velocities of 0.01 inches per second RMS are barely noticeable to persons, while velocities of 0.1 inches per second RMS are troublesome to persons. Architectural damage to structures can begin occurring when peak

velocities reach 0.4 inches per second RMS. The point at which damage can occur is utilized as the significance threshold within this EA/EIR.

4.7.3 POTENTIAL IMPACTS OF ALTERNATIVES

Alternative 1 – No Project Alternative

Under this alternative, the Hall of Justice building would remain vacant and would not result in any construction noise. Additionally, there would be no net change in ambient noise levels with regards to operational noise levels. Impacts under this alternative would be less than significant.

Alternative 2 – Repair and Reuse Alternative (Proposed Alternative)

Construction

Construction activities associated with Alternative 2 would include repairing the Hall of Justice through seismically retrofitting the building into a usable office building while preserving and restoring the primary historic features. Construction activities would be divided into three main phases: (1) exterior work, (2) interior work, as well as (3) construction of an on-site parking structure. The exterior surfaces of the Hall of Justice will be cleaned. Pre-washing would be utilized at areas of distinct staining, while general cleaning would follow, using a restoration-type cleaner. Rinsing would also occur to ensure no cleaner remains on exterior surfaces. Additionally, any alterations added to the exterior skin of the Hall of Justice, such as air conditioning units, security grilles, pipes and conduit, would be removed with any attachment holes patched. Windows would have lead-based paint abated or encapsulated with any necessary repairs made. All window frame exteriors and other exterior metal would be painted. Masonry would be repainted as required.

With regards to interior construction work, some existing building materials would be removed. This also includes two existing jail floors, as well as materials deemed unsuitable, unusable or unsafe to remain in the building.

In addition, and perhaps the most noise intensive aspect of the planned construction activities is the construction of the on-site parking structure. Grading for the parking structure area would include the removal of earth materials down to 48 feet below the existing ground surface. The amount of earth materials anticipated to be exported from the Hall of Justice site would be approximately 60,000 cubic yards. The haul route to export materials would be developed in cooperation with City and County

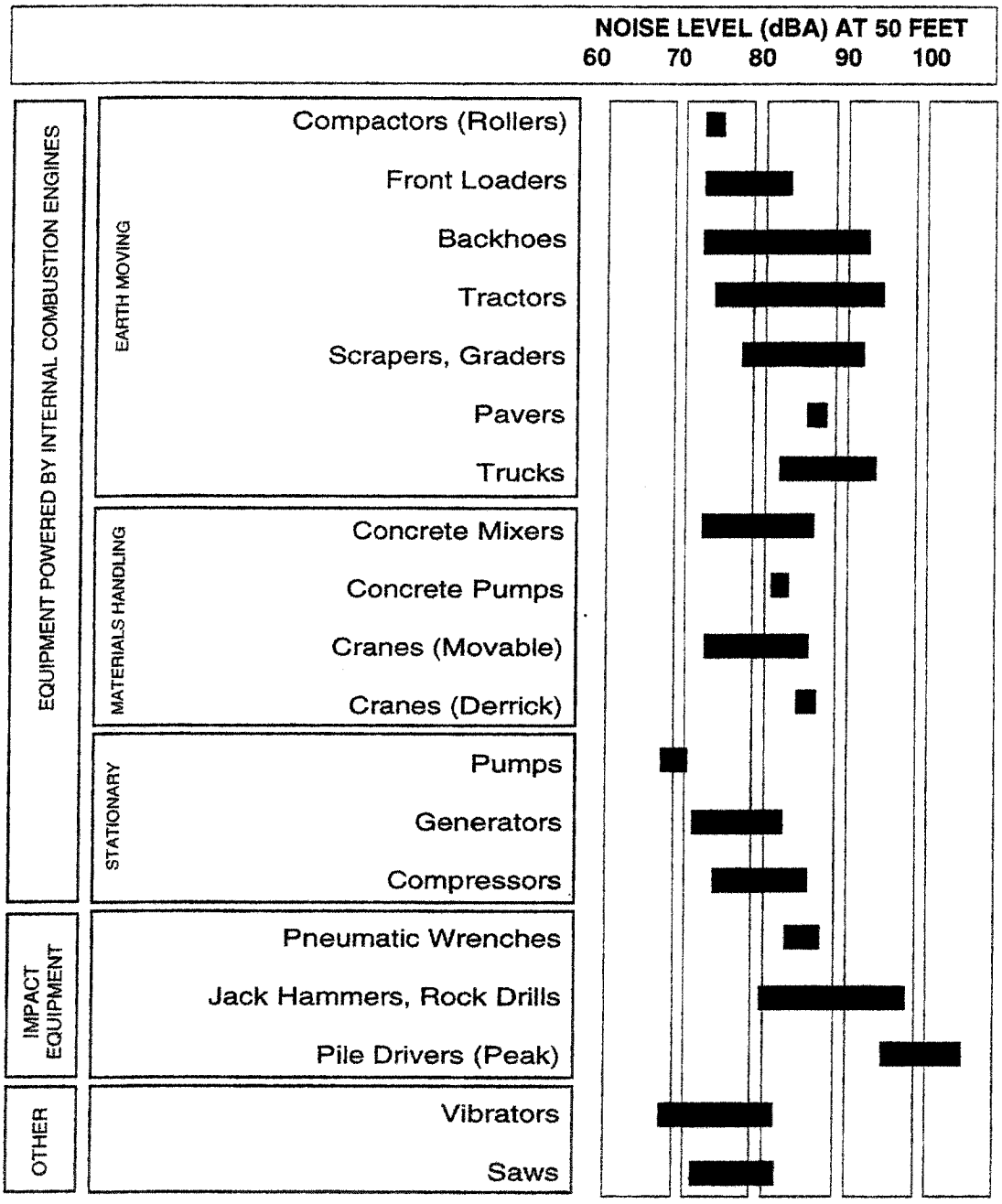
personnel, and is anticipated to run directly to the 101 Freeway. Approximately 65 truck trips per day are anticipated over a three-month period to export these materials. Grading would involve the use of standard earth moving equipment such as loaders, dozers and other related equipment. The work would be contained on site over the duration of the construction activities to prevent disruption to the surrounding land uses.

Excavation, grading, and construction activities associated with development of the proposed project would involve the use of heavy equipment such as tractors, loaders, concrete mixers, cranes, etc. Smaller equipment such as jackhammers, pneumatic tools, saws, and hammers would also be used throughout the site during the construction phase. This equipment would generate both steady state and episodic noise that would be heard both on and off the project site. Trucks would be used to deliver equipment and building materials, and to haul away waste materials.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. These data are presented in **Figure 4.7-5**. As shown, noise levels generated by heavy equipment can range from approximately 68.0 dB(A) to noise levels in excess of 100.0 dB(A) when measured at 50 feet. Because loud construction equipment, such as tractors, backhoes, trucks, jackhammers, etc., would be utilized during project construction, noise levels over 95.0 dB(A) and possibly over 100.0 dB(A) are anticipated within 50 feet of operation.

As previously stated, the County of Los Angeles has designated a maximum allowable noise level of 85.0 dB(A) L_{eq} from construction activities for non-residential structures not located in a residential zone. Operations in such areas that exceed 85.0 dB(A) are not allowed by the County unless use of all feasible noise reduction devices and/or techniques cannot satisfactorily attenuate noise levels.

Construction activities associated with this alternative would occur approximately 100 feet from existing commercial uses. Employment of all feasible noise attenuation devices and techniques may be capable of reducing noise levels for stationary equipment to some degree, but trucks and other mobile equipment cannot be surrounded by noise barriers at all locations. Given these factors, periodic noise levels of 95.0 dB(A) should be anticipated at 50 feet from various types of mobile and stationary construction equipment. Noise levels would diminish with distance from the construction site at a rate of approximately 6.0 dB(A) per doubling of distance. Thus, as the nearest uses are within 100 feet of the loudest construction equipment, periodic noise levels of up to 90.0 dB(A) could occur on adjacent off-site properties. Periodic construction noise levels would be noticeable and would constitute a temporary significant noise impact at adjacent off-site commercial uses.



NOTE: Based on limited available data samples.

SOURCE: United States Environmental Protection Agency, 1971, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," NTID 300-1

FIGURE **4.7-5**

Noise Levels of Typical Construction Equipment

It should be noted that this is a short-term impact that would no longer remain significant once all construction activities have been completed. While this short-term impact is considered significant under CEQA, it is not considered a significant regional impact under NEPA. According to NEPA Law and Litigation §8:49, temporary environmental effects, including disruption due to construction activities, are not significant effects.

Besides equipment noise associated with construction activities, construction traffic would generate noise along access routes to the proposed development areas from the movement of equipment and workers onto the sites. The major pieces of heavy equipment would be moved onto the development once during each phase and would have an insignificant short-term effect on noise levels. In addition, daily transportation is expected to cause increases in noise levels along project roadways. However, given that this traffic would not be a substantial percentage of daily volumes in the area and would not increase levels by more than 3.0 dB(A), potential impacts are considered to be less than significant.

Vibration

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment. Operation of construction equipment generates vibrations, which spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies; depending on soil type, ground strata, and receptor building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels. Ground vibrations from construction activities rarely reach the levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site. **Table 4.7-8, Vibration Levels for Construction Equipment,** which follows, lists vibration source levels for construction equipment.

Table 4.7-8
Vibration Levels for Construction Equipment

Equipment		Approximate Velocity Level at 25 ft, VdB	Approximate RMS[a] Velocity at 25 ft, Inch/Second
Pile Driver (impact)	upper range	112	0.37950
	typical	104	0.16100
Pile Driver (sonic)	upper range	105	0.18350
	typical	93	0.04250
Clam shovel drop (slurry wall)		94	0.05050
Hydromill (slurry wall)	in soil	66	0.00200
	in rock	75	0.00430
Large bulldozer		87	0.02225
Caisson drilling		87	0.02225
Loaded trucks		86	0.01900
Jackhammer		79	0.00875
Small bulldozer		58	0.00075

[a] *RMS velocity calculated from vibration level (VdB) using the reference of 1 micro-inch/second.*
Source: Federal Railroad Administration, 1998.

The primary vibration sources associated with the development of the project would include the use of bulldozers and loaded trucks. No pile drivers would be used for the project. As indicated in **Table 4.7-8**, the equipment proposed to be used on site is capable of producing RMS velocity levels at 25 feet between 0.008 to 0.05 inches per second.[4] These vibration levels are below those considered to be troublesome to people (0.1) and below the level where structural damage occurs (0.4). Vibration impacts are therefore considered to be less than significant.

Operational

Vehicular Noise

Vehicular noise can potentially to affect the project site, as well as uses located along the studied roadway system. In order to quantify the difference in roadway noise levels under the future conditions noise modeling was utilized. Specifically, forecasts were made for a future without the project and future with the project conditions. The results of these two modeling scenarios were then compared to determine the net difference roadway noise levels. This used the modified Federal Highway Administration Highway

4 Federal Railroad Administration, *High Speed Transportation Noise and Vibration Impact Assessment*, 1998.

Noise Prediction Model (Stamina 2.0), which calculates the average noise level at specific locations based on traffic volumes, average speeds, and roadway geometry. Average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The results of the future roadway noise modeling are provided below in **Table 4.7-9**. As shown, the largest increase in roadway noise levels when comparing the future without the project and future with project was 0.1 dB(A). As stated earlier, noise increases less than 3.0 dB(A) are not noticeable by the human ear. As a result, the vehicular noise level increase attributable to this alternative would not be noticeable. Consequently, vehicular noise impacts would be less than significant.

Table 4.7-9
Future Roadway Noise Levels

Roadway Segment	Noise Levels in dB(A)[1] Future without Project	Future with Project	Increase in Noise Levels
North Broadway			
Northeast of 101	71.80	71.82	0.02
Between Aliso Street and Temple Street	73.70	73.80	0.10
101 Freeway			
Between Broadway Street and Los Angeles Street	72.70	72.70	0.00
Spring Street			
Northeast of 101	69.20	69.30	0.10
Between Aliso Street and Temple Street	71.10	71.14	0.04
Aliso Street			
Between Broadway Street and Spring Street	68.80	68.84	0.04
Temple Street			
Between Broadway Street and Spring Street	70.60	70.63	0.03

Source: Impact Sciences, Inc., Model results are contained in ***Appendix 4.7.***
[1] *numbers may not add up due to rounding.*

Parking Structure Noise

Under this alternative, a new nine-level parking structure with up to 4.5 levels of parking above grade would be constructed adjacent to the northeast wall of the Hall of Justice building. Typical noises occurring in a parking structure would include doors shutting, engines starting, car acceleration, parking lot cleaning, and other maintenance activities. Other noises can include tire squeal noise (depending on the material used for ramps and parking surfaces), and car alarms. These noises would occur intermittently (and, in the cases of doors shutting and engines starting, for only one to several seconds).

These sounds are no different than those noises already occurring on the streets, driveways, and parking lots that exist in the downtown civic center area.

Surveys of individual noise events at parking structures indicate that doors slamming and engine start-ups generate between 60.0 and 70.0 dB(A) when referenced at 50 feet from the source. Cars passing by generate between 55.0 and 70.0 dB(A) of instantaneous noise at 50 feet. Automobile alarms, which tend to sound from a few seconds to several minutes, depending on the make, are capable of generating noise levels of 88.0 to 90.0 dB(A) referenced at 50 feet. These noise levels would also attenuate at a rate of approximately 6.0 dB(A)per doubling of distance. Additionally, this noise level attenuation rate does not account for additional attenuation from the parking structure itself. It should be noted that this noise level would only occur for a few minutes at a time when the parking garage is in use. The impact of parking structure noises on surrounding uses would be perceived differently depending on the time of day. Parking structure usage would be at its greatest between the hours of 7:00 AM and 5:00 PM. Based on the thresholds presented earlier in this section, noise levels associated with on site activities would not result in a significant impact.

Mechanical and Stationary Noise

Occasional operational noise would result from landscape, mechanical and disposal services. Noise generated by landscape maintenance equipment (lawn mowers and leaf blowers) typically range between 80.0 dB(A) and 110.0 dB(A) at 50 feet from the noise source. Noise associated with the operation of mechanical equipment, such as air conditioning units, would be another source of noise resulting during operation of the proposed project. Stationary noise from elevators, air conditioning, and other building equipment would range from 45.0 dB(A) to 65.0 dB(A) 50 feet from the noise source. Finally, solid waste disposal associated with the handling of the trash dumpsters and the removal of refuse by trash trucks would also occur during operational hours. Such activities currently occur in the surrounding vicinity and the proposed project would not result in any noticeable change with regard to mechanical and stationary noise sources given the heavily urbanized environment of the downtown civic center.

Alternative 3 – Adaptive Reuse of Existing Building to Secretary of Interior Standards

Construction

Alternative 3 would include the repair of the interior of the Hall of Justice building to provide for 199,132 square feet of useable "Class A" office space, the development of a new multi-level garage with 1,000

parking spaces, landscape and hardscape improvements, architectural and security lighting, and necessary upgrades to utility systems.

Under this alternative, construction noise and vibration impacts would be the same as described under Alternative 2. Therefore, short-term construction noise impacts would be significant, while vibration would not be significant. It should be noted that this is a short-term impact that would no longer remain significant once all construction activities have been completed. While this short-term impact is considered significant under CEQA, it is not considered a significant regional impact under NEPA. According to NEPA Law and Litigation §8:49, temporary environmental effects, including disruption due to construction activities, are not significant effects.

Operational

Vehicular Noise

The Hall of Justice currently occupies the project site. In 1994 there was approximately 537,585 gross square feet with 1,343 employees and 527 inmates on 15 floors. After renovation under Alternative 3, the Hall of Justice would be 537,585 gross square feet with 199,132 usable square feet. Under Alternative 3, the Hall of Justice would be occupied with approximately the same amount of full-time employees (1,350), as under the 1994 conditions. Because Alternative 3 would be occupied with the same amount of employees this alternative would not result in a net increase in daily traffic. More specifically, as no net daily traffic would be generated under this alternative, there would be no net change under the future project scenario when compared to the future without project scenario. Therefore, under this alternative, primary effects would be less than significant.

Parking Structure Noise

Under this alternative, a new nine-level parking structure with up to 4.5 levels of parking above grade would be constructed adjacent to the northeast wall of the Hall of Justice building. Since the parking structure planned under this alternative would be identical in design as described under Alternative 2, noise levels associated with the use of the structure would be identical. Based on the thresholds presented earlier in this section, noise levels associated with the parking structure would not result in a significant impact.

Mechanical and Stationary Noise

Under this alternative, operational noise would result from landscape, mechanical and disposal services. As these noise sources would be same as those described under Alternative 2, noise levels would be identical. Based on the thresholds presented earlier in this section, noise levels associated with mechanical and stationary noise sources would not result in a significant impact.

4.7.4 MITIGATION MEASURES (ALTERNATIVE 2 AND 3)

In order to ensure that construction noise is reduced to the greatest extent feasible, the following measures are required for both Alternative 2 and 3:

N-1 All construction equipment, fixed or mobile, that is utilized on the site for more than two working days shall be in proper operating condition and fitted with standard factory silencing features. To ensure that mobile and stationary equipment is properly maintained and meets all federal, state, and local standards, the applicant shall maintain an equipment log. The log shall document the condition of equipment relative to factory specifications and identify the measures taken to ensure that all construction equipment is in proper tune and fitted with an adequate muffling device. The log shall be submitted to the Department of Public Works for review and approval on a quarterly basis. A County Building Official or a designee should spot check to ensure compliance.

N-2 The applicant shall provide adjacent owners with a construction schedule 10-days in advance of activities. The applicant shall submit a copy of the scheduled and mailing list to the appropriate County regulatory agency prior to the initiation of construction activities. A County Building Official or a designee should spot check and respond to complaints.

N-3 All construction activity, including grading, transport of material or equipment and warming-up of equipment, shall be limited to between the hours of 7 AM to 7 PM, Monday through Friday, and should not occur during Saturday and Sunday unless approved by the County. Non-noise generating exterior construction activities such as interior work shall not be subject to these restrictions. The work schedule shall be posted at the construction site and modified as necessary to reflect any approved deviations.

N-4 The project applicant shall post a notice at the construction site and along the proposed truck haul route. The notice shall contain information on the type of project, anticipated duration of construction activity, and provide a phone number where people can register questions and complaints. The applicant shall keep record of all complaints and take appropriate action to minimize noise generated by the offending activity where feasible. A monthly log of noise complaints shall be maintained by the applicant and submitted to the County.

4.7.5 ADVERSE IMPACTS AFTER MITIGATION (ALTERNATIVE 2 AND 3)

Even with the implementation of all feasible construction mitigation measures, short-term construction noise impacts would be significant and unavoidable under CEQA regulations. However, while this short-term impact is considered significant under CEQA, it is not considered a significant impact under NEPA. According to NEPA Law and Litigation §8:49, temporary environmental effects, including disruption due to construction activities, are not significant effects.