1. INTRODUCTION

This section of the EIR addresses the potential noise impacts that could result from construction and occupancy of the proposed project. The analytical methodology for this section includes noise monitoring and noise-prediction modeling to document existing noise levels and project future noise levels. Noise monitoring was conducted using a Brüel and Kjær Type 2237 controller Integrating Sound Level Meter. Noise prediction modeling conducted in this analysis utilized the Federal Highway Administration Highway (FHWA) Noise Prediction Model (FHWA-RD-77-108) and relied upon traffic data contained in the project study, which can be found in **Appendix IV.F**. Modeling referenced in this section is provided in **Appendix IV.H**.

2. EXISTING CONDITIONS

a. Introduction to Noise

Noise is usually defined as unwanted sound. It is an undesirable by-product of 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; for example, it is less sensitive to low and high frequencies than to medium frequencies that more closely correspond with human speech. In response to the sensitivity of the human ear to different frequencies, the A-weighted noise level (or scale) has been developed, which corresponds better with people's subjective judgment of sound levels. This A-weighted sound level, referenced in units of dB(A), is measured on a logarithmic scale, such that a doubling of sound energy results in a 3.0 dB(A) increase in noise level. In general, changes in a community noise level of less than 3.0 dB(A) are typically not noticed by the human ear.[1] Changes from 3.0 to 5.0 dB(A) may be noticed by some individuals who are sensitive to changes in noise. A greater than 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.

Noise sources occur in two forms: (1) point sources, such as stationary equipment or individual motor vehicles; and (2) line sources, such as a roadway with a large number of point sources (motor vehicles).

1 U.S. Department of Transportation, Federal Highway Administration, Highway Noise Fundamentals, (Springfield, Virginia, September 1980), p. 81.

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.[2] 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 dB(A) at 200 feet from the source. Sound generated by a line source typically attenuates (i.e., becomes less) 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. Examples of hard sites include asphalt, concrete and hard and sparsely vegetated soils. Examples of acoustically soft sites include sand, plowed farmland, grass, crops and heavy ground cover.

Sound levels can also be attenuated by man-made or natural barriers (e.g., sound walls, berms, ridges), as well as elevational differences, as illustrated in **Figure IV.H-1, Noise Attenuation by Barriers and Elevation Differences**. Solid walls and berms may reduce noise levels by 5.0 to 10.0 dB(A) depending on their height and their horizontal distance relative to the noise source and the noise receptor.[3] A higher noise barrier lengthens the path of a sound wave from the source to the receptor. The longer the distance a sound wave needs to travel to reach the receptor, the greater the sound attenuation. Sound levels may also be attenuated 3.0 to 5.0 dB(A) by a first row of houses and 1.5 dB(A) for each additional row of houses in residential environments.[4] The minimum noise attenuation provided by typical building construction in California is provided in **Table IV.H-1**, below.

Table IV.H-1
Outside to Inside Noise Attenuation (dB(A))

Building Type	Open Windows	Closed Windows
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Convalescent Homes	17	25
Offices	17	25
Theaters	20	30
Hotels/Motels	17	25

Source: Transportation Research Board, National Research Council, Highway Noise: A Design Guide for Highway Engineers, National Cooperative Highway Research Program Report 117.

2 Ibid., p. 97.
3 Ibid., p. 18.
4 T. M. Barry and J. A. Reagan, U.S. Department of Transportation, Federal Highway Administration, Office of Research, Office of Environmental Policy, FHWA Highway Traffic Noise Prediction Model, (Washington D.C., December 1978), NTIS, FHWA-RD-77-108, p. 33.

Figure IV.H-1, Noise Attenuation by Barriers and Elevation Differences

Several scales have been developed that address community noise levels. Each scale averages varying noise exposure over time and quantifies the result in terms of a single number descriptor. Those that are applicable to this analysis are the Energy-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. The L_{eq} metric is a single-number noise descriptor that represents the average sound level over a given period of time. L_{eq} can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour or 24-hour periods. L_{max}, L_{min} and L_{xx} are also common noise descriptors. L_{max} and L_{min} are the maximum and minimum noise levels, respectively, over a given period of time and L_{xx}, known as a statistical sound level, is the time-varying noise level which would be exceeded xx percent of the time.

CNEL is a commonly used noise metric devised to relate noise exposure over time to community response. CNEL is an average A-weighted sound level measured over a 24-hour period and adjusted to account for increased sensitivity by most individuals to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained by adding 5.0 decibels to sound levels occurring during the evening from 7 PM to 10 PM and 10.0 decibels to sound levels occurring during the nighttime from 10 PM to 7 AM.[5]

b. Existing Noise Environment

The existing noise environment is characterized by point and mobile noise sources. Existing point noise sources that influence the localized noise environment around the project site include nearby commercial and retail uses. Noise levels in the project vicinity are highest along major roadways including the I-110 (Harbor Freeway), I-10 (San Bernardino Freeway), Broadway, Hill Street, Main Street and Olympic. Existing noise levels are documented below.

Ambient Noise Levels

The project site is located in an urban environment and is exposed to a variety of noises typical of such a setting. The Broadway and Hill Street sites are bounded by existing commercial and retail land uses to the north, office and parking uses to the east, the former Transamerica Center building to the south, currently referred to as the SBC Tower and commercial land uses to the west. The 12th Street site is bounded commercial, retail and parking land uses to the north, commercial and retail land uses to the south, retail land uses to the east and a parking structure and retail land uses to the west.

To document ambient conditions, noise level monitoring was conducted by Impact Sciences, Inc., using a Brüel and Kjær Type 2237 Integrating Sound Level Meter. The Brüel and Kjær 2237 meter is a

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5 California Department of Transportation, Technical Noise Supplement; A Technical Supplement to the Traffic Noise Analysis Protocol, (Sacramento, California: October 1998), pp. N51–N54.

combination Type 2 precision integrating sound level meter and a statistical data logger that meets the American National Standards Institute Standard S1.4, International Electrotechnical Commission Standard 651 and 804 for Type 2 meters. The unit was field-calibrated using a Larson Davis Model 150 Sound Level Calibrator. The calibration unit meets the requirements of the American National Standards Institute Standard S1.40. The accuracies of the noise meter and calibrator are maintained through a program established by the United States National Institute of Standards and Technology. As shown on **Figure IV.H-2, Noise Monitoring Locations,** noise monitoring was conducted at four locations directly adjacent to the project site on August 18, 2005 from 6:30 AM to 8:00 AM and at one location directly adjacent to the project site on September 15, 2005 from 7:28 AM to 7:43 AM. These timeframes were selected to coincide with the AM peak-hour traffic commute, which is representative of peak daily ambient roadway noise in a "worst-case" scenario.

Noise readings were taken in 15-minute periods with "A" frequency fast time weighting. **Table IV.H-2**, below, provides the data associated with each monitoring period for locations adjacent to the project site. As shown, noise levels ranged from a low of 69.5 dB(A) to a high of 75.8 dB(A). Current noise levels are primarily influenced by traffic along surrounding roadways.

Table IV.H-2
Existing Ambient Noise Levels

Location	Distance from Centerline of Monitored Roadway	Time	Noise Levels
1. 11th Street	30 Feet	6:39 AM to 6:54 AM	69.5 dB(A)
2. Hill Street[1]	40 Feet	7:28 AM to 7:43 AM	71.5 dB(A)
3. Broadway south of 12th Street	40 Feet	7:20 AM to 7:35 AM	75.8 dB(A)
4. 12th Street	40 Feet	7:37 AM to 8:52 AM	70.2 dB(A)
5. Main Street	40 Feet	7:54 AM to 8:09 AM	71.8 dB(A)

Source: Impact Sciences, Inc. August 18, 2005 and September 15, 2005.
[1] *Noise monitoring along Hill Street occurred on September 15, 2005.*

Figure IV.H-2, Noise Monitoring Locations

Roadway Noise

Noise generated by vehicular traffic traveling on the local roadway network represents the predominant and most consistent noise source in the area surrounding the project site. In order to characterize the contribution of motor vehicle noise to the ambient environment in the study area, both on- and off-site noise prediction modeling was conducted along potentially affected roadway segments.

Noise levels were modeled with the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). This model calculates the average noise level at specific locations based on traffic volumes, auto/truck mix, 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).[6] Caltrans data show 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.[7] Traffic volumes utilized as data inputs to the noise prediction model were based on information provided by Crain and Associates, as part of the traffic impact analysis conducted for the project.

Table IV.H-3, Existing Weekday Modeled Roadway Noise Levels, identifies the existing roadway noise levels for the 32 roadway segments analyzed in the traffic study prepared for the proposed project. Roadway noise levels for the following roadways were modeled at various reference locations based on approximate roadway width. The following roadways were modeled at reference locations 30 feet from the roadway centerline along the corresponding segments listed below in **Table IV.H-3**: 11th Street, 12th Street, Pico Boulevard and Hill Street north of 12th Street. Roadway noise levels for the following roadways were modeled at reference locations of 40 feet from the roadway centerline along the corresponding segments listed below in **Table IV.H-3**: Olympic Boulevard, Olive Street, Hill Street south of 12th Street, Broadway and Main Street.

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6 Rudolf W. Hendriks, California Vehicle Noise Emission Levels, (Sacramento, California: California Department of Transportation, January 1987), NTIS, FHWA/CA/TL-87/03.

7 Ibid.

Table IV.H-3
Existing Weekday Modeled Roadway Noise Levels

Roadway Segment	Existing (2005) CNEL in dB(A)
Olympic Blvd. W/O Hill St.	69.0
Olympic Blvd. E/O Hill St.	68.9
Olympic Blvd. E/O Broadway	68.6
11th St. W/O Olive St.	63.5
11th St. E/O Olive St.	63.3
11th St. W/O Broadway	64.0
11th St. E/O Broadway	63.8
11th St. E/O Main St.	63.1
12th St. W/O Olive St.	59.4
12th St. E/O Olive St.	58.9
12th St. W/O Broadway	62.8
12th St. E/O Broadway	61.3
12th St. W/O Los Angeles St.	61.9
12th St. E/O Los Angeles St.	62.4
Pico Blvd W/O Hill St.	66.1
Pico Blvd W/O Broadway	66.2
Pico Blvd E/O Broadway	65.8
Olive St. S/O Olympic Blvd.	64.8
Olive St. N/O 12th St.	64.9
Olive St. S/O 12th St.	64.5
Hill St. N/O Olympic Blvd.	66.4
Hill St. S/O Olympic Blvd.	66.1
Hill St. N/O 12th St.	65.4
Hill St. S/O 12th St.	65.1
Hill St. S/O Pico Blvd.	65.3
Broadway S/O Olympic Blvd.	66.8
Broadway N/O 12th St.	67.0
Broadway S/O 12th St.	66.8
Broadway S/O Pico Blvd.	66.6
Main St. S/O Olympic Blvd.	67.7
Main St. N/O 12th St.	67.5
Main St. S/O 12th St.	67.4

Source: Impact Sciences, Inc. Model results are contained in ***Appendix IV.H****.*
Note: Noise level estimates are at 30 to 40 feet from the roadway centerline.

As is indicated in **Table IV.H-3**, existing roadway noise levels at reference locations of 30 to 40 feet from the roadway centerline are predicted to range from 58.9 to 69.0 dB(A) CNEL. According to **Table IV.H-4, City of Los Angeles Land Use Compatibility for Community Noise**, existing noise levels along the roadways listed above are within the "normally acceptable" category or below for all land uses.

Table IV.H-4
City of Los Angeles Land Use Compatibility for Community Noise

Land Use	dB(A) CNEL Clearly Acceptable	Normally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single-Family, Duplex, Mobile Homes	50–60	55–70	70–75	70+
Multi-Family Homes	50–65	60–70	70–75	70+
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–70	60–70	70–80	80+
Transient Lodging – Motels, Hotels	50–65	60–70	70–80	80+
Auditoriums, Concert Halls, Amphitheaters	--	50–70	--	65+
Sports Arena, Outdoor Spectator Sports,	--	50–75	--	70+
Playgrounds, Neighborhood Parks	50–70	--	65–75	72+
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–75	--	70–80	80+
Office Buildings – Personal, Business and Professional Commercial	50–70	67–77	75+	--
Industrial, Manufacturing, Utilities, Agriculture	50–75	70–80	75+	--

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 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: L.A. CEQA Thresholds Guide*, 1998.*

Sensitive Receptors

Some land uses are considered to be more sensitive to elevated noise levels than others, due to the amount of noise exposure and the types of activities typically involved. The *L.A. CEQA Thresholds Guide* states that residences, transit lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds and parks are generally more sensitive to noise than are commercial and industrial land uses.[8] In the vicinity of the project site, sensitive receptors include multi-family residences located at the southeast corner of Hill Street and Pico Boulevard, approximately 461 feet from the site southwest of the 12th Street site.[9] Multi-family residences are also located at the southwest corner of 11th Street and Grand, approximately 941 feet west of the Hill Street site.[10] In addition, the Hill Street site includes residential units and would be completed and occupied during the last phase of construction of the 12th Street site. As a result, the Hill Street site would be considered a sensitive receptor during construction of the 12th Street site. The Hill Street site is located

8 *L.A. CEQA Thresholds Guide*, May 14, 1998, p. I.1-2.

9 Site visit conducted by Impact Sciences, Inc., September 15, 2005; Zone Information and Map Access System, www.zimas.lacity.org; accessed September 15, 2005.

10 Ibid.

approximately 525 feet northwest of the 12th Street site. There are no other sensitive receptors in the vicinity of the project site.

3. REGULATORY FRAMEWORK

a. State of California

The State of California, Department of Health Services, Environmental Health Division, has published recommended guidelines for land use compatibility with regards to community noise exposure. These guidelines rate land use compatibility in terms of the following: normally acceptable, conditionally acceptable, normally unacceptable and clearly unacceptable. **Figure IV.H-3, Land Use Compatibility Guidelines**, identifies Department of Health Services recommended exterior noise levels for various land use categories. Each jurisdiction is required to consider these guidelines when developing its General Plan Noise Element and when determining acceptable noise levels within its community. These guidelines are representative of various land uses that include residential, commercial/mixed-use, industrial and public facilities.

The California Commission of Housing and Community Development officially adopted noise standards in 1974. In 1988, the Building Standards Commission approved revisions to the standards (Title 24, Part 2, California Code of Regulations). As revised, Title 24 establishes an interior noise standard of 45 dB(A) CNEL for residential space.[11]

b. City of Los Angeles Noise Ordinance

The Los Angeles Municipal Code (LAMC), Section 41.40 and Chapter XI, Articles 1 through 6, establishes regulations regarding allowable increases in noise levels in terms of established noise criteria and construction activities.

The City of Los Angeles Noise Ordinance (Chapter XI, Articles 1 through 6) establishes acceptable ambient sound levels to regulate intrusive noises (e.g., stationary mechanical equipment and vehicles other than those traveling on public streets) within specific land use zones. In accordance with the City's Municipal Code limits, a noise level increase of 5 dB(A) over the existing average ambient noise level at an adjacent property line is considered a noise violation. This standard applies to all sources except vehicles traveling on public streets. Further, for purposes of determining whether or not a violation of the noise regulation has occurred, the sound level measurements of a loud noise with a duration of 5 minutes or less during a 1-hour period can be reduced by 5 dB(A) to account for people's increased tolerance for short-duration noise events. In cases where the actual ambient noise level is not known,

11 Cowan, James P. Handbook of Environmental Acoustics, pp. 246–247, 1994.

Figure IV.H-3, Land Use Compatibility Guidelines

presumed daytime (7:00 AM to 10:00 PM) minimum ambient noise for properties zoned commercial is considered to be 60 dB(A), while nighttime (10:00 PM to 7:00 AM) ambient noise is considered to be 55 dB(A).[12]

Construction noise sources cannot be strictly related to a 24-hour community noise standard because this type of noise typically occurs only during certain hours of the day, and construction source noise levels vary greatly over time. Construction activities are also treated separately in many community noise ordinances because they do not represent a chronic, permanent noise source. To abate the potential nuisance from construction noise, the City of Los Angeles Noise Ordinance and Public Welfare Regulations (Chapter IV of the Los Angeles Municipal Code) regulate construction noise in several ways. The standards defined by the City for construction activity noise control include the following:

- Section 41.40(a) limits hours of construction activities to 7 AM to 9 PM if such activities may disturb the sleep of any persons in the vicinity. Construction activities include equipment operations, as well as equipment repair and servicing, and also the delivery of any construction materials (Ordinance No. 158 587).
- Section 41.40(c) further limits hours of allowable operations from 8 AM to 6 PM on Saturday or any holiday (Ordinance No. 166 170; effective 9/29/90). Construction work is not permitted on Sundays.
- Additionally, Section 112.05 of the Los Angeles Municipal Code (Ordinance No. 161 564) establishes performance standards for powered equipment or tools. The maximum allowable noise level for operations within 500 feet of any residential zone is 75 dB(A) measured at 50 feet from the noise source. This restriction holds unless compliance is not technically feasible even with the use of noise “mufflers, shields, sound barriers and/or other noise reduction devices or techniques.”

c. City of Los Angeles CNEL Guidelines

The State of California, Department of Health Services, Environmental Health Division, has published recommended guidelines for noise and land use compatibility referred to as the “Guidelines.” The City of Los Angeles has adopted local guidelines based, in part, on the State Department of Health Services noise compatibility guidelines, which are solely used for planning purposes (i.e., no regulatory enforcement). These guidelines, contained in the *L.A. CEQA Thresholds Guide,* are intended for use in assessing the compatibility of various land use types with a range of noise levels. CNEL guidelines for specific land uses are classified into four categories: (1) “normally acceptable,”(2) “conditionally acceptable,” (3) “normally unacceptable,” (4) “clearly unacceptable.” As shown in **Table IV.H-4**, above, for single-family residential uses, a CNEL value of 60 dB(A) is the upper limit of what is considered a “normally acceptable” noise environment, although a CNEL as high as 70 dB(A) is considered “conditionally acceptable.” For a less sensitive auditorium use, there is no threshold for “normally acceptable,” although a CNEL as high as 70 dB(A) is considered “conditionally acceptable.”

12 Los Angeles Municipal Code, Chapter XI, Article I, Section 111.03.

4. ENVIRONMENTAL IMPACT ANALYSIS

a. Significance Criteria

Noise thresholds consider both the Noise Compatibility Criteria and community responses to changes in noise levels. The following thresholds of significance were developed for this noise impact analysis based on information contained in the City of *L.A. CEQA Thresholds Guide*, the plans and policies identified previously in this EIR section and community responses to noise level changes. These thresholds apply to both project and cumulative impacts assessed in this section.

Project Construction

The proposed project would result in significant noise impacts from construction if any of the following situations occurred:

- Construction activities lasting more than a day would exceed existing ambient exterior noise levels by 10 dB(A) or more at a noise sensitive use;
- Construction activities lasting more than 10 days in a 3-month period would exceed existing ambient exterior noise levels by 5 dB(A) or more at a noise sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dB(A) at a noise sensitive use between the hours of 9:00 PM and 7:00 AM Monday through Friday, before 8:00 AM or after 6:00 PM on Saturday or at anytime on Sunday.[13]

Project Operation

- The proposed project would result in a significant impact on noise levels from project operation if the project would cause the ambient noise level measured at the property line of affected noise uses to increase by 3 dB(A) in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, as identified in **Table IV.H-2**, or by 5 dB(A) within "normally acceptable" or "conditionally acceptable" category.[14]
- Project-related operational (i.e., non-roadway) noise sources increase ambient noise by 5 dB(A), thus causing a violation of the City Noise Ordinance.

b. Analysis of Project Impacts

Construction-Related Impacts

Construction of the proposed project would involve several phases. Rehabilitation and seismic upgrades of the Broadway building would occur in two phases: building abatement and building rehabilitation. Construction activities on this site are expected to begin in April of 2006 and last for a duration of

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13 *L.A. CEQA Thresholds Guide*, May 14, 1998, p. I.1-3.

14 Ibid., pp. I.2-3 through I.2-4.

approximately 20 months, which includes approximately 4 months for building abatement and approximately 18 months for building rehabilitation. Demolition of the existing Press building and construction of the Hill Street building would occur over four phases: building abatement and demolition lasting for approximately 6 months; shoring and excavation lasting for approximately 4 months; parking structure and podium construction lasting for approximately 10 months; and tower construction lasting for approximately 16 months. The entire process would occur over approximately 36 months and is expected to begin in January of 2007. Construction of the 12^{th} Street building would occur over three phases: parking structure excavation lasting approximately 4 months; parking structure construction lasting approximately 12 months; and tower construction lasting approximately 20 months. Construction duration would be over approximately 36 months and is expected to begin in January of 2008. Some of these stages may overlap. Overlapping phases are included in the analysis below. Construction staging would occur on the project sites.

The project applicant will comply with Section 41.40 of the City of Los Angeles Noise Ordinance, which states that construction operations shall be limited to the hours of 7 AM to 6 PM Monday through Friday and 8 AM to 6 PM on Saturdays and holidays. In compliance with the Noise Ordinance, no construction activities shall occur on Sundays. In addition, the project applicant will comply with Section 112.05 of the City of Los Angeles Noise Ordinance, which states that all technically feasible measures shall be implemented to reduce noise levels of construction equipment operating within 500 feet of residential areas in cases where noise levels exceed 75 dB(A) at 50 feet from the noise source. Technically feasible measures include, but are not limited to, changing the location of stationary construction equipment, shutting off idling equipment, notifying adjacent land uses in advance of construction work, ensuring that construction equipment is fitted with modern sound reduction equipment and installing temporary acoustic barriers around stationary construction noise sources.

The project applicant will require construction contractors to implement standard construction Best Management Practices (BMPs) to reduce temporary construction noise impacts on off-site sensitive receptors: equipment used for project construction shall be hydraulically or electrically powered impact tools (e.g., jack hammers) wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools; where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, a muffler could lower noise levels from the exhaust by up to about 10 dB(A); external jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dB(A); quieter procedures shall be used (such as drilling rather than impact equipment) wherever feasible; the project applicant shall require construction contractors to ensure that construction equipment is fitted with sound reduction equipment, per manufacturer's specifications; and the City shall require the posting of signs prior to construction activities with a phone number for residents to call with noise complaints.

Construction activities associated with development of the sites are analyzed below according to phases. None of the construction phases would involve pile driving.

- *Impacts related to construction noise are considered significant if construction of the proposed project would exceed the ambient noise level by 5 dB(A) at a noise sensitive use between the hours of 9:00 PM and 7:00 AM Monday through Friday, before 8:00 AM or after 6:00 PM on Saturday or at anytime on Sunday.*

Construction of the proposed project would comply with Sections 41.40(a) and 41.40(c) of the City of Los Angeles Noise Ordinance, which limits hours of construction activities to 7 AM to 9 PM Monday through Friday and 8 AM to 6 PM on Saturday or any holiday. Construction work is not permitted on Sundays. As a result, construction activities would not exceed the ambient noise level by 5 dB(A) at a noise sensitive use between the hours of 9:00 PM and 7:00 AM Monday through Friday, before 8:00 AM or after 6:00 PM on Saturday or at anytime on Sunday. Therefore, no significant impact would occur.

- *Impacts related to construction noise are considered significant if construction activities lasting more than 10 days in a 3-month period would exceed existing ambient exterior noise levels by 5 dB(A) or more at a noise sensitive use.*

Broadway Site and Hill Street Site

Given that the two sites are directly adjacent to one another and that the rehabilitation phase of the Broadway building and demolition and construction phases on the Hill Street site would overlap, the two sites are analyzed together as one site with regard to construction noise. Construction on the sites would involve the use of heavy equipment, such as excavators with hoe-ram and scrapers; and smaller equipment, such as pneumatic tools, saws and hammers, could also be used. Heavy trucks would be used to deliver equipment and building materials and to haul away waste materials. This equipment would generate both steady-state and episodic noise that would be heard both on and off the project site.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Data is presented in **Figure IV.H-4, Noise Levels of Typical Construction Equipment**. As shown, noise levels generated by heavy equipment can range from approximately 68 dB(A) to noise levels in excess of 100 dB(A) when measured at 50 feet. As discussed previously, these stationary source noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6.0 to 7.5 dB(A) per doubling of distance. Nonetheless, any locations that would have an uninterrupted line of site to the construction noise sources could be exposed to some level of construction noise. It should be noted, that each piece of construction equipment would not be used continuously; the loudest piece of equipment operating at any one time would represent the ambient noise at that time as it would partially mask other lesser noise sources.

Figure IV.H-4 Noise Levels of Typical Construction Equipment

As stated above, noise levels generated during rehabilitation and construction activities on the two sites would depend upon distance between the construction activity and the affected uses. In addition, the noise attenuation effects of any intervening buildings between the source and the receptor. As previously stated, sound levels may be attenuated 3.0 to 5.0 dB(A) by a first row of houses and 1.5 dB(A) for each additional row of houses in residential environments.[15]

This construction noise impact analysis assumes the worst-case scenario by assuming that the loudest construction equipment would operate at the property lines. In actuality, the equipment used on the project site would only operate at the property line for short periods, while the majority of the work would occur within the interior of the site. In addition, construction activities would be restricted on a daily basis in accordance with City noise controls. During rehabilitation and construction activities on the two sites, the loudest equipment would be the use of heavy trucks and scrapers that are known to generate a noise level of 95 dB(A) at 50 feet, as identified in **Figure IV.H-4**.

The closest sensitive receptors in the vicinity of Broadway site are multi-family residences located at the southwest corner of 11th Street and Grand Avenue, approximately 941 feet west of the Hill Street site.[16] If construction equipment were operating at the property line, it is possible that temporary and periodic exterior noise levels of up to 69.5 dB(A) would occur at the sensitive receptor.[17] However, a single row of houses, or in this case buildings, between the receptor and the noise source reduces the noise level by about 5 dB(A) and 1.5 dB(A) for each additional row of buildings.[18] Given that there are three rows of intervening mid-rise structures between the Hill Street site and the sensitive receptor,[19] construction noise levels would further attenuate by a minimum of 5 dB(A) such that noise levels of up to 64.5 dB(A) would occur at the sensitive receptor. As indicated above in **Table IV.H-3**, existing noise levels along 11th Street west of Olive Street were modeled at 63.5 dB(A). As a result, construction activities on the two sites would not exceed existing ambient exterior noise levels by 5 dB(A) or more at a noise sensitive use. Therefore, construction noise associated with the Broadway and Hill Street site does not have the potential to result in significant impacts.

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15 T. M. Barry and J. A. Reagan, U.S. Department of Transportation, Federal Highway Administration, Office of Research, Office of Environmental Policy, FHWA Highway Traffic Noise Prediction Model, (Washington D.C., December 1978), NTIS, FHWA-RD-77-108, p. 33.

16 Site visit conducted by Impact Sciences, Inc., September 15, 2005; Zone Information and Map Access System, www.zimas.lacity.org; accessed September 15, 2005.

17 Based on an attenuation rate of 6.0 dB(A) per doubling distance at a reference distance of 941 feet.

18 T. M. Barry and J. A. Reagan, U.S. Department of Transportation, Federal Highway Administration, Office of Research, Office of Environmental Policy, FHWA Highway Traffic Noise Prediction Model, (Washington D.C., December 1978), NTIS, FHWA-RD-77-108, p. 33.

19 Site visit conducted by Impact Sciences, Inc., September 15, 2005.

12th Street Site

The parking structure and tower construction phases of the Hill Street site would overlap with all three phases of construction at the 12th Street site. However, given the number and height of intervening structures between the two sites and the location of the sensitive receptors relative to each site, construction noise generated from both sites would not increase noise levels at sensitive receptors compared to construction noise levels generated from one site. This construction noise impact analysis assumes a worst-case scenario that the loudest construction equipment would operate at the property lines. During construction activities on the 12th Street site, the loudest equipment would be the use of heavy trucks and scrapers that are known to generate a noise level of 95 dB(A) at 50 feet as identified in **Figure IV.H-4**.

The closest sensitive receptors in the vicinity of 12th Street site are multi-family residences located at the southeast corner of Hill Street and Pico Boulevard, approximately 461 feet from the southwest of the 12th Street site. If construction equipment were operating at the property line, it is possible that temporary and periodic exterior noise levels of up to 75.7 dB(A) would occur at the sensitive receptor.[20] However, a single row of houses, or in this case buildings, between the receptor and the noise source reduces the noise level by about 5 dB(A) and 1.5 dB(A) for each additional row of buildings.[21] Given that there is a mid-rise parking structure and two rows of retail structures between the 12th Street site and the sensitive receptor,[22] construction noise levels would further attenuate by a minimum of 5 dB(A) such that exterior noise levels of up to 70.7 dB(A) would occur at the sensitive receptor. It should be noted, that the multi-family residences at the specified location do not have exterior living space.[23] Therefore, construction noise at this sensitive receptor would in reality only affect interior noise levels. As indicated in **Table IV.H-3**, existing noise levels along Pico Boulevard west of Broadway were modeled at 66.7 dB(A). As a result, construction activities on the 12th Street site would not exceed existing ambient exterior noise levels by 5 dB(A) or more at a noise sensitive use. Therefore, construction noise from the 12th Street site, experienced by the nearest existing sensitive receptor, would not have the potential to result in significant impacts.

As previously stated, the proposed Hill Street building would be completed and occupied during the last phase of construction of the 12th Street site. Given that the Hill Street site is located approximately 525 feet northwest of the 12th Street site, it is possible that temporary and periodic exterior noise levels of up

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20 Based on an attenuation rate of 6.0 dB(A) per doubling distance at a reference distance of 461 feet.

21 T. M. Barry and J. A. Reagan, U.S. Department of Transportation, Federal Highway Administration, Office of Research, Office of Environmental Policy, *FHWA Highway Traffic Noise Prediction Model*, (Washington D.C., December 1978), NTIS, FHWA-RD-77-108, p. 33.

22 Site visit conducted by Impact Sciences, Inc., September 15, 2005.

23 Ibid.

to 74.6 dB(A) would occur at the Hill Street building.[24] In actuality, the equipment used on the project site would only operate at the property line for short periods, while the majority of the work would occur within the interior of the site. In addition, construction activities would be restricted on a daily basis in accordance with City noise controls. There are several intervening structures between the 12th Street and Hill Street site, such as the former Transamerica Center and the Broadway building.[25] Therefore, construction noise levels would further attenuate by a minimum of 5 dB(A) such that exterior noise levels of up to 69.6 dB(A) would occur at the Hill Street building. As indicated in **Table IV.H-3**, existing noise levels along Broadway north of 12th Street were modeled at 67.7 dB(A). As a result, construction activities on the 12th Street site would not exceed existing ambient exterior noise levels by 5 dB(A) or more at the Hill Street site. Therefore, construction noise on the proposed Hill Street residential site from the 12th Street site does not have the potential to result in significant impacts.

In addition to equipment noise on all three project sites, the movement of equipment and workers onto the project site during construction would generate temporary traffic noise along access routes to the project areas. Large construction equipment would be transported to the project sites along a City-approved route that would avoid residential neighborhood streets. The major pieces of heavy equipment would be moved into the development areas once for each construction stage and would have a less than significant short-term effect on traffic noise levels for this reason. It is anticipated that between 50 and 150 workers would be required on each site per phase. It should be noted that it takes a doubling of average daily trips on roadways to increase noise by 3 dB(A); construction activities are not expected to result in a doubling of trip volume.[26] As a result, the noise level increases along major arterials surrounding the project site would be less than 3 dB(A), and potential impacts would be less than significant. Therefore, construction related traffic noise does not have the potential to result in significant impacts.

Operational Impacts

Roadway Noise

- *Impacts related to roadway noise are considered significant if construction of the proposed project would cause the ambient noise level measured at the property line of affected noise uses to increase by 3 dB(A) in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, as identified in **Table IV.H-2**, or by 5 dB(A) within "normally acceptable" or "conditionally acceptable" category.*

As discussed previously, the predominant source of existing noise in the vicinity of the project sites is vehicular noise on local roadways. Development of the project would increase the traffic volumes

24 Based on an attenuation rate of 6.0 dB(A) per doubling distance at a reference distance of 525 feet.
25 Site visit conducted by Impact Sciences, Inc., September 15, 2005.
26 Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108).

traveling along local roadways. To evaluate the potential permanent impact associated with increased vehicle trips generated by the proposed project, noise prediction modeling utilizing the FHWA noise prediction model was conducted for the same roadway segments at the same reference locations that were previously identified in **Table IV.H-3**. Roadway geometrics and traffic volumes for the anticipated segments were obtained from the traffic study prepared for the proposed project. **Table IV.H-5, Future Year (2010) Weekday Modeled Roadway Noise Levels**, identifies the future weekday roadway noise levels in the year 2010 for both with and without project traffic volumes.

As is indicated in **Table IV.H-5**, the proposed project would result in permanent ambient noise level increases ranging from 0.0 to 0.8 dB(A) on surrounding roadways during the weekday. The largest project related increase of 0.8 dB(A) would occur on 12th Street east of Broadway. None of the roadway segments would result in an increase in CNEL of 3 dB(A) to or within the "normally unacceptable" or "clearly unacceptable" category, as identified in **Table IV.H-4**, or by 5 dB(A) within "normally acceptable" or "conditionally acceptable" category.[27] Therefore, the increase in exterior noise levels due to project-related traffic would not have the potential to result in significant impacts on uses adjacent to the roadways listed in **Table IV.H-5**.

As indicated in **Table IV.H-5**, the Broadway and Hill sites would experience maximum CNEL noise levels of 68.2 dB(A) along Broadway south of 11th Street, and the 12th Street site would experience maximum CNEL noise levels of 68.4 dB(A) along Main Street south of 12th Street. Exterior noise levels would be within the "normally acceptable" range, and assuming a 25 dB(A) exterior to interior noise level reduction, interior noise levels would be approximately 43 dB(A). This interior noise level is considered to be acceptable. Therefore, the increase in interior noise levels due to project-related traffic would not have the potential to result in significant impacts on uses adjacent to the roadways listed in **Table IV.H-5**.

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27 *L.A. CEQA Thresholds Guide*, May 14, 1998, pp. I.2-3 through I.2-4.

Table IV.H-5
Future Year (2010) Weekday Modeled Roadway Noise Levels

Roadway Segment	Year 2010 Without Project Roadway Noise Levels	Year 2010 With Project Roadway Noise Levels	Project-Related Increase
Olympic Blvd. W/O Hill St.	70.3	70.4	0.1
Olympic Blvd. E/O Hill St.	70.2	70.2	0.0
Olympic Blvd. E/O Broadway	69.9	69.9	0.0
11th St. W/O Olive St.	64.8	65.0	0.2
11th St. E/O Olive St.	64.4	64.8	0.4
11th St. W/O Broadway	65.2	65.6	0.4
11th St. E/O Broadway	64.6	64.8	0.2
11th St. E/O Main St.	64.3	64.3	0.0
12th St. W/O Olive St.	59.8	60.5	0.7
12th St. E/O Olive St.	59.3	60.0	0.7
12th St. W/O Broadway	62.5	63.2	0.7
12th St. E/O Broadway	61.6	62.4	0.8
12th St. W/O Los Angeles St.	62.1	62.2	0.1
12th St. E/O Los Angeles St.	62.6	62.7	0.1
Pico Blvd W/O Hill St.	66.7	67.0	0.3
Pico Blvd W/O Broadway	66.7	67.0	0.3
Pico Blvd E/O Broadway	66.3	66.4	0.1
Olive St. S/O Olympic Blvd.	65.2	65.3	0.1
Olive St. N/O 12th St.	65.5	65.5	0.0
Olive St. S/O 12th St.	65.2	65.2	0.0
Hill St. N/O Olympic Blvd.	67.2	67.3	0.1
Hill St. S/O Olympic Blvd.	66.9	67.1	0.2
Hill St. N/O 12th St.	66.1	66.5	0.4
Hill St. S/O 12th St.	65.6	66.0	0.4
Hill St. S/O Pico Blvd.	65.7	65.9	0.2
Broadway S/O Olympic Blvd.	67.4	67.5	0.1
Broadway N/O 12th St.	67.7	68.2	0.5
Broadway S/O 12th St.	67.4	68.0	0.6
Broadway S/O Pico Blvd.	67.2	67.5	0.3
Main St. S/O Olympic Blvd.	68.5	68.7	0.2
Main St. N/O 12th St.	68.4	68.4	0.0
Main St. S/O 12th St.	68.2	68.3	0.1

Source: Impact Sciences, Inc. Model results are contained in ***Appendix IV.H****.*
Note: Noise level estimates are at 40 to 70 feet from the roadway centerline, based on the specific width of the roadways.

Point Source Noise

- *Project-related operational (i.e., non-roadway) noise source impacts are considered significant if the proposed project would increase ambient noise by 5 dB(A), thus causing a violation of the City Noise Ordinance.*

Parking Structures

Development of the Hill Street building would introduce a four-level subterranean parking structure on the project site and development of the 12th Street building would introduce a six-level parking structure on the project site, which includes two subterranean parking levels and four above-grade parking levels. As shown in **Table IV.H-2**, existing ambient noise levels range from a low of 69.5 dB(A) to a high of 75.8 dB(A). In general, noise associated with parking structures is not of sufficient volume to exceed community standards based on the time-weighted CNEL scale. Parking structures can be a source of annoyance due to automobile engine start-ups and acceleration and the occasional accidental activation of car alarms. CNEL is quantified logarithmically. A number of peak measurements generated in a parking lot over a 24-hour period would not have a quantifiable increase (i.e., Less than 0.1 dB[A]). The 12th Street and Hill Street parking structures would be below the retail floors, which are, in turn, below the residential floors. Parking structures can generate L_{eq} noise levels of between 49 dB(A) L_{eq} (tire squeals) to 74 dB(A) L_{eq} (car alarms) at 50 feet. Due to the minimum attenuation of 5 dB(A) associated with the retail floor situated between the parking structure and residential floors and the enclosed design of the parking structure (e.g., below grade), the predicted noise level increase caused by activity within the parking structure would not increase on-site ambient noise levels by 5 dB(A). Additionally, due to the high level of traffic noise along streets surrounding the project sites, normal daytime parking structure L_{eq} noise levels on site would be masked by traffic on nearby roadways.

The closest sensitive receptor to the Hill Street parking structure would be a multi-family residential structure located approximately 941 feet west of the Hill Street site. The nearest residence to the 12th Street parking structure is located approximately 461 feet southwest of the 12th Street site. As stated above, parking structures can generate L_{eq} noise levels up to 74 dB(A) L_{eq} (car alarms) at 50 feet. Therefore, the closest sensitive receptor would experience noise levels up to 54.7 dB(A) due to activity within the parking structure.[28] Due to the attenuation associated with the distance separation and intervening buildings, the predicted noise level increase of 54.7 dB(A) caused by activity within the parking structure would neither cause a 5-dB(A) increase over ambient noise levels nor would it be audible at the nearest sensitive receptor. As a result, noise levels caused by activities within the parking structures do not have the potential to result in significant impacts to off-site sensitive receptors.

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28 Based on an attenuation rate of 6.0 dB(A) per doubling distance at a reference distance of 461 feet.

Loading Docks

The Hill Street and 12th Street buildings both include planned loading docks located near the southern boundary and along the alley of each project site. The operations at loading docks typically result in noise levels of between 64 to 66 dB(A) at 75 feet. As shown in **Table IV.H-3**, existing ambient noise levels range from a low of 69.5 dB(A) to a high of 75.8 dB(A) on the project sites. The closest residential units to the loading docks in the Hill Street building are located on the second floor. Assuming the first floor retail level is 12 feet in height, residential units on the second floor would experience exterior noise levels up to 81.9 dB(A) due to loading dock operations.[29] As a result, on-site sensitive receptors at the Hill Street building could experience exterior noise levels greater than 5 dB(A) over ambient noise levels. Therefore, noise generated by loading docks could result in potentially significant impacts to residents in the Hill Street building, and mitigation is recommended to reduce this impact to a less than significant level. Assuming a 25 dB(A) exterior to interior noise level reduction due to typical construction, residents in the Hill Street building would experience interior noise levels up to 56.9 dB(A), which would result in a significant unavoidable impact, even with inclusion of mitigation.

The closest residential units to the loading docks in the 12th Street building are located on the sixth floor. Assuming each level is 12 feet in height, residential units on the sixth floor would experience exterior noise levels up to 67.9 dB(A) due to loading dock operations.[30] As a result, on-site sensitive receptors at the 12th Street building would not experience exterior noise levels greater than 5 dB(A) over ambient noise levels. Therefore, noise generated by loading docks would not have the potential for significant impacts to residents in the 12th Street building. Assuming a 25 dB(A) exterior to interior noise level reduction, residents in the 12th Street building would experience interior noise levels up to 42.9 dB(A), which is a level considered to be acceptable, and would not result in a potentially significant impact.

The nearest residence is approximately 461 feet southwest of the proposed 12th Street parking structure. Therefore, the closest sensitive receptor would experience noise levels up to 50.2 dB(A) due to operations at loading docks.[31] Sensitive receptors further away would experience noise levels below 50.2 dB(A) due to operations at loading docks. Given that the nearest residences are located more than 461 feet from the loading docks and would not have a direct line of sight to the loading docks due to intervening buildings, the noise generated from the loading docks would not increase ambient noise levels by 5 dB(A). Therefore, noise levels caused by loading docks do not have the potential to result in significant impacts to off-site sensitive receptors.

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29 Based on an intensification rate of 6.0 dB(A) per half distance at a reference distance of 10 feet.
30 Ibid.
31 Based on an attenuation rate of 6.0 dB(A) per doubling distance at a reference distance of 461 feet.

Rooftop-Mounted Equipment

New uses proposed on the project sites could introduce various stationary noise sources, including electrical and mechanical air conditioning, most of which would be located on the rooftops of the project sites. Rooftop-mounted equipment currently exists on the Broadway building and Press building. However, the rooftop equipment on both buildings is not currently operating and is underutilized. Areas potentially affected by the introduction of such new equipment include the nearby residential uses. Typically, rooftop-mounted equipment sources produce noise levels of approximately 56 dB(A) at 50 feet. Although these noise levels may be perceptible within a quiet environment, the existing daytime, evening and nighttime ambient noise levels within the area as documented above would substantially mask these on-site sources. The nearest residence is approximately 461 feet southwest of the proposed 12th Street building. Therefore, the closest sensitive receptor would experience noise levels up to 36.7 dB(A) due to operations rooftop equipment.[32] The height differential between the roof of the Hill Street and 12th Street buildings and the nearby receptors, as well as the roof parapet, would attenuate the noise levels associated with rooftop equipment. Based on the above, noise levels from rooftop-mounted equipment would not increase ambient noise levels by 5 dB(A). Therefore, noise generated from rooftop-mounted equipment does not have the potential to result in significant impacts to off- or on-site sensitive receptors.

c. Cumulative Impacts

Construction Impacts

There are 45 related projects located with the project vicinity, all of which have the potential to produce construction noise impacts. Given that timing of construction activities for the related projects cannot be fully defined, any quantitative analysis that assumes multiple, concurrent construction project would be speculative. In addition, each of the related projects would have to comply with the local noise ordinance, as well as mitigation measures that may be incorporated pursuant to CEQA required environmental review that would reduce construction noise for each project to the extent feasible. As such, individual construction noise impacts would only contribute to cumulative impacts when projects are in proximity to each other. The closest related project to the three project sites is a theater proposed at 1050 South Hill Street, approximately 0.30 mile north of the Hill Street and Broadway sites. Construction of the Hill Street building and the theatre represents the "worst-case" scenario under cumulative construction impacts. The closest sensitive receptors to the theatre and Hill Street site are multi-family residences located at the southwest corner of 11th Street and Grand, approximately 941 feet west of the Hill Street site and 943 feet southwest of the related project site.[33] Given this project's distance from the

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32 Ibid.

33 Site visit conducted by Impact Sciences, Inc., September 15, 2005; Zone Information and Map Access System, www.zimas.lacity.org; accessed September 15, 2005.

project sites, approximately three rows of intervening mid-rise buildings between the project sites and incorporation of standard construction mitigation measures, the construction of this project would not contribute to cumulative noise levels in combination with the related theater project. Project construction noise level impacts would not be cumulatively considerable and would not have the potential to result in significant cumulative impacts.

Roadway Noise

Cumulative noise impacts would primarily occur as a result of increased traffic on local roadways due to ambient growth and other developments in the vicinity of the project site. The traffic study conducted for the proposed project projected future traffic volumes based on year 2010 weekday conditions. Based on the predicted future traffic levels under year 2010 weekday conditions identified in the traffic study, future noise levels were calculated using the FHWA Noise Prediction Model for the same roadway segments at the same reference locations analyzed throughout this analysis. The results of the noise prediction modeling are presented in **Table IV.H-6, Cumulative Weekday Modeled Roadway Noise Levels**.

As shown, the cumulative increase in noise levels predicted to occur on the studied roadway segments would range from 0.3 to 1.5 dB(A). As discussed above, the project's contribution is a maximum of 0.8 dB(A), which is not audible to the human ear and would not represent a cumulatively considerable increase. As a result, the project's contribution would not cause the ambient noise level measured at the property line of adjacent uses to increase by 3 dB(A) in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, as identified in **Table IV.H-4**, or by 5 dB(A) within "normally acceptable" or "conditionally acceptable" category.[34] Therefore, the project would not have a considerable contribution to a significant cumulative roadway noise level impact.

Under cumulative traffic conditions, the Broadway and Hill Street sites would experience maximum CNEL noise levels of 68.2 dB(A) along Broadway south of 11th Street, and the 12th Street site would experience maximum CNEL noise levels of 68.4 dB(A) along Main Street south of 12th Street. Exterior noise levels would be within the "normally acceptable" range, and assuming a 25 dB(A) exterior to interior noise level reduction due to standard construction techniques, interior noise levels would be approximately 43 dB(A) at either site. Both exterior and interior noise levels are considered to be acceptable. Therefore, the project would not have the potential to result in a considerable contribution to a significant cumulative noise level impact on the project sites.

34 Ibid., pp. I.2-3–I.2-4.

Table IV.H-6
Cumulative Weekday Modeled Roadway Noise Levels

Roadway Segment	Year 2005 Daily Traffic Volumes	Year 2010 Without Project Roadway Noise Levels	Year 2010 With Project Roadway Noise Levels	Cumulative Increase[1]	Increase as a Result of Project[2]
Olympic Blvd. W/O Hill St.	69.0	70.3	70.4	1.4	0.1
Olympic Blvd. E/O Hill St.	68.9	70.2	70.2	1.3	0.0
Olympic Blvd. E/O Broadway	68.6	69.9	69.9	1.3	0.0
11th St. W/O Olive St.	63.5	64.8	65.0	1.5	0.2
11th St. E/O Olive St.	63.3	64.4	64.8	1.5	0.4
11th St. W/O Broadway	64.0	65.2	65.6	1.6	0.4
11th St. E/O Broadway	63.8	64.6	64.8	1.0	0.2
11th St. E/O Main St.	63.1	64.3	64.3	1.2	0.0
12th St. W/O Olive St.	59.4	59.8	60.5	1.1	0.7
12th St. E/O Olive St.	58.9	59.3	60.0	1.1	0.7
12th St. W/O Broadway	62.8	62.5	63.2	0.4	0.7
12th St. E/O Broadway	61.3	61.6	62.4	1.1	0.8
12th St. W/O Los Angeles St.	61.9	62.1	62.2	0.3	0.1
12th St. E/O Los Angeles St.	62.4	62.6	62.7	0.3	0.1
Pico Blvd W/O Hill St.	66.1	66.7	67.0	0.9	0.3
Pico Blvd W/O Broadway	66.2	66.7	67.0	0.8	0.3
Pico Blvd E/O Broadway	65.8	66.3	66.4	0.6	0.1
Olive St. S/O Olympic	64.8	65.2	65.3	0.5	0.1
Olive St. N/O 12th St.	64.9	65.5	65.5	0.6	0.0
Olive St. S/O 12th St.	64.5	65.2	65.2	0.7	0.0
Hill St. N/O Olympic Blvd.	66.4	67.2	67.3	0.9	0.1
Hill St. S/O Olympic Blvd.	66.1	66.9	67.1	1.0	0.2
Hill St. N/O 12th St.	65.4	66.1	66.5	1.1	0.4
Hill St. S/O 12th St.	65.1	65.6	66.0	0.9	0.4
Hill St. S/O Pico Blvd.	65.3	65.7	65.9	0.6	0.2
Broadway S/O Olympic Blvd.	66.8	67.4	67.5	0.7	0.1
Broadway N/O 12th St.	67.0	67.7	68.2	1.2	0.5
Broadway S/O 12th St.	66.8	67.4	68.0	1.2	0.6
Broadway S/O Pico Blvd.	66.6	67.2	67.5	0.9	0.3
Main St. S/O Olympic Blvd.	67.7	68.5	68.7	1.0	0.2
Main St. N/O 12th St.	67.5	68.4	68.4	0.9	0.0
Main St. S/O 12th St.	67.4	68.2	68.3	0.9	0.1

Source: Impact Sciences, Inc. Model results are contained in ***Appendix IV.H****.*
Note: Noise level estimates are at 30 to 40 feet from the roadway centerline.
[1] *The cumulative increase represents the difference between the existing roadway noise levels and year 2010 roadway noise levels with the project noise levels.*
[2] *The project related increase represents the difference between with and without project year 2007 traffic volumes.*

d. Mitigation Measures

The following mitigation measures are intended to reduce operational noise impacts to the extent feasible.

Operational Mitigation Measures

MM-N-1. All private exterior livable space (i.e., balconies), located on floors 2 through 5 at the Hill Street building fronting the southern boundary, shall be required to construct a 4-foot-tall, solid barrier consisting of a solid material, such as Plexiglas or wood, in place of an open wood or iron railing, as specified by an acoustical consultant approved by the City. This solid barrier between the loading docks to the south of the Hill Street building and the exterior livable space would reduce noise levels by 7 (wood) to 10 (Plexiglas) dB(A).[35] The acoustical consultant shall specify whether exterior livable space on additional floors would require mitigation prior to the issuance of building permits.

MM-N-2. All private interior livable space, located on floors 2 through 5 at the Hill Street building fronting the southern boundary, shall be required to incorporated construction techniques to reduce interior noise levels to 45 dB(A) or less, as specified by an acoustical consultant approved by the City. Example techniques that may be applied include, but are not limited to: attaching interior sheet rock of the exterior walls assemblies to studs by resilient channels, the staggering of studs or double walls; providing window assemblies with a laboratory tested STC rating of 30 or greater; baffling roof or attic vents facing the noise source, etc. The acoustical consultant shall specify whether interior livable space on additional floors would require mitigation prior to the issuance of building permits.

e. Adverse Effects

Construction-Related Effects

Construction impacts would be less than significant.

Operational Effects

All operational impacts would be less than significant or could be mitigated to a less than significant level, except for operational impacts associated with the Hill Street building. Interior noise levels in the residential units at the Hill Street building would remain above 45 dB(A) due to operations at loading docks even with the inclusion of mitigation. Therefore, this impact would be significant and unavoidable.

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35 Canter, Larry W. "Prediction and Assessment of Impacts on the Noise Environment." Environmental Impact Assessment, 1996.