Appendix C Noise Technical Report

CITY OF COSTA MESA
125 EAST BAKER STREET APARTMENTS PROJECT
Noise Technical Report

SCH No. 2013081051

Prepared for
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CHAPTER 1 **Summary**

This report assesses potential noise and vibration impacts associated with the implementation of the 125 E. Baker Street Apartment Project, herein referred to as the project. The project consists of a 4.17-acre property, generally bounded by State Route 55 (SR-55), Baker Street, and Pullman Street in the city of Costa Mesa, Orange County. This report examines the impacts of the project on noise-sensitive uses in the area, as well as the new noise receptors that would be introduced with implementation of the proposed project, and identifies mitigation measures to address significant noise impacts.

Operation of the project would have the potential to expose on-site sensitive noise receptors to excessive noise levels related to traffic noise. Mitigation measure MM-NOI-1 would reduce impacts to a less-than-significant level. The increase in traffic noise associated with the proposed project would not result in a significant direct or cumulative impact. Short-term groundborne vibration increases from construction equipment would have the potential disturb nearby vibration sensitive manufacturing uses. Mitigation measure MM-NOI-2 would reduce impacts to a less-than-significant level. Impacts related to temporary increases in noise level during construction and exposure of future residents to aircraft noise would be less than significant.

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CHAPTER 2 **Project Description**

The project site is a 4.17-acre property, generally bounded by SR-55, Baker Street, and Pullman Street in the city of Costa Mesa, Orange County. The project location is shown in Figure 1 (Regional Location). The project proposes a five-story 240-unit residential development that wraps around a six-level covered parking structure with 465 parking spaces. The total proposed livable area is 216,521 square feet (sf). Since the apartments are planned to be marketed to professionals in the area, they would mostly be comprised of studios, one-bedroom and two-bedroom units. The proposed breakdown of units is as follows: 26 studio and studio+loft units (10.8 percent); 117 one-bedroom and one-bedroom+loft units (48.8 percent); 85 two-bedroom and two-bedroom+loft units (35.4 percent); and, 12 three-bedroom and three-bedroom+loft units (5 percent). On-site amenities would include common open space and recreation areas, a pool, and a clubhouse. A conceptual site plan is shown in Figure 2 (Architectural Site Plan). Conceptual elevations are shown in Figure 3 (North and West Conceptual Elevation) and Figure 4 (South and East Conceptual Elevation). A floor plan for the project is provided in Figure 5 (Proposed Floor Plan). As shown in this figure, the residential units adjacent to SR-55 would be separated from SR-55 by a common walkway corridor. This corridor would be enclosed and windows would be fixed to remain shut. The main vehicular entrance and secondary exit to the site and parking structure is proposed from Pullman Street. Existing on-site landscaping consists of trees and small shrubs along the boundaries of the project site and building. Landscaping is proposed around the perimeter of the project site, entrance and surface parking area, courtyard, and pool area. The proposed project would require approval of a General Plan Amendment to change the land use designation from Industrial Park to High Density Residential and change the zoning from Commercial Limited (CL) to Planned Development Residential – High Density (PDR-HD).

Construction of the proposed project is anticipated to require a maximum of 21 months and a total of 4.17 acres would be disturbed. Construction phases would involve demolition of the existing on-site 66,000 sf two-story office building, grading, construction of proposed garage and building construction, and internal and external painting. Demolition would be completed in 2 months and grading would be completed in 1 month. Garage construction and building construction would be completed in 5 months and 12 months, respectively. Construction would overlap for three months. Painting would be completed in 5 months. Standard construction equipment would be required, including loaders, dozers, scrapers, backhoes, rollers, and dump trucks.

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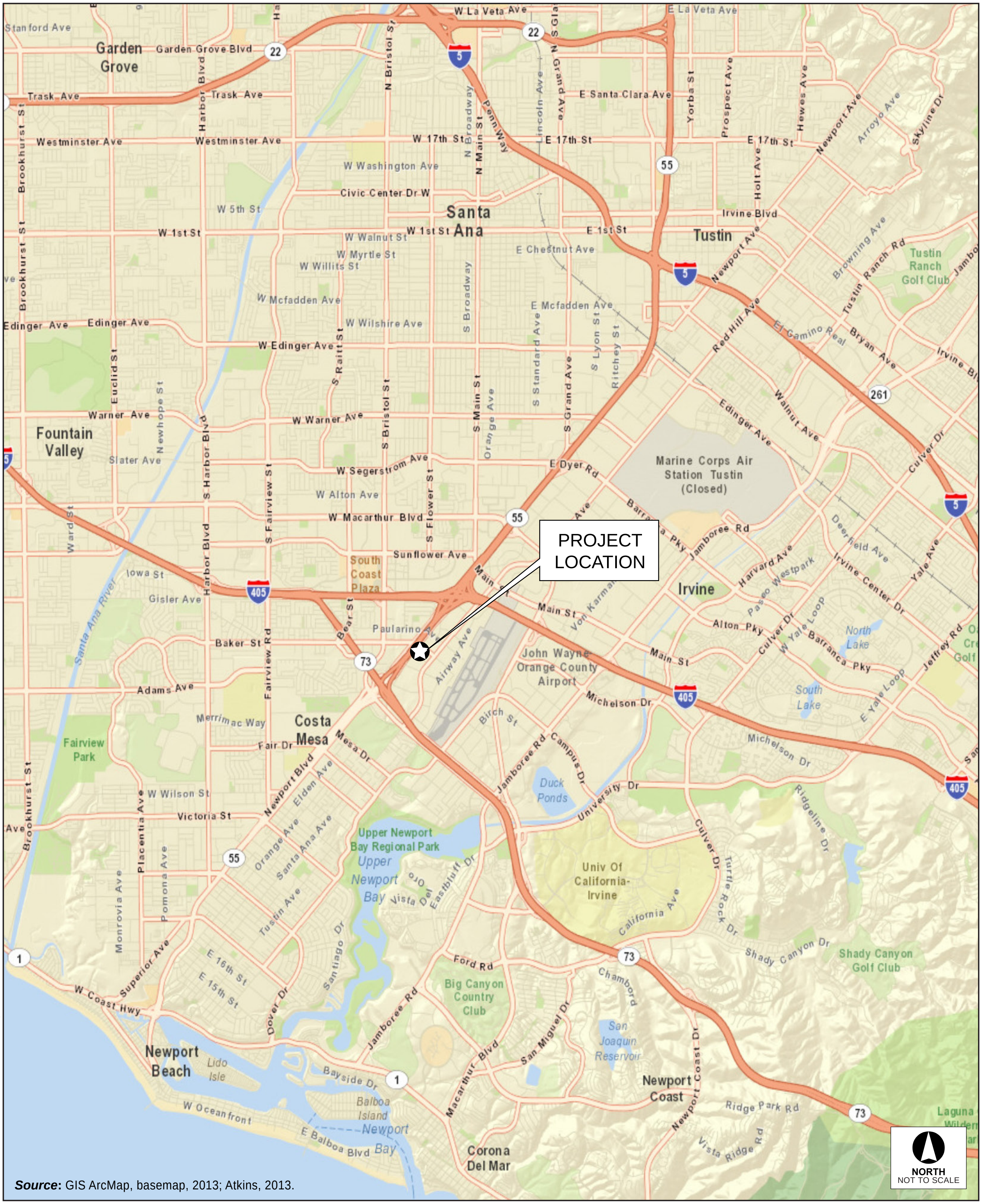

Source: GIS ArcMap, basemap, 2013; Atkins, 2013.

Figure 1
Regional Location

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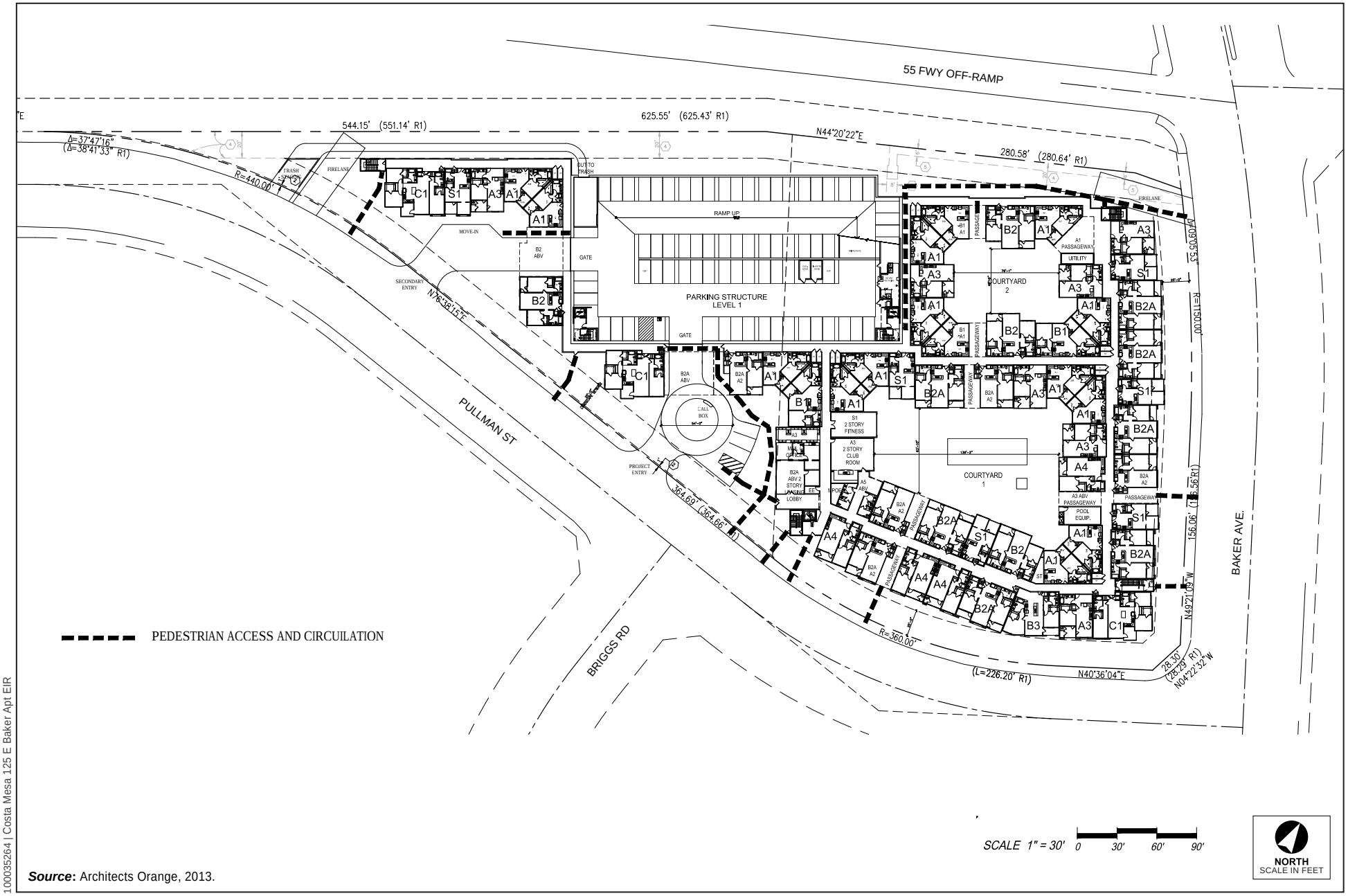

***Source*:** Architects Orange, 2013.

Figure 2
Architectural Site Plan

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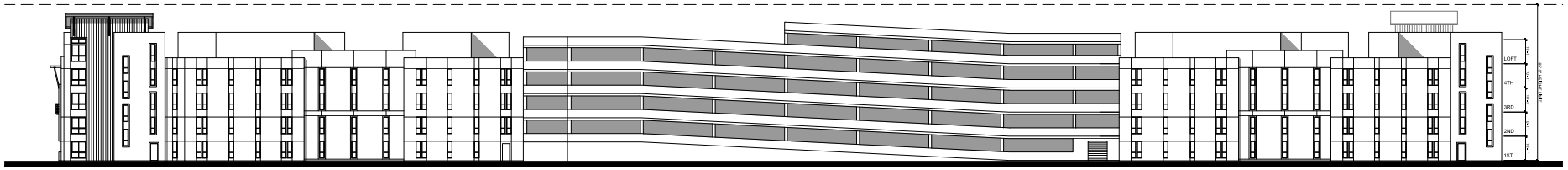
NORTH ELEVATION - BAKER ST.



WEST ELEVATION - 55 FWY OFF RAMP

0 20 40 60

***Source*:** Architects Orange, 2013.

Figure 3
North and West Conceptual Elevation

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SOUTH ELEVATION

EAST ELEVATION - PULLMAN ST.

0 20 40 60

***Source*:** Architects Orange, 2013.

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Figure 4

South and East Conceptual Elevation

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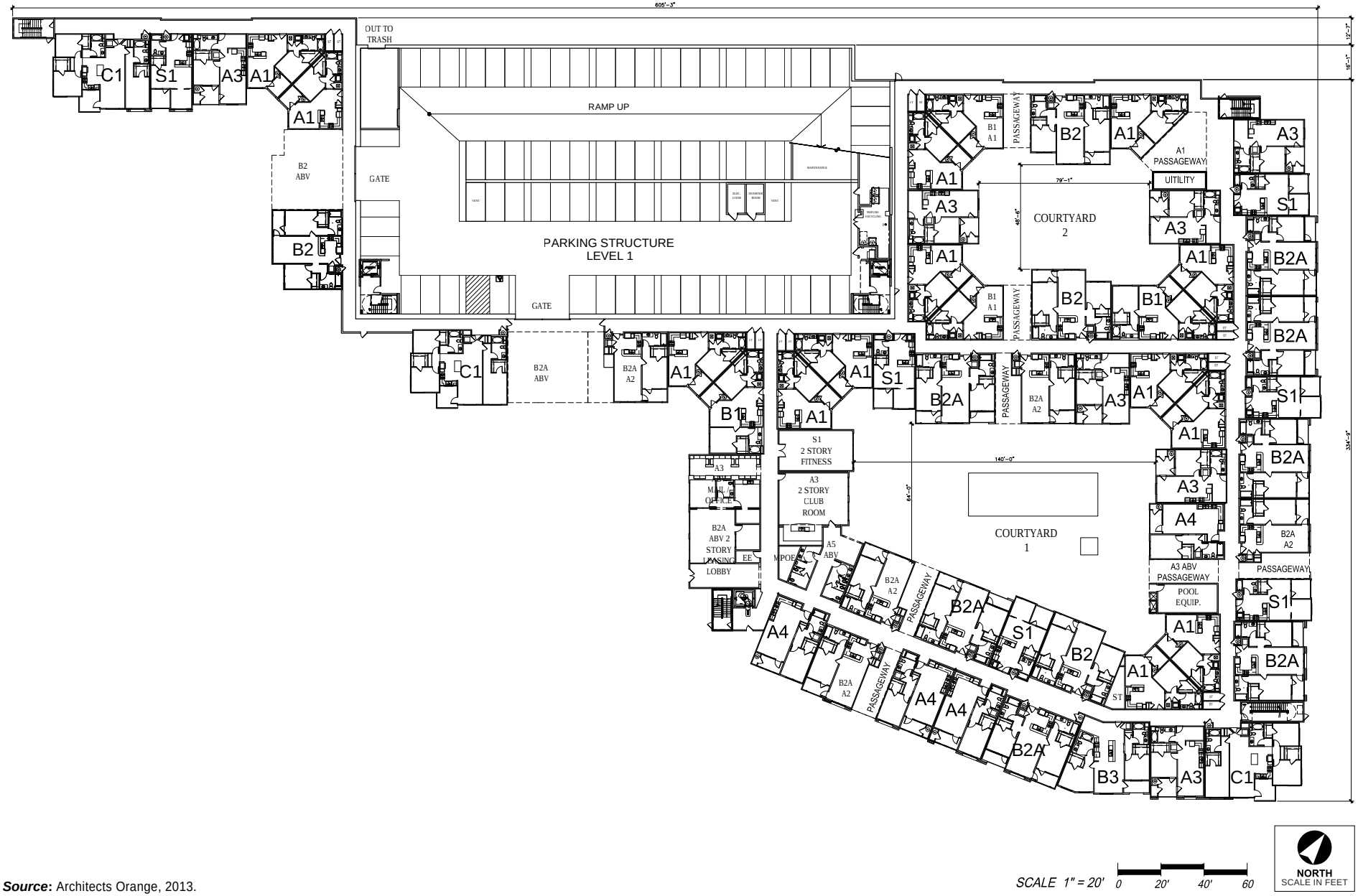

SCALE 1" = 20' 0 20' 40' 60

NORTH SCALE IN FEET

***Source*:** Architects Orange, 2013.

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Figure 5

Proposed Floor Plan

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CHAPTER 3 Environmental Setting

3.1 NOISE BASICS

3.1.1 Quantification of Noise

Noise is commonly defined as unwanted sound. Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). Sound pressures in the environment have a wide range of values and the sound pressure level was developed as a convenience in describing this range as a logarithm of the sound pressure. The sound pressure level is the logarithm of the ratio of the unknown sound pressure to a reference quantity of the same kind. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, the raw sound pressure level is adjusted with an A-weighting scheme based on frequency that is stated in units of decibels (dBA). Typical A-weighted noise levels are listed in Table 1 (Typical A-Weighted Noise Levels).

A given level of noise may be more or less tolerable depending on the sound level, duration of exposure, character of the noise sources, the time of day during which the noise is experienced, and the activity affected by the noise. For example, noise that occurs at night tends to be more disturbing than that which occurs during the day because sleep may be disturbed. Additionally, rest at night is a critical requirement in the recovery from exposure to high noise levels during the day. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects anticipated from these activities. For example, some indices consider the 24-hour noise environment of a location by using a weighted average to estimate its habitability on a long term basis. Other measures consider portions of the day and evaluate the nearby activities affected by it as well as the noise sources. The most commonly used indices for measuring community noise levels are the Equivalent Energy Level (L_{eq}), and the Community Noise Equivalent Level (CNEL).

- **L_{eq}**, the equivalent energy level, is the average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 15 minutes, 1 hour, or 8 hours. It is the decibel sound level that contains an equal amount of energy as a fluctuating sound level over a given period of time.
- **CNEL**, community noise equivalent level, is the average equivalent A-weighted sound level over a 24-hour period. This measurement applies weights to noise levels during evening and nighttime hours to compensate for the increased disturbance response of people at those times. CNEL is the equivalent sound level for a 24-hour period with a +5 dBA weighting applied to all sound occurring between 7:00 PM and 10:00 PM and a +10 dBA weighting applied to all sound occurring between 10:00 PM and 7:00 AM Similar to the CNEL, L_{dn}, the day-night average noise level is a 24-hour average L_{eq} with a +10 dBA weighting applied to noise during the hours of 10:00 PM to 7:00 AM L_{dn} and CNEL are typically within 1 dBA of each other and, for most intents and purposes, are interchangeable.

Table 1 Typical A-Weighted Noise Levels

Common Outdoor Activities	*Noise Level (dBA)*	*Common Indoor Activities*
	— 110 —	Rock band
Jet fly-over at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

SOURCE: Caltrans, *Technical Noise Supplement—A Technical Supplement to the Traffic Noise Analysis Protocol* (October 1998).

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Sound that originates from a linear, or "line" source such as a heavily traveled traffic corridor, attenuates by approximately 3 dBA per doubling of distance, provided that the surrounding site conditions lack ground effects or obstacles that either scatter or reflect noise. Noise from roadways in environments with major ground effects due to vegetation and loose soils may either absorb or scatter the sound yielding attenuation rates as high as 4.5 dBA for each doubling of distance. Other contributing factors that affect sound reception include meteorological conditions and the presence of manmade obstacles such as buildings and sound barriers. Barriers between a noise source and a receiver can substantially reduce noise levels at the receiver. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dBA of noise reduction. Taller barriers provide increased noise reduction (Caltrans 2008).

3.1.2 Noise Effects

Noise has a significant effect on the quality of life. An individual's reaction to a particular noise depends on many factors such as the source of the noise, its loudness relative to the background noise level, and the time of day. The reaction to noise can also be highly subjective; the perceived effect of a particular noise can vary widely among individuals in a community. Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 5 dBA change in community noise levels is clearly noticeable, and a 3 dBA change is the smallest increment that is perceivable by most receivers. Generally, 1 to 2 dBA changes are not detectable. Although the reaction to noise may vary, it is clear that noise is a significant component of the environment, and excessively noisy conditions can affect an individual's health and well-being. The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on a community can be organized into six broad categories: sleep disturbance, permanent hearing loss, human performance and behavior, social interaction or communication, extra-auditory health effects, and general annoyance.

3.2 ENVIRONMENTAL VIBRATION BASICS

Vibration is defined as any oscillatory motion induced in a structure or mechanical device as a direct result of some type of input excitation. Vibration consists of waves transmitted through solid material. There are several types of wave motion in solids, unlike in air, including compressional, shear, torsional, and bending. The solid medium can be excited by forces, moments, or pressure fields. This leads to the terminology of "structure-borne/ground-borne" vibration.

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Soil properties also affect the propagation of vibration. When groundborne vibration interacts with a building there is usually a ground-to-foundation coupling loss, but the vibration can also be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows or items on shelves or the motion of building surfaces. The vibration of building surfaces can also be radiated as sound and heard as a low-frequency rumbling noise, known as groundborne noise.

Ambient and source vibration information for this study are expressed in terms of the peak particle velocity (PPV) in inches per second (in/sec) that correlates best with human perception. The particle velocity is the velocity of the soil particles resulting from a disturbance. Agencies such as California Department of Transportation (Caltrans) use the PPV descriptor because it correlates well with damage or complaints. Caltrans estimates that the threshold of perception is approximately 0.006 in/sec PPV and the level at which continuous vibration begins to annoy people is approximately 0.010 in/sec PPV.

3.3 REGULATORY FRAMEWORK

3.3.1 Federal

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), Code of Federal Regulations (CFR) Title 14, Part 150, prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 dBA L_{dn} (or CNEL) are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{dn} (or CNEL).

Federal Highway Administration Standards

CFR Title 23, Part 772, sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the Department of Transportation Federal Highway Administration (FHWA). The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with the Department of Transportation FHWA Noise Standards. Title 23 establishes 67 dBA as the worst-case hourly average noise level standard for impacts of federal highway projects to land uses including residences, recreational uses, hotels, hospitals, and libraries (23 CFR Chapter 1, Part 772, Section 772.19).

Federal Transit Administration Standards and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (May 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures from groundborne vibration is 0.2 in/sec PPV.

3.3.2 State

California Noise Control Act of 1973

California Health and Safety Code Sections 46000 through 46080, known as the California Noise Control Act of 1973, finds that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Noise Insulation Standards (California Code of Regulations, Title 24)

Title 24 establishes an interior noise standard of 45 dBA for multi-family residential structures.

3.3.3 Local

City of Costa Mesa General Plan

The General Plan Noise Element establishes noise and land use compatibility standards and outlines goals and policies to achieve these standards. The Noise Compatibility Guidelines listed in Table 2 (City of Costa Mesa Noise Compatibility Guidelines) are used to determine the compatibility of land uses when evaluating proposed development projects. A land use located in an area identified as "normally acceptable" indicates that standard construction methods would attenuate exterior noise to an acceptable indoor noise level and that people can conduct outdoor activities with minimal noise interference. Land uses that fall into the "conditionally acceptable" noise environment should prepare an acoustical study that considers the type of noise source, the sensitivity of the noise receptor, and the degree to which the noise source has the potential to interfere with sleep, speech, or other activities characteristic of the land use. For land uses where the exterior noise level falls within the "conditionally unacceptable" range, new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made with noise insulation features included in the design. For land uses where the exterior noise levels fall within the "clearly unacceptable" range, new construction generally should not be undertaken. Noise Element Policy N-1A.2 establishes 65 dBA CNEL as the maximum acceptable exterior noise level for residential areas. Although not specified in the General Plan, the City recognizes the unique urban environment in which multi-family residential projects are typically located and exempts private outdoor balconies and patios, internal courtyards, and recreational areas of multi-family residential development from this exterior noise standard, similar to the exemption from the City's Noise Ordinance (described below).

Table 2 City of Costa Mesa Noise Compatibility Guidelines

Land Use Category	*Community Noise Exposure* L_{dn} *or CNEL, dBA*			
	Normally Acceptable	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*
Residential—Single family, Duplex, Mobile Home	50–60	60–70	70–75	75–85
Residential—Multi-family, Residential Mixed Use	50–65	65–70	70–75	75–85
Transient Lodging, Motels, Hotels	50–65	65–70	70–80	80–85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–60	60–65	65–80	80–85
Auditoriums, Concert Halls, Amphitheaters	NA	50–70	NA	70–85
Sports Arena, Outdoor Spectator Sports	NA	50–75	NA	75–85
Playgrounds, Neighborhood Parks	50–67.5	NA	67.5–75	75–85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–70	NA	70–80	80–85
Office Buildings, Business Commercial, Professional	50–67.5	67.5–77.5	77.5–85	NA
Industrial, Manufacturing, Utilities, Agriculture	50–70	70–80	80–85	NA

SOURCE: City of Costa Mesa, *City of Costa Mesa 2002 General Plan Environmental Impact Report* (January 22, 2002).

NORMALLY ACCEPTABLE—Specified land use is satisfactory, based upon the assumption that 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.

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 with noise insulation features included in the design.

CLEARLY UNACCEPTABLE—New construction or development clearly should not be undertaken.

General Plan Noise Policy N-1A.7 addresses airport noise. This policy discourages locating sensitive land uses in the 65 dBA CNEL noise contour of the John Wayne Airport (JWA). Should it be deemed by the City as appropriate and/or necessary for a sensitive land use to locate in the 65 dBA CNEL noise contour, ensure that appropriate interior noise levels are met and that minimal outdoor activities are allowed.

City of Costa Mesa Municipal Code Title 13, Chapter XIII, Noise Control (Noise Ordinance)

The purpose of the Noise Ordinance is to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power. The ordinance is designed to control unnecessary, excessive and annoying sounds generated on one piece of property from impacting an adjacent property, and to protect residential areas from noise sources other than roadways. The City Noise Ordinance establishes outdoor and indoor noise standards for residential land use, which are provided in Table 3 (City of Costa Mesa Residential Exterior and Interior Sound Limit Levels).

Table 3	**City of Costa Mesa Residential Exterior and Interior Sound Limit Levels**	
Time Period	***Exterior Noise Level Limit[a]***	***Interior Noise Level Limit[b]***
7:00 AM to 11:00 PM	55	55
11:00 PM to 7:00 AM	50	45

SOURCE: *City of Costa Mesa Municipal Code* Section 13-280 (Exterior Noise Standards) and Section 13-281 (Interior Noise Standards).

a. It is unlawful to causes the noise level to exceed (1) the noise standard for a cumulative period of more than 30 minutes in any hour; (2) the noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour; (3) the noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour; (4) the noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour; or (5) the noise standard plus 20 dBA for any period of time. The sound level limit does not apply to private balconies or patios and internal courtyards or recreation areas of multi-family residential development.

b. It is unlawful to causes the noise level to exceed (1) the interior noise standard for a cumulative period of more than 5 minutes in any hour; (2) the interior noise standard plus 5 dBA for a cumulative period of more than 1 minute in any hour; or (3) the interior noise standard plus 10 dBA for any period of time.

Section 13-279 (Exceptions for Construction)

The noise level limits in the Noise Ordinance do not apply to construction equipment, vehicles, or work between the following approved hours, provided that all required permits for such construction, repair, or remodeling have been obtained from the appropriate city departments. The approved hours for construction are provided in Table 4 (Hours for Construction Activities).

Table 4	**Hours for Construction Activities**
Allowable Hours	***Applicable Days***
7:00 AM–7:00 PM	Mondays through Fridays
9:00 AM–6:00 PM	Saturdays
Prohibited all hours	Sundays and the following specified federal holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

SOURCE: *City of Costa Mesa Municipal Code* Section 13-279 (Exceptions for Construction).

Section 13-282 (Noise Near Schools, Hospitals, Churches)

This section states that the exterior sound level limits for residences listed in Table 3 also apply to schools, hospitals, and churches. Noise levels that unreasonably interfere with the working of such installations are also prohibited.

Section 13-283 (Loud, Unnecessary Noise)

It shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area, regardless of whether the noise level exceeds the standards specified in Section 13-280 (Exterior Noise Standards) and Section 13-281 (Interior Noise Standards) (see Table 3).

3.4 EXISTING NOISE ENVIRONMENT

Existing noise sources that affect the project site are described below.

3.4.1 Operational Noise Sources

The approximately 4.17-acre project site is currently occupied by a 66,000 sf two-story office building. Uses to the north, east, and south of the site include office complexes and light industrial parks. Businesses in the developments surrounding the site include general office use, medical offices, small distribution facilities, a church, and small manufacturing facilities. General office use is not a source of substantial operational noise. Medical offices, churches, and distribution facilities generally do not require machinery that would generate noise levels beyond those typical of general office use. The church includes a preschool with an outdoor playground that intermittently results in noise from children playing. The small distribution facilities would generate heavy duty truck trips on a regular basis, but do not have the loading docks or other access necessary to accommodate the truck traffic typical of a distribution center. The small manufacturing uses would have the potential to generate operational noise from the use of heavy machinery. The manufacturing use located closest to the project site is AZ Manufacturing, located approximately 100 feet south of the site on Pullman Street. Occasional nuisance noise may also result from surrounding parking lots, such as loud music or car alarms.

3.4.2 Existing Noise Levels

A daytime ambient sound level survey was conducted on June 19, 2013, to quantify the noise environment on the project site and in the surrounding area. An evening ambient sound level survey was also conducted on July 15, 2013. A Larson Davis 814 ANSI (American National Standards Institute) Type I Integrating Sound Level Meter calibrated with a Larson Davis CAL200 calibrator was used to record ambient sound levels. Daytime weather conditions during the measurements were calm with a warm temperature and partly cloudy to clear skies. A total of four daytime and four nighttime measurements were taken. The monitoring locations are shown on Figure 6 (Surrounding Land Uses and Noise Measurement Locations). The daytime measurements were taken between 11:30 AM to 1:30 PM and were 15 minutes in duration. The nighttime measurements were also 15 minutes in duration and were taken between 11:00 PM and 12:30 AM. Table 5 (Ambient Sound Level Measurements, dBA) summarizes the measured L_{eq} and noise sources for the monitoring locations.

Table 5 Ambient Sound Level Measurements, dBA

Site	*Location*	*Daytime Measurement*			*Nighttime Measurement*		
		Daytime Noise Sources	*Start Time*	*L_{eq}*	*Nighttime Noise Sources*	*Start Time*	*L_{eq}*
1	Southeast intersection of Pullman St and Briggs Ave	Traffic on Briggs Ave, Pullman St, and SR-55	11:55 AM	65.8	Traffic on Briggs Ave and Pullman St	11:01 PM	56.0
2	102 Baker St in front of River Church of OC	Traffic on Baker St and SR-55	12:17 PM	70.5	Traffic on SR-55	11:21 PM	59.2
3	Existing parking lot on the west side of the project site	Traffic on SR-55	12:38 PM	68.1	Traffic on SR-55	11:41 PM	62.2
4	3100 Pullman St of the northeast corner of Fischer/Pullman St	Traffic on Pullman St and SR-55	1:00 PM	70.5	Traffic on SR-55	12:02 AM	61.5

SOURCE: Atkins (June 19, 2013 [daytime] and July 15, 2013 [nighttime]).
Ambient measurements were 15 minutes in duration.

***Source*:** GIS ArcMap, basemap, 2013; Atkins, 2013.

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Figure 6

Surrounding Land Uses and Noise Measurement Locations

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The results of the ambient noise survey reflect daytime noise levels between 65 and 71 dBA and nighttime noise levels between 56 and 62 dBA on the project site and in the surrounding area (see Appendix A for measurement results). The primary noise source at all locations was traffic, particularly SR-55. Based on the Costa Mesa noise compatibility guidelines, noise levels on the main site are conditionally compatible with residential land use.

3.4.3 Transportation Noise Sources

Aviation

The nearest airport to the project site is JWA, located approximately 0.5 mile southwest of the project site. The airport served approximately 171,873 annual operations in 2012 (JWALUC 2013). As shown in Figure 7 (John Wayne Airport Noise Contours), the project site is not located within the 60 dBA CNEL noise contour of the JWA (JWALUC 2010). There are no private use airstrips in the vicinity of the project. Four private heliports are located in Coast Mesa north of SR-55. These heliports do not generate substantial noise in the city (Costa Mesa 2002b).

Roadways

The main portion of the project site is bounded by SR-55 on the north and west, Baker Street on the north, and Pullman Street on the east and south. Existing noise levels were modeled using the FHWA Traffic Noise Model (TNM), Version 2.5. This model takes into account traffic volumes, vehicle mix, and existing site topography and structures. The freeway is located at grade with project site and the southern end of the project site, and increases in elevation to the north to a bridge crossing over Baker Street. As shown in Figure 8 (Receptor Locations), existing noise levels were modeled at five receptor locations on the project site and three locations off site that represent existing commercial industrial development. Table 6 (Existing Roadway Noise Levels) shows the existing noise levels generated by the roadways on the project site and properties surrounding the project site. The City of Costa Mesa considers roadway noise levels up to 60 dBA CNEL to be normally compatible with churches, noise levels up to 65 dBA CNEL to be normally compatible with residences, and noise levels up to 67.5 dBA CNEL to be normally compatible with commercial, office, and industrial development. As shown in Table 6, noise levels in the project area currently exceed the normally compatible noise standards for residences and churches. Noise levels on the eastern side of the project site are less than 65 dBA CNEL due to attenuation from the existing structure. Noise levels in the surrounding commercial and industrial areas are below the normally acceptable standard for these uses.

Railroads

Costa Mesa and the project site are not serviced by a railroad line. The closest rail line is the Metrolink rail line, which runs generally north-south through Orange County along Interstate 5. The closest portion of the rail line is approximately 5 miles west of the project site. Due to distance, the rail line does not generate noise that is audible at the project site. Rail noise is not an existing noise issue in Costa Mesa (Costa Mesa 2002a).

Table 6 Existing Roadway Noise Levels

Receptor No.	*Receptor Location*	*Existing Peak Noise Hour Level (L_{eq})*	*Existing Ambient Noise Level (dBA CNEL)*[a]	*Exceeds Noise Compatibility Standard?*[b]
1	Proposed southwest edge of residential structure	73	74	**Yes**
2	Proposed northwest edge of residential structure	71	72	**Yes**
3	Proposed northeast edge of residential structure	68	69	**Yes**
4	Proposed residential units along Pullman St, northeast of leasing office	63	64	No
5	Midpoint of project boundary along Baker St	69	70	**Yes**
6	River Church of OC	71	72	**Yes**
7	Light industrial use at northeast corner of Pullman St/Briggs Ave intersection	62	63	No
8	Light industrial use at southeast corner of Pullman St/Briggs Ave intersection	65	66	No

SOURCE: Linscott, Law & Greenspan Engineers, *Traffic Impact Analysis Report, 125 Baker Street Apartments, Costa Mesa, California* (May 14, 2013) [traffic data];
Caltrans, *2011 Traffic Volumes on the California State Highway System* (August 2012) [traffic data];
Caltrans, *2011 Annual Average Daily Truck Traffic on the California State Highway System* (2012) [traffic data];
Caltrans, *Peak Hour Volume Data* (June 29, 2012) [traffic data];
Federal Highway Administration, *Traffic Noise Model*, Version 2.5 (February 2004) [noise level estimates].

See appendix for noise model assumptions and output.

a. Calculated peak hour noise level was used to determine CNEL using the equation recommended by Caltrans (Technical Noise Supplement page 2-60).

b. Normally acceptable noise standard is 60 dBA CNEL for churches, 65 dBA CNEL for residences and 67.5 dBA CNEL for commercial and industrial uses.

3.4.4 Noise Sensitive Land Uses

Noise sensitive land uses (NSLU) are land uses that may be subject to stress and/or interference from excessive noise. The Costa Mesa General Plan identifies the following as NSLU: schools, residences, churches, hospitals, and similar facilities. Industrial and commercial land uses are generally not considered sensitive to noise. The term "noise receptor" is often used to represent a specific location where individuals would be exposed to noise, such as a specific residence. The nearest NSLU to the project site are the two high density residential complexes (Newport Village Apartments and Eaves South Coast Apartments) located west of SR-55, approximately 450 feet from the project site. The nearest sensitive noise receptor is the River Church of OC, located approximately 80 feet north of the project site, across Baker Street. The locations of these NSLU are identified on Figure 5.

Source: is John Wayne Airport Land Use Commission 2010.

Figure 7

John Wayne Airport Noise Contours

ATKINS

***Source*:** GIS ArcMap, basemap, 2013; Atkins, 2013.

Figure 8
Receptor Locations

ATKINS

100035264 | Costa Mesa 125 E Baker Apt EIR

3.4.5 Vibration Sensitive Land Uses

Land uses in which groundborne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations are considered "vibration-sensitive" (FTA 2006). The degree of sensitivity depends on the specific equipment that would be affected by the groundborne vibration. The commercial and industrial development surrounding the project site to the east and south includes manufacturing facilities that may be vibration sensitive. Excessive levels of groundborne vibration of either a regular or an intermittent nature can result in annoyance to residential uses.

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CHAPTER 4 Methodology and Significance Criteria

4.1 METHODOLOGY

4.1.1 Excessive Noise Levels

Impacts related to potential exposure of NSLU to excessive noise levels as a result of the operation of the project are assessed based on a comparison of existing surrounding land uses to the noise levels potentially generated by the proposed land uses. Estimated noise levels are based on a variety of sources, including noise technical reports for similar facilities. Noise levels at a particular receptor from a stationary noise source are based on an attenuation rate of 6 dBA for every doubling of distance.

Impacts related to exposure to traffic noise were modeled using the TNM noise model. The TNM model, developed by the FHWA, models peak hour noise levels and takes into account area topography and intervening structures. Traffic volumes on SR-55 for existing traffic volumes are based on data from Caltrans. Total daily traffic for SR-55 south of the Interstate 405 interchange was obtained from the 2011 Traffic Volume on the California State Highway System publication (Caltrans 2012a). The 2011 Annual Average Daily Truck Traffic on the California State Highway System publication was utilized to determine the percentage of trips attributable to medium-duty and heavy-duty trucks (Caltrans 2012b). Caltrans's Peak Hour Volume Data was utilized to determine the percentage of total trips that would occur during the peak hour (Caltrans 2012c). Based on the Peak Hour Volume Data, a maximum of approximately 7.7 percent of daily trips occur during the peak hour on SR-55. The increase in trips that would occur by the future (Year 2025) scenario was estimated using the increase in trips projected to occur in Orange County between the most recent data year (2011) and 2025 by the California Air Resources Board EMFAC2011-SG model (Version 1.1).

The peak hour traffic volumes for the local streets surrounding the project site were provided for use in the traffic impact analysis prepared for the project (LLG 2013). The project would generate more trips during the PM Peak Hour than the AM Peak Hour; therefore, the PM Peak Hour is conservatively assumed for this analysis.

4.1.2 Groundborne Vibration

Groundborne vibration impacts are assessed based on screening distances determined by Caltrans. According to Caltrans, major construction activity within 200 feet may be potentially disruptive to sensitive operations (Caltrans 2002). The FTA damage thresholds indicate that, for buildings not extremely sensitive to vibration, a damage threshold for PPV between 0.2 in/sec to 0.5 in/sec would apply depending on the type of building.

4.1.3 Permanent Increase in Ambient Noise

The potential for implementation of the project to permanently increase ambient noise levels as a result of increased traffic noise is assessed as using the TNM noise model, as described above, for the Existing + Project and Future (Year 2025) scenarios. Year 2025 is the year estimated for General Plan Buildout, and associated increase in regional traffic, assumed for the long-term future analysis in the traffic impact analysis. Other potential sources of operational noise from the project are addressed under Issue 1, Excessive Noise Levels.

4.1.4 Temporary Increase in Ambient Noise

Impacts related to temporary increases in ambient noise levels from construction of the proposed project access road and police facility are assessed using estimates of sound levels from typical construction equipment provided by the FHWA in the Roadway Construction Noise Model (FHWA 2008), assuming an attenuation rate of 6 dBA per doubling of distance from the source.

4.1.5 Aircraft Noise

Impacts related to aircraft noise are assessed based on the noise contours published for JWA (JWALUC 2010).

4.2 SIGNIFICANCE CRITERIA

Based on CEQA Guidelines Appendix G, implementation of the project would result in a significant adverse impact if it would:

- **Threshold 1**—Expose persons to or generate noise levels in excess of standards established in the Costa Mesa General Plan or Noise Ordinance.
- **Threshold 2**—Expose persons to or generate excessive groundborne vibration, which is defined as groundborne vibration equal to or in excess of 0.2 in/sec PPV. Construction activities within 200 feet of a vibration sensitive use would be potentially disruptive to vibration-sensitive operations (Caltrans 2002).
- **Threshold 3**—Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. A substantial permanent increase in traffic noise would occur if the project would result in an increase in noise level of 3 dBA CNEL or more.
- **Threshold 4**—Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Construction noise would be considered significant if it would take place outside of the allowed hours, listed in Table 4.
- **Threshold 5**—For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public use airport or private airstrip, expose people residing or working in the project area to excessive noise.

CHAPTER 5 Impact Analysis and Mitigation Measures

5.1 IMPACT ANALYSIS

5.1.1 Issue 1: Excessive Noise Levels

Impact Analysis

This section addresses the potential for sensitive receptors to be exposed to excessive noise levels from the proposed project, followed by a discussion of the potential for the proposed residences to be exposed to excessive noise levels from the surrounding area. The potential for a permanent increase in noise levels that would occur as a result of increased traffic on roadways is addressed in Section 5.1.3 (Issue 3: Substantial Permanent Increase in Noise Levels).

Impacts to Off-Site Uses

Operational Noise

A total of 240 multi-family residences would be developed on the project site. Noise generated from residential uses is generally described as nuisance noise. Nuisance noise is defined as intermittent or temporary neighborhood noise from sources such as amplified music, and barking dogs that may be disturbing to other residents. Costa Mesa Municipal Code Section 13-283 prohibits nuisance noise, referred to as loud, unnecessary noise, at any time which causes discomfort or annoyance to reasonable persons of normal sensitivity, regardless of the noise level limits specified in Table 3. Compliance with the Noise Ordinance would limit exposure to excessive nuisance noise. The Costa Mesa Police Department enforces the nuisance noise provisions of the Noise Ordinance. Additionally, nuisance noises would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect the receptors at the same time. Instances of nuisance noise would be addressed on an individual case basis by the Costa Mesa Police Department. Therefore, nuisance noise from the proposed residence would not result in significant impact.

Noise sources from the proposed parking structure would include car alarms, door slams, radios, and tire squeals. These sources typically range from about 30 to 66 dBA at a distance of 100 feet (Gordon Bricken & Associates 1996), and are generally short-term and intermittent. Parking lots also have the potential to generate noise levels that exceed City's noise level limits depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect noise-sensitive receptors at the same time. The parking structure would be shielded from surrounding development by the residential structure, and would be separated from the nearest residential development by SR-55. Additionally, ambient noise levels surrounding the project site are generally between 65 and 71 dBA during the day and between 56 and 62 dBA during evening hours. Therefore,

due to shielding and ambient noise, intermittent noise generated from parking lots would generally not be audible at surrounding land uses and impacts would be less than significant.

Regular landscape maintenance would be required on the project site. Maintenance activities would include the use of gasoline-powered mowers, trimmers, and blowers, which would result in intermittent short-term temporary noise increases. However, the site is currently landscaped and maintenance regularly occurs on site. Maintenance noise generated by the project would be similar to existing noise. Additionally, maintenance equipment would not be operating at any one location for more than a few minutes and it is unlikely that several pieces of equipment would be operating simultaneously in one location. Therefore, implementation of the proposed project would not result in a significant increase in noise from landscape maintenance activities.

Noise from the open space areas would generally be limited to normal conversation. Additionally, the active use areas, including the pool, would be located in internal courtyards and would be shielded from all surrounding land uses by the residential structure. Similar to parking lot noise, due to shielding and ambient traffic noise, intermittent use of the on-site recreational areas would not result in a significant impact.

As described above, the proposed project would not result in new sources of operational noise that would expose surrounding land uses to excessive noise levels. Impacts would be less than significant.

Traffic Noise

The proposed project would generate new vehicle trips that would have the potential to expose NSLU to excessive noise levels. Future traffic noise levels with and without the project at nearby NSLU were modeled at the River Church of OC, located approximately 80 feet from the project site across Baker Street. As shown in Table 6, the existing noise level at the River Church of OC is 72 dBA CNEL, which in considered normally unacceptable for churches. Therefore, the church is currently exposed to excessive traffic noise without project implementation. The project would result in a significant impact at the River Church of OC if it would result in an increase in roadway noise level of 3 dBA CNEL or more at the church. Future (Year 2025) traffic noise levels at River Church OC with and without the project were calculated using the TNM model. As discussed in greater detail in Section 5.1.3, future noise levels with and without the project at the church would be 73 dBA. Therefore, the proposed project would not increase exposure of the church to excessive traffic noise levels. A significant impact would not occur.

Impacts to On-Site Uses

CEQA is intended to protect the existing environment from impacts that would result from the proposed project. CEQA does not consider impacts of the existing environment on a proposed land use to be significant[1]. However, the City of Costa Mesa has established noise compatibility standards for siting of new development, as shown in Table 2. A significant land use compatibility impact would occur if the proposed project would expose new residences to noise levels in excess of the noise compatibility standards. Therefore, this potential noise-related land use impact is addressed in this analysis.

[1] *South Orange County Wastewater Authority v. City of Dana Point* (2011) 196 Cal.App.4th 1604.

Surrounding Land Uses

In addition to roadways, the project site is surrounded by commercial and light industrial development, and a church. Religious services are not sources of substantial operational noise and would not expose the proposed residences to excessive noise levels. Similar to the proposed residences, the church may result in nuisance noise. Enforcement of the Noise Ordinance would reduce nuisance noise impacts to a less than significant noise level. The church does include a preschool that is operational on weekdays from 6:30 AM to 6:00 PM and offers childcare during some church services. The preschool includes a playground located on the side of the building directly across Baker Street from the proposed project. Intermittent use of playground would generate noise from children playing. The playground is limited in size and would be in use by small children of prekindergarten age. Therefore, the playground would not support active uses typical of recess at a school play yard that would potentially result in excessive noise from children yelling or cheering. Additionally, the playground is separated from the site by Baker Street, a significant source of traffic noise, as shown in Table 6. Noise from activity at the preschool may occasionally be audible on site, but would not be significantly noticeable above traffic noise.

The surrounding commercial and industrial uses include manufacturing uses that include operation of machinery and other equipment. However, based on the existing ambient noise measurements, traffic noise in the project area dominates ambient noise levels. Machinery noise was not audible during the daytime or nighttime noise measurements, even at Location 1, which was located in front of a light manufacturing facility. Therefore, the existing manufacturing uses would not expose new residences to excessive noise levels. The proposed project would rezone the site for residential use, and new commercial and industrial facilities in the project area would be required to demonstrate compliance with the City's noise level limits for residences. Therefore, the proposed project would not be exposed to excessive noise levels from surrounding land uses.

Traffic Noise

Traffic noise is the main source of noise on the project site. Future (Year 2025) traffic noise levels at ground floor and upper level receptors on the project site are shown in Table 7 (Future [Year 2025] Traffic Noise Levels). Upper level receptors are located at approximately 4th floor level (35 feet above ground level). The project's contribution to the future increase in noise level is addressed in Section 5.1.3. The TNM modeled noise levels take into account the attenuating affects of the proposed structure. As shown in Table 7, projected noise levels on the project site range from normally acceptable (63 dBA CNEL) where attenuated by the proposed structure to clearly unacceptable (78 dBA) at upper story receivers along SR-55.

The proposed residential and parking structure provides adequate attenuation to reduce exterior noise levels at internal courtyards and residences along Pullman Street to a normally acceptable noise level at ground floor and upper story residences. The proposed structure would provide some noise attenuation of SR-55 at residences along Baker Street; however, Baker Street would generate conditionally acceptable to normally unacceptable noise levels at receptors along Baker Street and near the intersections of Baker Street and Pullman Avenue. Noise levels at receptors adjacent to SR-55 would not be attenuated by the proposed project structure and would potentially be exposed to normally unacceptable noise levels at the ground floor, and clearly unacceptable noise levels at upper stories.

Table 7 Future (Year 2025) Traffic Noise Levels

Receptor No.	*Receptor Location*	*Noise Level at Ground Floor Receptor (dBA CNEL)*	*Noise Level at Upper Level Receptor (dBA CNEL)*
1	Proposed southwest edge of residential structure	75	78
2	Proposed northwest edge of residential structure	74	78
3	Proposed northeast edge of residential structure	67	67
4	Proposed residential units along Pullman St, northeast of leasing office	63	63
5	Midpoint of project boundary along Baker St	71	72
9	Northern internal courtyard	40	Not applicable

SOURCE: Linscott, Law & Greenspan Engineers (LLG). 2013. *Traffic Impact Analysis Report, 125 Baker Street Apartments, Costa Mesa, California* (May 14, 2013) (surface street traffic data);
Caltrans, *2011 Traffic Volumes on the California State Highway System* (August 2012) [SR-55 data];
Caltrans, *2011 Annual Average Daily Truck Traffic on the California State Highway System* (2012) [SR-55 data];
Caltrans, *Peak Hour Volume Data* (June 29, 2012) [SR-55 data];
Federal Highway Administration, *Traffic Noise Model*, Version 2.5 (February 2004) [noise level estimates].
See appendix for noise model assumptions and output. Calculated peak hour noise level was used to determine CNEL using the equation recommended by Caltrans (Technical Noise Supplement page 2-60).

Common outdoor areas and private patios and balconies are exempt from exterior noise level limits; therefore, exterior noise levels in excess of the City's noise compatibility standards are not considered significant, provided that residents would not be exposed to excessive noise levels within their homes. The proposed structure is designed to provide noise attenuation on the side of the structure adjacent to SR-55 by providing a common walkway corridor between residences and SR-55. The corridor would be enclosed to provide noise attenuation and would provide an additional approximately 10 feet of setback from the freeway. However, because the exterior noise level at residences along Baker Street and SR-55 would exceed the exterior noise level limit, mitigation is required to ensure noise attenuation measures would reduce interior noise to a less-than-significant level.

Mitigation Measures

Implementation of mitigation measure MM-NOI-1 would reduce impacts to residences along SR-55 and Baker Street to a less-than-significant impact by requiring incorporation of noise attenuating features to ensure interior noise levels would be at or below 45 dBA CNEL.

MM-NOI-1 *Prior to issuance of a certificate of occupancy, the applicant shall prepare an acoustical analysis ensuring that interior noise levels due to exterior noise sources will be at or below 45 dBA CNEL in all units. One or a combination of the following measures will be incorporated as necessary to ensure interior noise will be at or below 45 dBA CNEL:*

a. Limit opening and penetrations on portions of buildings impacted by noise.

b. Apply noise insulation to walls, roofs, doors, windows, and other penetrations.

c. Install dual-paned windows. For some units, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45 dBA CNEL. Consequently, a ventilation or air conditioning system would be required for these units to provide a habitable interior environment with the windows closed.

Significance After Mitigation

Existing and future noise levels on the project site would be compatible with residences with implementation of noise attenuation. Implementation of the mitigation measure MM-NOI-1 would be required to ensure that interior noise levels would be 45 dBA CNEL or below and residents would not be exposed to excessive noise levels in their home. Therefore, with implementation of mitigation measure MM-NOI-1, impacts would be reduced to a less-than-significant level.

Cumulative Impacts

Noise is a localized phenomenon and is progressively reduced as the distance from the source increases; specifically, noise levels from stationary noise sources decrease by approximately 6 dB for every doubling of distance. Therefore, the geographic limit that would be considered for the noise cumulative analysis would include only those projects in close proximity to the project site. According to the traffic analysis, there are no approved, planned, or foreseeable projects in the area of the project site (LLG 2013). The proposed project would not generate excessive noise levels. Therefore, a significant cumulative impact would not occur.

5.1.2 Issue 2: Groundborne Vibration

■ Impact Analysis

The main concern associated with groundborne vibration from this type of project is annoyance; however, vibration-sensitive instruments and operations can be disrupted at much lower levels than would typically affect other uses. In extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. There are no existing sources of groundborne vibration surrounding the project site and the proposed residences would not be exposed to excessive groundborne vibration. Therefore, this analysis focuses on the potential for the project to generate vibration at surrounding land uses. Groundborne vibration occurring as part of the project would result from construction equipment. Following construction, the proposed residences would not generate groundborne vibration.

As a guide, major construction activity within 200 feet may be potentially disruptive to sensitive operations (Caltrans 2002). The FTA damage thresholds indicate that, for buildings not extremely sensitive to vibration, a damage threshold of between 0.2 in/sec to 0.5 in/sec would apply depending on the type of building. Construction equipment does not typically generate vibration greater than 0.2 in/sec beyond 25 feet of construction (FTA 2006). Therefore, the proposed project would not result in groundborne vibration that would have the potential to result in structural damage. However, the commercial and industrial development within 200 feet of the project site boundary to the east and south includes manufacturing facilities that may be vibration sensitive. Therefore, a potentially significant impact related to excessive groundborne vibration would occur during construction.

Mitigation Measures

Implementation of mitigation measure MM-NOI-2 would minimize temporary groundborne vibration impacts from construction activities at adjacent vibration-sensitive commercial and industrial uses that are within 200 feet of the project site.

MM-NOI-2 *For construction activities within 200 feet of existing commercial or industrial businesses, the construction contractor shall implement the following measures during construction:*

a. The construction contractor shall provide written notification to all commercial and industrial tenants at least three weeks prior to the start of construction activities within 200 feet of the receptor informing them of the estimated start date and duration of daytime vibration-generating construction activities.

b. Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.

c. Trucks shall be prohibited from idling along streets serving the construction site.

Significance After Mitigation

Implementation of mitigation measure MM-NOI-2 would reduce groundborne vibration impacts to a less significant level by requiring best management practices, and notification to receptors so that receptors can anticipate and prepare for temporary groundborne vibration.

Cumulative Impacts

Similar to noise effects, vibration is a localized phenomenon and is progressively reduced as the distance from the source increases. Therefore, the area of projects that would be considered for the vibration cumulative analysis would be only those projects close to the project site. There are no approved, planned or foreseeable projects adjacent to the project site that would generate similar vibration. Therefore, vibration generated by construction on the project site and other sites would not combine to generate cumulative vibration impacts. Once constructed, the proposed land use would not generate a significant source of vibration during normal operation. Therefore, a significant cumulative vibration impact would not occur.

5.1.3 Issue 3: Substantial Permanent Increase in Ambient Noise Levels

Impact Analysis

This section addresses the potential for implementation of the proposed project to permanently increase ambient noise levels as a result of increased traffic noise. The potential for other noise sources associated with project implementation to result in noise levels that would expose NSLU to excessive noise levels is addressed in Section 5.1.1 (Issue 1: Excessive Noise Levels).

The potential for the project to permanently increase traffic noise is addressed under the following scenarios: Existing + Project and Future (Year 2025). Year 2025 is the year assumed for General Plan buildout in the traffic analysis for the project. Traffic volumes for each roadway are included in the

appendix. Noise levels for area roadways on site and at nearby receptors were calculated using the TNM model. The modeling calculations take into account the posted vehicle speed, peak hour traffic volume, noise attenuation from on site structures, and the estimated vehicle mix. Peak hour noise level is converted CNEL using the equation recommended by Caltrans (Technical Noise Supplement page 2-60). Noise levels at distances further from the source than the specific receptor would be lower due to attenuation provided by increased distance from the noise source. Generally, noise from heavily traveled roadways would experience a decrease of approximately 3 dBA for every doubling of distance from the roadway.

Existing + Project Scenario

Existing and Existing + Project traffic noise levels are provided in Table 8 (Existing + Project Roadway Noise Levels). The Existing + Project scenario is conservative for estimating the project's contribution to area traffic noise because additional growth in the city would occur prior to completion of project construction, which would generate increased ambient traffic noise. As shown in Table 8, implementation of the proposed project would result in a 1 to 2 dBA CNEL increase at the on-site receptors located adjacent to SR-55. However, the proposed structure would provide additional noise attenuation on- and off-site and would reduce noise levels at several receptors separated from SR-55 by the proposed structure. The proposed project would not result in an increase in noise level at any off-site receptors. The proposed project would not result in an increase of 3 dBA CNEL or more at any receptor. No significant impact would occur.

Table 8 Existing + Project Roadway Noise Levels

Receptor No.	*Receptor Location*	*Existing Noise Level (dBA CNEL)*	*Existing + Project Noise Level (dBA CNEL)*	*Increase in Noise Level*	*Significant Impact?*
1	Proposed southwest edge of residential structure	74	75	+1	No
2	Proposed northwest edge of residential structure	72	74	+2	No
3	Proposed northeast edge of residential structure	69	66	-3	No
4	Proposed residential units along Pullman St, northeast of leasing office	64	63	-1	No
5	Midpoint of project boundary along Baker St	70	70	0	No
6	River Church of OC	72	72	0	No
7	Light industrial use at northeast corner of Pullman St/Briggs Ave intersection	63	63	0	No
8	Light industrial use at southeast corner of Pullman St/Briggs Ave intersection	66	64	-2	No

SOURCE: Linscott, Law & Greenspan Engineers, *Traffic Impact Analysis Report, 125 Baker Street Apartments, Costa Mesa, California* (May 14, 2013) [traffic data];
Caltrans, *2011 Traffic Volumes on the California State Highway System* (August 2012) [traffic data];
Caltrans, *2011 Annual Average Daily Truck Traffic on the California State Highway System* (2012) [traffic data];
Caltrans, *Peak Hour Volume Data* (June 29, 2012) [traffic data];
Federal Highway Administration, *Traffic Noise Model*, Version 2.5 (February 2004) [noise level estimates].

See appendix for noise model assumptions and output. Calculated peak hour noise level was used to determine CNEL using the equation recommended by Caltrans (Technical Noise Supplement page 2-60).

Future (Year 2025) Scenario

The Future (Year 2025) scenario includes buildout of the project as well as the cumulative growth and development anticipated under buildout of the General Plan through Year 2025. Future increases in traffic, with and without the project, are provided in Table 9 (Future [Year 2025] Traffic Noise Levels). As shown in Table 9, implementation of the proposed project would not exceed the applicable incremental noise impact standard on any roadway. The proposed structure would provide additional noise attenuation on- and off-site and would reduce noise levels at several receptors separated from SR-55 by the proposed structure. Therefore, the project would not result in a potentially significant traffic noise impact under the Future (Year 2025) scenario.

Table 9 Future (Year 2025) Traffic Noise Levels

Receptor No.	*Receptor Location*	*Year 2025 Noise Level (dBA CNEL)*	*Year 2025 + Project Noise Level (dBA CNEL)*	*Increase in Noise Level*	*Significant Impact?*
1	Proposed southwest edge of residential structure	75	75	0	No
2	Proposed northwest edge of residential structure	75	74	-1	No
3	Proposed northeast edge of residential structure	70	67	-3	No
4	Proposed residential units along Pullman St, northeast of leasing office	65	63	-2	No
5	Midpoint of project boundary along Baker St	71	71	0	No
6	River Church of OC	73	73	0	No
7	Light industrial use at northeast corner of Pullman St/Briggs Ave intersection	64	63	-1	No
8	Light industrial use at southeast corner of Pullman St/Briggs Ave intersection	66	64	-2	No

SOURCE: Linscott, Law & Greenspan Engineers, *Traffic Impact Analysis Report, 125 Baker Street Apartments, Costa Mesa, California* (May 14, 2013) [traffic data];
Caltrans, *2011 Traffic Volumes on the California State Highway System* (August 2012) [traffic data];
Caltrans, *2011 Annual Average Daily Truck Traffic on the California State Highway System* (2012) [traffic data];
Caltrans, *Peak Hour Volume Data* (June 29, 2012) [traffic data];
Federal Highway Administration, *Traffic Noise Model*, Version 2.5 (February 2004) [noise level estimates].
See appendix for noise model assumptions and output. Calculated peak hour noise level was used to determine CNEL using the equation recommended by Caltrans (Technical Noise Supplement page 2-60).

Mitigation Measures

Implementation of the project would not result in a significant increase in traffic noise levels in the project area. No mitigation is required.

Significance After Mitigation

Impacts related to permanent increases in noise level would be less than significant without mitigation.

Cumulative Impacts

Buildout of the proposed project, along with future cumulative growth in Costa Mesa, would result in increases in traffic that would cumulatively increase traffic noise. The cumulative analysis compares future noise levels to existing noise levels to determine if a significant cumulative increase in noise level would occur. A significant cumulative impact would occur if cumulative projects would cause an increase in roadway noise of 3 dBA CNEL or more. The potential noise impacts that would result from cumulative projects and cumulative growth are included in the Future (Year 2025) scenario. Table 10 (Cumulative Traffic Noise Impacts) compares Future (Year 2025) traffic noise levels to existing conditions. As shown in Table 10, a significant cumulative impact would not occur at any receptor. Therefore, the proposed project would not result in a cumulatively considerable contribution to a significant cumulative impact.

Table 10 Cumulative Traffic Noise Impacts

Receptor No.	*Segment*	*Existing*	*Future (Year 2025) + Project*	*Increase in Noise Level*	*Significant Cumulative Impact?*	*Increase Attributable to Project*[a]	*Cumulatively Considerable Contribution?*
1	Proposed southwest edge of residential structure	74	75	+1	No	0	No
2	Proposed northwest edge of residential structure	72	74	+2	No	-1	No
3	Proposed northeast edge of residential structure	69	67	-2	No	-3	No
4	Proposed residential units along Pullman St, northeast of leasing office	64	63	-1	No	-2	No
5	Midpoint of project boundary along Baker St	70	71	+1	No	0	No
6	River Church of OC	72	73	+1	No	0	No
7	Light industrial use at northeast corner of Pullman St/Briggs Ave intersection	63	63	0	No	-1	No
8	Light industrial use at southeast corner of Pullman St/Briggs Ave intersection	66	64	-2	No	-2	No

SOURCE: Linscott, Law & Greenspan Engineers, *Traffic Impact Analysis Report, 125 Baker Street Apartments, Costa Mesa, California* (May 14, 2013) [traffic data];
Caltrans, *2011 Traffic Volumes on the California State Highway System* (August 2012) [traffic data];
Caltrans, *2011 Annual Average Daily Truck Traffic on the California State Highway System* (2012) [traffic data];
Caltrans, *Peak Hour Volume Data* (June 29, 2012) [traffic data];
Federal Highway Administration, *Traffic Noise Model*, Version 2.5 (February 2004) [noise level estimates].

See appendix for noise model assumptions and output. Calculated peak hour noise level was used to determine CNEL using the equation recommended by Caltrans (Technical Noise Supplement page 2-60).

a. Based on the results in Table 4.5-10. The project's contribution to the cumulative noise impact is based on the increase in traffic noise attributable to the proposed project under the Future (Year 2025) scenario. If the project's contribution is less than 3 dB, the project's contribution is not cumulatively considerable.

5.1.4 Issue 4: Construction Noise

Impact Analysis

Construction of the proposed project would generate noise that could expose nearby NSLU to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Sound levels from typical construction equipment range from 74 to 85 dBA L_{eq} at 50 feet from the source, as shown in Table 11 (Typical Noise Levels for Construction Equipment). Noise from construction equipment generally exhibits point source acoustical characteristics. Strictly speaking, a point source sound decays at a rate of 6 dBA per doubling of distance from the source. The rule applies to the propagation of sound waves with no ground interaction.

Table 11 Typical Noise Levels for Construction Equipment

Construction Equipment	*Typical Noise Level at 50 feet (dBA)*
Air Compressor	77.7
Backhoe	77.6
Concrete Mixer Truck	78.8
Crane	80.6
Dozer	81.7
Dump Truck	76.5
Excavator	80.7
Generator	80.6
Grader	85.0
Loader	79.1
Paver	77.2
Roller	80.0
Scraper	83.6
Tractor	84.0
Welder	74.0

SOURCE: Federal Highway Administration, *Roadway Construction Noise Model (RCNM)*, Version 1.1 (December 8, 2008).

Standard equipment, including loaders, dozers, scrapers, backhoes, rollers, and dump trucks, would be used for construction of the proposed project. Noise levels from construction activities on the project site were determined based on the construction equipment list provided by the applicant and typical equipment noise levels determined by the Roadway Construction Noise Model (RCNM) (FHWA 2008). The five noisiest pieces of construction equipment (loader, dozer, scraper, roller, and backhoe) that could be required for the project were assumed to operate simultaneously in the same location. Based on this worst-case assumption, construction of the project would have the potential to generate hourly average

noise levels up to 79 dBA at the nearest NSLU, the River Church of OC located 80 feet from the project site. This estimate is conservative because construction equipment would be spread out over the site and would not be operating all at once.

Construction noise would have the potential to exceed the City's noise level limits for churches. However, the City of Costa Mesa Noise Ordinance exempts construction activities from the noise levels limits, provided that construction takes place during the allowable hours established in the Noise Ordinance. The City limits construction activities to Mondays through Fridays between the hours of 7:00 AM and 7:00 PM and on Saturdays from 9:00 AM and 6:00 PM. The proposed project would comply with these restrictions. No evening or nighttime construction would be necessary. Therefore, the City would comply with applicable requirements for construction noise and a potentially significant impact would not occur during construction.

Mitigation Measures

Implementation of the project would not result in significant impacts from construction noise. No mitigation is required.

Significance After Mitigation

Impacts related to construction noise would be less than significant without mitigation.

Cumulative Impacts

Construction noise impacts are localized in nature because they are limited to the construction site where construction equipment is operating. As discussed above, sound levels from project construction would be up to 79 dBA approximately 80 feet from the construction site (FHWA 2008). There are no approved, planned, or foreseeable projects in the vicinity that would generate similar construction noise levels. Additionally, cumulative projects and the proposed project would be subject to the City's Noise Ordinance, which limits construction to daytime hours. Therefore, a significant cumulative impact would not occur.

5.1.5 Issue 5: Aircraft Noise

■ Impact Analysis

The nearest airport to the project site is JWA, located approximately 0.5 mile southwest of the project site. The project site is located just outside of the 60 dBA CNEL noise contour of JWA (JWALUC 2010). As discussed in Section 5.1.1, traffic noise is the dominant noise source on the project site. Noise levels from traffic noise exceed 60 dBA on the project site. Therefore, although the site may experience intermittent noise from overflights, noise levels would not exceed 60 dBA CNEL and would generally not by noticeable over surrounding traffic noise. Therefore, the project would not be exposed to excessive noise from JWA.

Mitigation Measures

Implementation of the project would not result in significant impacts from aircraft noise. No mitigation is required.

Significance After Mitigation

Impacts related to aircraft noise would be less than significant without mitigation.

Cumulative Impacts

No additional aviation uses are planned to be introduced in the immediate vicinity of the project site. In addition, the project does not propose any new air traffic. No NSLU would be exposed to excessive noise levels from aviation as a result of the project. Therefore, a cumulative impact related to aviation would not occur.

CHAPTER 6 **Conclusion**

Operation of the project would have the potential to expose on-site sensitive noise receptors to excessive noise levels related to traffic noise. Mitigation measure MM-NOI-1 would reduce impacts to a less-than-significant level. The increase in traffic noise associated with the proposed project would not result in a significant direct or cumulative impact. Short-term groundborne vibration increases from construction equipment would have the potential disturb nearby vibration sensitive manufacturing uses. Mitigation measure MM-NOI-2 would reduce impacts to a less-than-significant level. Impacts related to temporary increases in noise level during construction and exposure of future residents to aircraft noise would be less than significant.

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CHAPTER 7 **References**

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Appendix A Noise Data

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\Location 0
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	SW Corner of Pullman/Briggs
Note1:	In front of Light Manufacturing Facility
Note2:	Traffic on Briggs/Pullman and 55
Octave Filters:	None

Overall Measurement

Start Time:	19-Jun-2013 11:55:46
Elapsed Time:	00:15:00.0
Leq:	65.8 dBA
SEL:	95.3 dBA
Dose:	0.00 %
Proj. Dose:	0.37 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	57.7 dBA	19-Jun-2013 11:56:28
Max:	81.0 dBA	19-Jun-2013 12:03:57
Peak-1:	103.6 dBF	19-Jun-2013 12:03:56
Peak-2:	99.7 dBA	19-Jun-2013 12:03:56

Current Measurement

Start Time:	19-Jun-2013 11:55:46
Elapsed Time:	00:15:00.0
Leq:	65.8 dBA
SEL:	95.3 dBA
Dose:	0.00 %
Proj. Dose:	0.37 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	57.7 dBA	19-Jun-2013 11:56:28
Max:	81.0 dBA	19-Jun-2013 12:03:57
Peak-1:	103.6 dBF	19-Jun-2013 12:03:56
Peak-2:	99.7 dBA	19-Jun-2013 12:03:56

L 1.67	72.5 dBA	L 50.00	63.1 dBA
L 8.33	68.8 dBA	L 66.67	61.5 dBA
L 33.33	65.1 dBA	L 90.00	59.5 dBA

Detector: Slow
Weighting: A

SPL Exceedance Level 1:	115.00	Exceeded:	0 times
SPL Exceedance level 2:	120	Exceeded:	0 times
Peak-1 Exceedance Level:	140	Exceeded:	0 times
Peak-2 Exceedance Level:	140	Exceeded:	0 times

Hysteresis:	2
Overloaded:	0 time(s)
Paused:	0 times for 00:00:00.0

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	19-Jun-2013 11:47:47	Level:	113.20 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level: 90% Source: INT

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\N_Locatio
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	200 Briggs Avenue
Note1:	SE corner of Pullman/Briggs
Note2:	Traffic on Briggs/Pullman
Octave Filters:	None

Overall Measurement		Current Measurement	
Start Time:	10-Jul-2013 23:01:16	Start Time:	10-Jul-2013 23:01:16
Elapsed Time:	00:15:00.0	Elapsed Time:	00:15:00.0
Leq:	56.0 dBA	Leq:	56.0 dBA
SEL:	85.6 dBA	SEL:	85.6 dBA
Dose:	0.00 %	Dose:	0.00 %
Proj. Dose:	0.00 %	Proj. Dose:	0.00 %
Threshold:	0 dB	Threshold:	0 dB
Criterion:	90 dB	Criterion:	90 dB
Exchange Rate:	3 dB	Exchange Rate:	3 dB

Min:	47.6 dBA	10-Jul-2013 23:14:41		Min:	47.6 dBA	10-Jul-2013 23:14:41	
Max:	75.0 dBA	10-Jul-2013 23:14:14		Max:	75.0 dBA	10-Jul-2013 23:14:14	
Peak-1:	93.4 dBF	10-Jul-2013 23:14:13		Peak-1:	93.4 dBF	10-Jul-2013 23:14:13	
Peak-2:	88.6 dBA	10-Jul-2013 23:14:13		Peak-2:	88.6 dBA	10-Jul-2013 23:14:13	

L 1.67	64.5 dBA	L 50.00	53.6 dBA
L 8.33	56.4 dBA	L 66.67	52.8 dBA
L 33.33	54.4 dBA	L 90.00	51.0 dBA

Detector:	Slow			
Weighting:	A			
SPL Exceedance Level 1:	115.00	Exceeded:	0	times
SPL Exceedance level 2:	120	Exceeded:	0	times
Peak-1 Exceedance Level:	140	Exceeded:	0	times
Peak-2 Exceedance Level:	140	Exceeded:	0	times
Hysteresis:	2			
Overloaded:	0 time(s)			
Paused:	0 times for 00:00:00.0			

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	10-Jul-2013 22:53:24	Level:	113.50 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level:	94% Source: INT

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\Location 0
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	102 Baker Street
Note1:	Front of River Church of OC
Note2:	Traffic on Baker/55
Octave Filters:	None

Overall Measurement

Start Time:	19-Jun-2013 12:17:28
Elapsed Time:	00:15:00.0
Leq:	70.5 dBA
SEL:	100.1 dBA
Dose:	0.00 %
Proj. Dose:	1.13 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	61.3 dBA	19-Jun-2013 12:17:31
Max:	87.3 dBA	19-Jun-2013 12:21:54
Peak-1:	112.1 dBF	19-Jun-2013 12:21:53
Peak-2:	103.8 dBA	19-Jun-2013 12:21:53

L 1.67	77.4 dBA	L 50.00	68.0 dBA
L 8.33	73.5 dBA	L 66.67	66.6 dBA
L 33.33	69.5 dBA	L 90.00	64.8 dBA

Current Measurement

Start Time:	19-Jun-2013 12:17:28
Elapsed Time:	00:15:00.0
Leq:	70.5 dBA
SEL:	100.1 dBA
Dose:	0.00 %
Proj. Dose:	1.13 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	61.3 dBA	19-Jun-2013 12:17:31
Max:	87.3 dBA	19-Jun-2013 12:21:54
Peak-1:	112.1 dBF	19-Jun-2013 12:21:53
Peak-2:	103.8 dBA	19-Jun-2013 12:21:53

Detector:	Slow
Weighting:	A

SPL Exceedance Level 1:	115.00	Exceeded:	0 times
SPL Exceedance level 2:	120	Exceeded:	0 times
Peak-1 Exceedance Level:	140	Exceeded:	0 times
Peak-2 Exceedance Level:	140	Exceeded:	0 times

Hysteresis:	2
Overloaded:	0 time(s)
Paused:	0 times for 00:00:00.0

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	19-Jun-2013 11:47:47	Level:	113.20 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level: 89% Source: INT

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\N_Locatio
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	102 Baker Street
Note1:	Front of River Church of OC
Note2:	Traffic on 55
Octave Filters:	None

Overall Measurement		Current Measurement	
Start Time:	10-Jul-2013 23:21:29	Start Time:	10-Jul-2013 23:21:29
Elapsed Time:	00:15:00.0	Elapsed Time:	00:15:00.0
Leq:	59.2 dBA	Leq:	59.2 dBA
SEL:	88.8 dBA	SEL:	88.8 dBA
Dose:	0.00 %	Dose:	0.00 %
Proj. Dose:	0.08 %	Proj. Dose:	0.08 %
Threshold:	0 dB	Threshold:	0 dB
Criterion:	90 dB	Criterion:	90 dB
Exchange Rate:	3 dB	Exchange Rate:	3 dB

Min:	47.6 dBA	10-Jul-2013 23:29:32	Min:	47.6 dBA	10-Jul-2013 23:29:32
Max:	71.1 dBA	10-Jul-2013 23:30:04	Max:	71.1 dBA	10-Jul-2013 23:30:04
Peak-1:	96.9 dBF	10-Jul-2013 23:21:34	Peak-1:	96.9 dBF	10-Jul-2013 23:21:34
Peak-2:	93.9 dBA	10-Jul-2013 23:21:34	Peak-2:	93.9 dBA	10-Jul-2013 23:21:34

L 1.67	67.6 dBA	L 50.00	56.1 dBA
L 8.33	63.5 dBA	L 66.67	54.9 dBA
L 33.33	57.5 dBA	L 90.00	52.4 dBA

Detector:	Slow		
Weighting:	A		
SPL Exceedance Level 1:	115.00	Exceeded:	0 times
SPL Exceedance level 2:	120	Exceeded:	0 times
Peak-1 Exceedance Level:	140	Exceeded:	0 times
Peak-2 Exceedance Level:	140	Exceeded:	0 times
Hysteresis:	2		
Overloaded:	0 time(s)		
Paused:	0 times for 00:00:00.0		

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	10-Jul-2013 22:53:24	Level:	113.50 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level:	94% Source: INT

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\Location 0
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	Project Site Parking lot (west side)
Note1:	between buliding and 55 off-ramp
Note2:	Traffic on 55
Octave Filters:	None

Overall Measurement

Start Time:	19-Jun-2013 12:38:44
Elapsed Time:	00:15:00.0
Leq:	68.1 dBA
SEL:	97.7 dBA
Dose:	0.00 %
Proj. Dose:	0.64 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Current Measurement

Start Time:	19-Jun-2013 12:38:44
Elapsed Time:	00:15:00.0
Leq:	68.1 dBA
SEL:	97.7 dBA
Dose:	0.00 %
Proj. Dose:	0.64 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	63.1 dBA	19-Jun-2013 12:41:32	
Max:	77.1 dBA	19-Jun-2013 12:49:31	
Peak-1:	98.6 dBF	19-Jun-2013 12:49:30	
Peak-2:	96.4 dBA	19-Jun-2013 12:49:31	

Min:	63.1 dBA	19-Jun-2013 12:41:32	
Max:	77.1 dBA	19-Jun-2013 12:49:31	
Peak-1:	98.6 dBF	19-Jun-2013 12:49:30	
Peak-2:	96.4 dBA	19-Jun-2013 12:49:31	

L 1.67	72.0 dBA	L 50.00	67.7 dBA
L 8.33	70.0 dBA	L 66.67	66.9 dBA
L 33.33	68.3 dBA	L 90.00	65.4 dBA

Detector:	Slow		
Weighting:	A		
SPL Exceedance Level 1:	115.00	Exceeded:	0 times
SPL Exceedance level 2:	120	Exceeded:	0 times
Peak-1 Exceedance Level:	140	Exceeded:	0 times
Peak-2 Exceedance Level:	140	Exceeded:	0 times
Hysteresis:	2		
Overloaded:	0 time(s)		
Paused:	0 times for 00:00:00.0		

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	19-Jun-2013 11:47:47	Level:	113.20 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level: 88% Source: INT

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\N_Locatio
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	Project Site Parking lot (west side)
Note1:	between buliding and 55 off-ramp
Note2:	Traffic on 55
Octave Filters:	None

Overall Measurement

Start Time:	10-Jul-2013 23:41:23
Elapsed Time:	00:15:00.0
Leq:	62.2 dBA
SEL:	91.7 dBA
Dose:	0.00 %
Proj. Dose:	0.16 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	50.1 dBA	10-Jul-2013 23:54:50
Max:	73.5 dBA	10-Jul-2013 23:56:23
Peak-1:	109.1 dBF	10-Jul-2013 23:56:23
Peak-2:	108.5 dBA	10-Jul-2013 23:56:23

Current Measurement

Start Time:	10-Jul-2013 23:41:23
Elapsed Time:	00:15:00.0
Leq:	62.2 dBA
SEL:	91.7 dBA
Dose:	0.00 %
Proj. Dose:	0.16 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	50.1 dBA	10-Jul-2013 23:54:50
Max:	73.5 dBA	10-Jul-2013 23:56:23
Peak-1:	109.1 dBF	10-Jul-2013 23:56:23
Peak-2:	108.5 dBA	10-Jul-2013 23:56:23

L 1.67	67.0 dBA	L 50.00	61.5 dBA
L 8.33	64.7 dBA	L 66.67	60.3 dBA
L 33.33	62.5 dBA	L 90.00	57.8 dBA

Detector:	Slow		
Weighting:	A		
SPL Exceedance Level 1:	115.00	Exceeded:	0 times
SPL Exceedance level 2:	120	Exceeded:	0 times
Peak-1 Exceedance Level:	140	Exceeded:	0 times
Peak-2 Exceedance Level:	140	Exceeded:	0 times
Hysteresis:	2		
Overloaded:	0 time(s)		
Paused:	0 times for 00:00:00.0		

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	10-Jul-2013 22:53:24	Level:	113.50 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level: 94% Source: INT

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\Location 0
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	3100 Pullman Street
Note1:	NE Corner of Fischer/Pullman
Note2:	Traffic on Pullman/55
Octave Filters:	None

Overall Measurement		Current Measurement	
Start Time:	19-Jun-2013 13:00:46	Start Time:	19-Jun-2013 13:00:46
Elapsed Time:	00:15:00.0	Elapsed Time:	00:15:00.0
Leq:	70.5 dBA	Leq:	70.5 dBA
SEL:	100.0 dBA	SEL:	100.0 dBA
Dose:	0.00 %	Dose:	0.00 %
Proj. Dose:	1.12 %	Proj. Dose:	1.12 %
Threshold:	0 dB	Threshold:	0 dB
Criterion:	90 dB	Criterion:	90 dB
Exchange Rate:	3 dB	Exchange Rate:	3 dB

Min:	63.8 dBA	19-Jun-2013 13:08:04	Min:	63.8 dBA	19-Jun-2013 13:08:04
Max:	86.5 dBA	19-Jun-2013 13:04:22	Max:	86.5 dBA	19-Jun-2013 13:04:22
Peak-1:	108.1 dBF	19-Jun-2013 13:09:39	Peak-1:	108.1 dBF	19-Jun-2013 13:09:39
Peak-2:	98.9 dBA	19-Jun-2013 13:04:21	Peak-2:	98.9 dBA	19-Jun-2013 13:04:21

L 1.67	76.9 dBA	L 50.00	68.0 dBA
L 8.33	73.9 dBA	L 66.67	66.9 dBA
L 33.33	69.5 dBA	L 90.00	65.5 dBA

Detector:	Slow		
Weighting:	A		
SPL Exceedance Level 1:	115.00	Exceeded:	0 times
SPL Exceedance level 2:	120	Exceeded:	0 times
Peak-1 Exceedance Level:	140	Exceeded:	0 times
Peak-2 Exceedance Level:	140	Exceeded:	0 times
Hysteresis:	2		
Overloaded:	0 time(s)		
Paused:	0 times for 00:00:00.0		

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	19-Jun-2013 11:47:47	Level:	113.20 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level: 88% Source: INT

File Translated:	P:\Projects - All Users\100030000+\100035264 Costa Mesa 125 E Baker Apt EIR\Atkins Data\Noise\N_Locatio
Model/Serial Number:	814 / A0174
Firmware/Software Revs:	1.026 / 1.07
Name:	PBS&J/EIP
Descr1:	12301 Wilshire Blvd., Ste. 430
Descr2:	Los Angeles, CA 90025
Setup/Setup Descr:	15minute.slm / 15 Minute
Location:	3100 Pullman Street
Note1:	NE Corner of Fischer/Pullman
Note2:	Traffic on 55
Octave Filters:	None

Overall Measurement

Start Time:	11-Jul-2013 00:02:08
Elapsed Time:	00:15:00.0
Leq:	61.5 dBA
SEL:	91.0 dBA
Dose:	0.00 %
Proj. Dose:	0.14 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	53.0 dBA	11-Jul-2013 00:09:08
Max:	75.4 dBA	11-Jul-2013 00:15:14
Peak-1:	93.5 dBF	11-Jul-2013 00:15:14
Peak-2:	90.8 dBA	11-Jul-2013 00:15:14

Current Measurement

Start Time:	11-Jul-2013 00:02:08
Elapsed Time:	00:15:00.0
Leq:	61.5 dBA
SEL:	91.0 dBA
Dose:	0.00 %
Proj. Dose:	0.14 %
Threshold:	0 dB
Criterion:	90 dB
Exchange Rate:	3 dB

Min:	53.0 dBA	11-Jul-2013 00:09:08
Max:	75.4 dBA	11-Jul-2013 00:15:14
Peak-1:	93.5 dBF	11-Jul-2013 00:15:14
Peak-2:	90.8 dBA	11-Jul-2013 00:15:14

L 1.67	69.7 dBA	L 50.00	59.8 dBA
L 8.33	63.0 dBA	L 66.67	58.9 dBA
L 33.33	60.8 dBA	L 90.00	57.1 dBA

Detector:	Slow		
Weighting:	A		
SPL Exceedance Level 1:	115.00	Exceeded:	0 times
SPL Exceedance level 2:	120	Exceeded:	0 times
Peak-1 Exceedance Level:	140	Exceeded:	0 times
Peak-2 Exceedance Level:	140	Exceeded:	0 times
Hysteresis:	2		
Overloaded:	0 time(s)		
Paused:	0 times for 00:00:00.0		

Calibrated:	01-Jan-2001 11:56:00	Offset:	8.8 dB
Checked:	10-Jul-2013 22:53:24	Level:	113.50 dB
Calibrator	LD 0504	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Enabled	Number Interval Records:	1
History Records:	Disabled	Number History Records:	18

814 Memory:	524288 bytes
Free Memory:	474847 bytes 90.57% free

Battery Level: 94% Source: INT

Project: 125 E. Baker Street Project
Roadway Segment inputs for TNM

LLG 2013 (Surface Streets) and Caltrans 2012 (SR-55)

		Posted		Vehicle Mix			Peak Hr		
		Speed	Light Duty	Medium	Heavy	Peak Hr			
Roadway	**Segment**	**(mph)**	**Autos**	**Trucks**	**Trucks**	**Volume**	**LDA**	**MDT**	**HDT**
Existing Scenario									
Baker Street	WB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	1,305	1,240	39	26
Baker Street	EB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	550	523	17	11
Baker Street	WB NB SR-55 Ramp to Pullman	40	95.0%	3.0%	2.0%	1,278	1,214	38	26
Baker Street	EB NB SR-55 Ramp to Pullman	40	95.0%	3.0%	2.0%	529	503	16	11
Baker Street	WB Pullman to Red Hill	40	95.0%	3.0%	2.0%	959	911	29	19
Baker Street	EB Pullman to Red Hill	40	95.0%	3.0%	2.0%	507	482	15	10
I-55 Northbound Off Ramp	SR-55 to Baker Street	NA	95.0%	3.0%	2.0%	807	767	24	16
Pullman Street	NB West of Briggs Ave	40	95.0%	3.0%	2.0%	263	250	8	5
Pullman Street	SB West of Briggs Ave	40	95.0%	3.0%	2.0%	90	86	3	2
Pullman Street	NB Briggs to Baker	40	95.0%	3.0%	2.0%	262	249	8	5
Pullman Street	SB Briggs to Baker	40	95.0%	3.0%	2.0%	72	68	2	1
Briggs Ave	NB Pullman to Red Hill	40	95.0%	3.0%	2.0%	14	13	0	0
Briggs Ave	SB Pullman to Red Hill	40	95.0%	3.0%	2.0%	20	19	1	0
Red Hill Ave	NB Briggs to Baker	50	95.0%	3.0%	2.0%	940	893	28	19
Red Hill Ave	SB Briggs to Baker	50	95.0%	3.0%	2.0%	717	681	22	14
SR-55	NB Inner Lane	65					1,144	-	-
SR-55	NB Middle Lane	65					1,144	45	7
SR-55	NB Outer Lane	65					1,144	45	7
SR-55	NB Aux (2 lanes)	65					2,289	90	14
SR-55	SB Inner Lane	65					1,144	-	-
SR-55	SB Middle Lane	65					1,144	45	7
SR-55	SB Outer Lane	65					1,144	45	7
SR-55	SB Aux (2 lanes)	65	LDA/MDT/HDT from Caltrans Data				2,289	90	14

Project: 125 E. Baker Street Project LLG 2013 (Surface Streets) and Caltrans 2012 (SR-55)
Roadway Segment inputs for TNM

		Posted		Vehicle Mix					
		Speed	Light Duty	Medium	Heavy	Peak Hr	Peak Hr		
Roadway	**Segment**	**(mph)**	**Autos**	**Trucks**	**Trucks**	**Volume**	**LDA**	**MDT**	**HDT**
Existing + Project Scenario									
Baker Street	WB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	1,312	1,246	39	26
Baker Street	EB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	586	557	18	12
Baker Street	WB NB SR-125 Ramp to Pullman	40	95.0%	3.0%	2.0%	1,306	1,241	39	26
Baker Street	EB NB SR-125 Ramp to Pullman	40	95.0%	3.0%	2.0%	580	551	17	12
Baker Street	WB Pullman to Red Hill	40	95.0%	3.0%	2.0%	975	926	29	20
Baker Street	EB Pullman to Red Hill	40	95.0%	3.0%	2.0%	511	485	15	10
I-55 Northbound Off Ramp	SR-55 to Baker Street	NA	95.0%	3.0%	2.0%	822	781	25	16
Pullman Street	NB West of Briggs Ave	40	95.0%	3.0%	2.0%	263	250	8	5
Pullman Street	SB West of Briggs Ave	40	95.0%	3.0%	2.0%	90	86	3	2
Pullman Street	NB Driveway to Briggs	40	95.0%	3.0%	2.0%	316	300	9	6
Pullman Street	SB Driveway to Briggs	40	95.0%	3.0%	2.0%	181	172	5	4
Pullman Street	NB Briggs to Baker	40	95.0%	3.0%	2.0%	303	288	9	6
Pullman Street	SB Briggs to Baker	40	95.0%	3.0%	2.0%	151	143	5	3
Briggs Ave	NB Pullman to Red Hill	40	95.0%	3.0%	2.0%	20	19	1	0
Briggs Ave	SB Pullman to Red Hill	40	95.0%	3.0%	2.0%	19	18	1	0
Red Hill Ave	NB Briggs to Baker	50	95.0%	3.0%	2.0%	940	893	28	19
Red Hill Ave	SB Briggs to Baker	50	95.0%	3.0%	2.0%	717	681	22	14
SR-55	NB Inner Lane	65	LDA/MDT/HDT from Caltrans Data				1,144	-	-
SR-55	NB Middle Lane	65					1,144	45	7
SR-55	NB Outer Lane	65					1,144	45	7
SR-55	NB Aux (2 lanes)	65					2,289	90	14
SR-55	SB Inner Lane	65					1,144	-	-
SR-55	SB Middle Lane	65					1,144	45	7
SR-55	SB Outer Lane	65					1,144	45	7
SR-55	SB Aux (2 lanes)	65					2,289	90	14

Project: 125 E. Baker Street Project
Roadway Segment inputs for TNM

LLG 2013 (Surface Streets) and Caltrans 2012 (SR-55)

		Posted		Vehicle Mix					
		Speed	Light Duty	Medium	Heavy	Peak Hr	Peak Hr		
Roadway	**Segment**	**(mph)**	**Autos**	**Trucks**	**Trucks**	**Volume**	**LDA**	**MDT**	**HDT**
Buildout Without Project Scenario									
Baker Street	WB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	1,830	1,739	55	37
Baker Street	EB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	710	675	21	14
Baker Street	WB NB SR-125 Ramp to Pullman	40	95.0%	3.0%	2.0%	1,614	1,533	48	32
Baker Street	EB NB SR-125 Ramp to Pullman	40	95.0%	3.0%	2.0%	670	637	20	13
Baker Street	WB Pullman to Red Hill	40	95.0%	3.0%	2.0%	1,530	1,454	46	31
Baker Street	EB Pullman to Red Hill	40	95.0%	3.0%	2.0%	657	624	20	13
I-55 Northbound Off Ramp	SR-55 to Baker Street	NA	95.0%	3.0%	2.0%	710	675	21	14
Pullman Street	NB West of Briggs Ave	40	95.0%	3.0%	2.0%	271	257	8	5
Pullman Street	SB West of Briggs Ave	40	95.0%	3.0%	2.0%	93	88	3	2
Pullman Street	NB Briggs to Baker	40	95.0%	3.0%	2.0%	270	257	8	5
Pullman Street	SB Briggs to Baker	40	95.0%	3.0%	2.0%	74	70	2	1
Briggs Ave	NB Pullman to Red Hill	40	95.0%	3.0%	2.0%	14	13	0	0
Briggs Ave	SB Pullman to Red Hill	40	95.0%	3.0%	2.0%	20	19	1	0
Red Hill Ave	NB Briggs to Baker	50	95.0%	3.0%	2.0%	1,251	1,188	38	25
Red Hill Ave	SB Briggs to Baker	50	95.0%	3.0%	2.0%	1,300	1,235	39	26
SR-55	NB Inner Lane	65	LDA/MDT/HDT from Caltrans Data				1,261	-	-
SR-55	NB Middle Lane	65					1,261	49	8
SR-55	NB Outer Lane	65					1,261	49	8
SR-55	NB Aux (2 lanes)	65					2,522	99	16
SR-55	SB Inner Lane	65					1,261	-	-
SR-55	SB Middle Lane	65					1,261	49	8
SR-55	SB Outer Lane	65					1,261	49	8
SR-55	SB Aux (2 lanes)	65					2,522	99	16

Project: 125 E. Baker Street Project
Roadway Segment inputs for TNM

LLG 2013 (Surface Streets) and Caltrans 2012 (SR-55)

		Posted		Vehicle Mix					
		Speed	Light Duty	Medium	Heavy	Peak Hr	Peak Hr		
Roadway	Segment	(mph)	Autos	Trucks	Trucks	Volume	LDA	MDT	HDT
Buildout + Project Scenario									
Baker Street	WB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	1,837	1,745	55	37
Baker Street	EB SB SR-55 Ramp to NB Ramp	40	95.0%	3.0%	2.0%	746	709	22	15
Baker Street	WB NB SR-125 Ramp to Pullman	40	95.0%	3.0%	2.0%	1,642	1,560	49	33
Baker Street	EB NB SR-125 Ramp to Pullman	40	95.0%	3.0%	2.0%	721	685	22	14
Baker Street	WB Pullman to Red Hill	40	95.0%	3.0%	2.0%	1,546	1,469	46	31
Baker Street	EB Pullman to Red Hill	40	95.0%	3.0%	2.0%	661	628	20	13
I-55 Northbound Off Ramp	SR-55 to Baker Street	NA	95.0%	3.0%	2.0%	725	689	22	15
Pullman Street	NB West of Briggs Ave	40	95.0%	3.0%	2.0%	271	257	8	5
Pullman Street	SB West of Briggs Ave	40	95.0%	3.0%	2.0%	93	88	3	2
Pullman Street	NB Driveway to Briggs	40	95.0%	3.0%	2.0%	324	308	10	6
Pullman Street	SB Driveway to Briggs	40	95.0%	3.0%	2.0%	184	175	6	4
Pullman Street	NB Briggs to Baker	40	95.0%	3.0%	2.0%	311	295	9	6
Pullman Street	SB Briggs to Baker	40	95.0%	3.0%	2.0%	153	145	5	3
Briggs Ave	NB Pullman to Red Hill	40	95.0%	3.0%	2.0%	20	19	1	0
Briggs Ave	SB Pullman to Red Hill	40	95.0%	3.0%	2.0%	19	18	1	0
Red Hill Ave	NB Briggs to Baker	50	95.0%	3.0%	2.0%	1,251	1,188	38	25
Red Hill Ave	SB Briggs to Baker	50	95.0%	3.0%	2.0%	1,300	1,235	39	26
SR-55	NB Inner Lane	65	LDA/MDT/HDT from Caltrans Data				1,261	-	-
SR-55	NB Middle Lane	65					1,261	49	8
SR-55	NB Outer Lane	65					1,261	49	8
SR-55	NB Aux (2 lanes)	65					2,522	99	16
SR-55	SB Inner Lane	65					1,261	-	-
SR-55	SB Middle Lane	65					1,261	49	8
SR-55	SB Outer Lane	65					1,261	49	8
SR-55	SB Aux (2 lanes)	65					2,522	99	16

Atkins
S Toland
15 July 2013
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 125 E. Baker St
RUN: Baker Street - Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SW Edge	1	1	0.0	72.6	65	72.6	10	Snd Lvl	72.6	0.0	8	-8.0
NW Edge	2	1	0.0	71.0	65	71.0	10	Snd Lvl	71.0	0.0	8	-8.0
NE Edge	3	1	0.0	67.5	65	67.5	10	Snd Lvl	67.5	0.0	8	-8.0
Pullman St	4	1	0.0	62.8	65	62.8	10	----	62.8	0.0	8	-8.0
Baker Street	5	1	0.0	68.9	65	68.9	10	Snd Lvl	68.9	0.0	8	-8.0
River Church	7	1	0.0	70.9	60	70.9	10	Snd Lvl	70.9	0.0	8	-8.0
NE Indust	8	1	0.0	62.1	67	62.1	10	----	62.1	0.0	8	-8.0
SE Indust	9	1	0.0	64.6	67	64.6	10	----	64.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	8	0.0	0.0	0.0
All Impacted	5	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Atkins
S Toland
24 July 2013
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 125 E. Baker St
RUN: Baker Street - Existing + Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SW Edge (Ground Floor)	1	1	0.0	73.8	65	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
NW Edge (Ground Floor)	2	1	0.0	72.8	65	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
NE Edge (Ground Floor)	3	1	0.0	64.4	65	64.4	10	----	64.4	0.0	8	-8.0
Pullman St (Ground Floor)	4	1	0.0	61.2	65	61.2	10	----	61.2	0.0	8	-8.0
Baker Street (Ground Floor)	5	1	0.0	68.5	65	68.5	10	Snd Lvl	68.5	0.0	8	-8.0
River Church	7	1	0.0	71.1	60	71.1	10	Snd Lvl	71.1	0.0	8	-8.0
NE Indust	8	1	0.0	61.5	67	61.5	10	----	61.5	0.0	8	-8.0
SE Indust	9	1	0.0	62.4	67	62.4	10	----	62.4	0.0	8	-8.0
SW Edge (4th Floor)	13	1	0.0	76.4	65	76.4	10	Snd Lvl	76.4	0.0	8	-8.0
NW Edge (4th Floor)	17	1	0.0	76.0	65	76.0	10	Snd Lvl	76.0	0.0	8	-8.0
Northern Courtyard	20	1	0.0	38.1	65	38.1	10	----	38.1	0.0	8	-8.0
NE Edge (4th Floor)	22	1	0.0	64.2	65	64.2	10	----	64.2	0.0	8	-8.0
Pullman St (4th Floor)	23	1	0.0	61.6	65	61.6	10	----	61.6	0.0	8	-8.0
Baker Street (4th Floor)	24	1	0.0	70.4	65	70.4	10	Snd Lvl	70.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	14	0.0	0.0	0.0
All Impacted	7	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Atkins
S Toland
17 July 2013
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 125 E. Baker St
RUN: Baker Street - Future No Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SW Edge	1	1	0.0	74.0	65	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
NW Edge	2	1	0.0	73.3	65	73.3	10	Snd Lvl	73.3	0.0	8	-8.0
NE Edge	3	1	0.0	68.4	65	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
Pullman St	4	1	0.0	63.3	65	63.3	10	----	63.3	0.0	8	-8.0
Baker Street	5	1	0.0	69.7	65	69.7	10	Snd Lvl	69.7	0.0	8	-8.0
River Church	7	1	0.0	71.8	60	71.8	10	Snd Lvl	71.8	0.0	8	-8.0
NE Indust	8	1	0.0	62.7	67	62.7	10	----	62.7	0.0	8	-8.0
SE Indust	9	1	0.0	65.1	67	65.1	10	----	65.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	8	0.0	0.0	0.0
All Impacted	5	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

RESULTS: SOUND LEVELS **125 E. Baker Street**

Atkins **17 July 2013**

S Toland **TNM 2.5**

Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: **125 E. Baker St**

RUN: **Baker Street - Future + Project**

BARRIER DESIGN: **No Barrier**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: **68 deg F, 50% RH**

Receiver

Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
SW Edge (Ground Floor)	1	1	0	73.9	65	73.9	10	Snd Lvl	73.9	0	8	-8
NW Edge (Ground Floor)	2	1	0	72.9	65	72.9	10	Snd Lvl	72.9	0	8	-8
NE Edge (Ground Floor)	3	1	0	65.5	65	65.5	10	Snd Lvl	65.5	0	8	-8
Pullman St (Ground Floor)	4	1	0	61.4	65	61.4	10	----	61.4	0	8	-8
Baker Street (Ground Floor)	5	1	0	69.5	65	69.5	10	Snd Lvl	69.5	0	8	-8
River Church	7	1	0	71.8	60	71.8	10	Snd Lvl	71.8	0	8	-8
NE Indust	8	1	0	61.9	67	61.9	10	----	61.9	0	8	-8
SE Indust	9	1	0	62.7	67	62.7	10	----	62.7	0	8	-8
SW Edge (4th Floor)	13	1	0	76.7	65	76.7	10	Snd Lvl	76.7	0	8	-8
NW Edge (4th Floor)	17	1	0	76.3	65	76.3	10	Snd Lvl	76.3	0	8	-8
Northern Courtyard	20	1	0	38.5	65	38.5	10	----	38.5	0	8	-8
NE Edge (4th Floor)	22	1	0	65.3	65	65.3	10	Snd Lvl	65.3	0	8	-8
Pullman St (4th Floor)	23	1	0	61.9	65	61.9	10	----	61.9	0	8	-8
Baker Street (4th Floor)	24	1	0	71.1	65	71.1	10	Snd Lvl	71.1	0	8	-8

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	11	0	2.1	9.2
All Impacted	8	0	2.9	9.2
All that meet NR Goal	2	8	8.6	9.2

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/15/2013
Case Description: Baker Street Apartments

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Church	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	80	0
Dozer	No	40		81.7	80	0
Scraper	No	40		83.6	80	0
Backhoe	No	40		77.6	80	0
Roller	No	20		80	80	0

Results

		Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader		75	71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper		79.5	75.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		73.5	69.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		75.9	68.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	79.5	79.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.