**APPENDIX E**

**Noise Technical Study**

# Noise Study

# for the

# Public Storage – North Hollywood Replacement Project

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## EXECUTIVE SUMMARY

This Noise Study assesses and discusses the potential noise and vibration impacts that may occur with the implementation of the Public Storage – North Hollywood Replacement Project (Project), located in the City of Los Angeles, California. The analysis describes the existing environment in the Project area; estimates future noise and vibration levels at surrounding land uses resulting from construction and operation of the Project; and identified the potential for significant impacts. An evaluation of the Project's contribution to potential cumulative noise impacts is also provided. The study summarizes the potential for the Project to conflict with applicable noise and vibration regulations, standards, and thresholds. The findings of the analyses are as follows:

- Construction activities would potentially result in short-term and temporary noise impacts to nearby noise-sensitive receptors due to on-site construction equipment and activities. Implementation of noise-attenuation techniques and placement of the construction-staging area and equipment away from noise-sensitive sites would lower construction noise levels.
- Construction of the Project would generate sporadic, temporary vibration effects adjacent to the Project area but would not be expected to exceed the significance thresholds.
- Operation of the Project would generate noise from Project-related traffic or from on-site sources (parking, refuse collection area, mechanical equipment) that would not exceed the significance thresholds.
- Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed recommended measures for each individual project and compliance with locally adopted and enforced noise ordinances. Given that construction activities would be required to comply with the City's allowable hours, would be temporary and would not increase ambient noise at a sensitive receptor by more than 5 dBA, construction-related noise impacts would be less than significant.
- Noise associated with cumulative operational sources would not be significant.
- Due to the rapid attenuation characteristics of ground-borne vibration and the distance of the cumulative projects to the Project site, no potential exists for cumulative construction- or operational-related impacts with respect to ground-borne vibration.

# INTRODUCTION

The purpose of this noise study is to assess and discuss the impact of potential noise impacts that may occur with the implementation of the Public Storage – North Hollywood Replacement Project (Project), located in Los Angeles, California. The noise report analyzes short-term noise and ground-borne vibration impacts associated with the Project. The report also discusses the applicable federal, state, and local noise and vibration regulations; the applicable noise and vibration thresholds; the methodology used to analyze potential noise and vibration impacts; and the modeled roadway noise.

## Project Description

The Project site is located at an occupied 2.05-acre of lot at 10810 Vanowen Street (Project site) within the North Hollywood – Valley Village Community Plan area on the northern side of the City of Los Angeles,. The Project site is currently developed with Public Storage mini-warehouses containing 42,380 square feet of total building area and a surface parking. The existing development includes 5 single-story buildings and 1 single-story office building with asphalt pavements. The Project site consists of one parcel under Assessor's Parcel Number (APN) 2412-023-012. The proposed Project consists of redeveloping the site which includes demolishing approximately 42,380 square feet of mini-warehouse facilities for the construction of a 3-story 160,277 square feet of mini-warehouse storage facilities.

# NOISE DESCRIPTORS

## Fundamentals of Sound

Because the human ear does not respond uniformly to sounds at all frequencies, sound-pressure level alone is not a reliable indicator of loudness. For example, the human ear is less sensitive to low and high frequencies than to the medium frequencies that more closely correspond to human speech. In response to the sensitivity of the human ear to certain sound frequencies, the A-weighted noise level, referenced in units of dBA, was developed to better correspond with people's subjective judgment of sound levels. To support assessing a community reaction to noise, scales have been developed that average sound-pressure levels over time and quantify the result in terms of a single numerical descriptor. Several scales have been developed that address community noise levels. The equivalent sound level (Leq) is the average A-weighted sound level measured over a given time interval. Leq can be measured over any period but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.

**Table 1: Noise Descriptors** identifies various noise descriptors developed to measure sound levels over different periods of time.

**Table 1**
**Noise Descriptors**

| Term | Definition |
|---|---|
| Decibel (dB) | The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measure sound to a reference pressure. |
| A-weighted decibel (dBA) | A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz). |
| Hertz (Hz) | The frequency of the pressure vibration, which is measured in cycles per second. |
| Kilo hertz (kHz) | One thousand cycles per second. |
| Equivalent sound level (Leq) | The sound level containing the same total energy as a time varying signal over a given time period. The Leq is the value that expresses the time averaged total energy of a fluctuating sound level. Leq can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods. |
| Community noise equivalent level (CNEL) | A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments add 5 dBA for the evening, 7:00 PM to 10:00 PM, and add 10 dBA for the night, 10:00 PM to 7:00 AM. The 5 and 10 dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours. The logarithmic effect of adding these penalties to the 1-hour Leq measurements typically results in a CNEL measurement that is within approximately 3 dBA of the peak-hour Leq.[a] |
| Nighttime (Lnight) | Lnight is the average noise exposure during the hourly periods from 10:00 PM to 7:00 AM. |
| Sound pressure level | The sound pressure is the force of sound on a surface area perpendicular to the direction of the sound. The sound pressure level is expressed in dB. |
| Ambient noise | The level of noise that is all encompassing within a given environment, being usually a composite of sounds from many and varied sources near to and far from the observer. No specific source is identified in the ambient environment. |

[a] *California Department of Transportation,* Technical Noise Supplement; A Technical Supplement to the Traffic Noise Analysis Protocol, *(Sacramento, California: November 2009), pp. N51–N54.*

A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level. In general, changes in a noise level of less than 3 dBA are not noticed by the human ear.[1] Changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. An increase of greater than 5 dBA is readily noticeable, while the human ear perceives a 10 dBA increase in sound level to be a doubling of sound volume.

Noise sources can generally be categorized in two types: (1) point sources, such as stationary equipment; and (2) line sources, such as a roadway. Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dBA for each doubling of distance from the source to the receptor at acoustically hard sites, and at a rate of 7.5 dBA at acoustically soft sites.[2] A hard, or reflective, site consists of asphalt, concrete, or very hard-packed soil, which does not provide any excess ground-effect attenuation. An acoustically soft or absorptive site is characteristic of normal earth and most ground with vegetation. As an example, a 60 dBA noise level measured at 50 feet from a point source at an acoustically hard site would be 54 dBA at 100 feet from the source and 48 dBA at 200 feet from the source. Noise from the same point source at an acoustically soft site would be 52.5 dBA at 100 feet and 45 dBA at 200 feet from the source. Sound generated by a line source typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling of distance from the source to the receptor for hard and soft sites, respectively.[3]

## Fundamentals of Vibration

Vibration is commonly defined as an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or root-mean-square (RMS) velocity is typically used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal, while RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response to ground-borne vibration. The RMS vibration velocity level can be presented in inches per second (ips) or in VdB (a decibel unit referenced to 1 microinch per second). Commonly, ground-borne vibration

1 US Department of Transportation, Federal Highway Administration (USDOT FHWA), *Fundamentals and Abatement of Highway Traffic Noise* (Springfield, VA: Author, September 1980), 81.
2 USDOT FHWA, *Fundamentals and Abatement,* 97.
3 USDOT FHWA, *Fundamentals and Abatement,* 97.

generated by man-made activities (i.e., road traffic, construction) attenuates rapidly with distance from the source of the vibration.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold wGohere minor damage can occur in fragile buildings.

# REGULATORY SETTING

## City of Los Angeles General Plan Noise Element

The City's General Plan Noise Element identifies sources of noise and provides objectives and policies to ensure that noise from various sources does not create an unacceptable noise environment. The following Noise Element policies and objectives are applicable to the Project:[4]

Objective 2 (Nonairport): reduce or eliminate nonairport related intrusive noise, especially relative to noise sensitive uses.

Policy 2.2: Enforce and/or implement applicable city, state and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise and alleviate noise that is deemed a public nuisance.

Objective 3 (Land Use Development): reduce or eliminate noise impacts associated with proposed development of land and changes in land use.

Policy 3.1: Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.

4 City of Los Angeles, *General Plan,* "Noise Element" (adopted February 3, 1999).

## City of Los Angeles General Noise Ordinance

The Los Angeles Municipal Code (LAMC) indicates that in cases where the actual ambient conditions are not known, the City's presumed daytime (7:00 AM to 10:00 PM) and nighttime (10:00 PM to 7:00 AM) minimum ambient noise levels as defined in Section 111.02 of the LAMC should be used. The presumed ambient noise levels for these areas set forth in the LAMC Sections 111.02 and 112.05 are provided in **Table 2: City of Los Angeles Presumed Ambient Noise Levels.**

**Table 2**
**City of Los Angeles Presumed Ambient Noise Levels**

| Zone | Daytime Hours (7:00 AM to 10:00 PM) dBA (Leq) | Nighttime Hours (10:00 PM to 7:00 AM) dBA (Leq) |
|---|---|---|
| Residential | 50 | 40 |
| Commercial | 60 | 55 |
| Manufacturing (M1, MR1, and MR2) | 60 | 55 |
| Heavy Manufacturing (M2 and M3) | 65 | 65 |

*Source:* Los Angeles Municipal Code, sec. 111.03.

Section 41.40 of the LAMC regulates noise from demolition and construction activities. More specifically, Section 41.40 prohibits construction activity and repair work where the use of any power tool, device, or equipment would disturb persons occupying sleeping quarters in any dwelling hotel, apartment, or other place of residence between the hours of 9:00 PM to 7:00 AM Monday through Friday, and between 6:00 PM and 8:00 AM on Saturday. All such activities are prohibited on Sundays and all federal holidays.

Section 112.05 of the LAMC also specifies the maximum noise level of construction machinery that can be generated in any residential zone of the City or within 500 feet thereof. Specifically, any construction machinery may not generate a maximum noise level exceeding 75 dB(A) at 50 feet from the equipment. However, the above noise limitation does not apply where compliance is technically infeasible. LAMC Section 112.05 defines technical infeasibility to mean that "said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers and/or other noise reduction device or techniques during the operation of the equipment."

## Guidelines for Noise-Compatible Land Uses

The City has adopted local guidelines based, in part, on the community noise compatibility guidelines established by the State Department of Health Services for use in assessing the compatibility of various

land use types with a range of noise levels. These guidelines are set forth in the *L.A. CEQA Thresholds Guide* in terms of the CNEL.[5] CNEL guidelines for specific land uses are classified into four categories: (1) normally acceptable; (2) conditionally acceptable; (3) normally unacceptable; and (4) clearly unacceptable. As shown in **Table 3: City of Los Angeles Land Use Compatibility for Community Noise**, a CNEL value of 70 dBA is the upper limit of what is considered a conditionally acceptable noise environment for multifamily homes, although the upper limit of what is considered "normally acceptable" for these uses are 65 dBA CNEL. New development should generally be discouraged within the "normally unacceptable" or "clearly unacceptable" categories. However, if new development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

**Table 3**
**City of Los Angeles Land Use Compatibility for Community Noise**

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

*Note:*
*Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.*
*Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.*
*Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.*
*Clearly Unacceptable: New construction or development should generally not be undertaken.*
*Source: City of L.A. CEQA Thresholds Guide, 2006.*

5 City of Los Angeles, *L.A. CEQA Thresholds Guide.*

# SIGNIFICANCE THRESHOLDS

## Construction Noise

The *L.A. CEQA Thresholds Guide*[6] defines the following significance thresholds for construction activities as follows:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise sensitive use;
- Construction activities lasting more than 10 days in a three month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dBA at a noise sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at anytime on Sunday. [organize analysis to match the three thresholds]

## Operation Noise

Operational noise impacts are evaluated for Project-related off-site roadway traffic noise impacts and on-site stationary source noise from on-site activities and equipment.

- The Project would cause any ambient noise levels to increase by 5 dBA CNEL or more and the resulting noise falls on a noise-sensitive land use within an area categorized as either "normally acceptable" or "conditionally acceptable" (see **Table 3** for description of these categories); or cause ambient noise levels to increase by 3 dBA CNEL or more and the resulting noise falls on a noise-sensitive land use within an area categorized as either "normally acceptable" or "clearly unacceptable."
- Project-related operational (i.e., nonroadway) noise sources such as outdoor activities, building mechanical/electrical equipment, etc., increase ambient noise level by 5 dBA, causing a violation of the City Noise Ordinance.
- The maximum noise level (Lmax) generated from the operation of the loading dock and refuse collection area.

6 City of Los Angeles, *L.A. CEQA Threshold Guide* (2006), http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf.

## Ground-Borne Vibration

The City of Los Angeles has not adopted a significance threshold to assess vibration impacts during construction. Thus, the Caltrans *Transportation and Construction Vibration Guidance Manual*[7] is used as a screening tool to assess the potential for adverse vibration effects related to structural damage and human perception.

- **Potential Building Damage.** Project construction activities cause ground-borne vibration levels to exceed 0.5 ips PPV at the nearest off-site residential buildings.
- **Potential Human Annoyance.** Project construction and operation activities cause ground-borne vibration levels to exceed 0.035 ips PPV at nearby residential uses.

# METHODOLOGY

## Ambient Noise Measurements

Noise-level monitoring was conducted by Meridian Consultants on February 27, 2019, at three locations within the Project area vicinity**.** Noise-level monitoring was conducted for 15-minute intervals at each location using a Larson Davis Model 831 sound-level meter. This meter satisfies the American National Standards Institute (ANSI) standard for general environmental noise measurement instrumentation. The ANSI specifies several types of sound-level meters according to their precision. Types 1, 2, and 3 are referred to as "precision," "general-purpose," and "survey" meters, respectively. Most measurements carefully taken with a Type 1 sound-level meter will have a margin of error not exceeding 1 dB.

The Larson Davis Model 831 is a Type 1 precision sound-level meter. This meter meets all requirements of ANSI S1.4-1983 and ANSI1.43-1997 Type 1 standards, as well as International Electrotechnical Commission (IEC) IEC61672-1 Ed. 1.0, IEC60651 Ed 1.2, and IEC60804 Type 1, Group X standards.

The sound-level meter was located approximately 5 feet above ground and was covered with a Larson Davis windscreen. The sound-level meter was field calibrated with an external calibrator prior to operation.

7 Caltrans, *Transportation and Construction Vibration Guidance Manual* (September 2013), http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf.

## Construction Noise

### *On-Site Construction Noise*

On-site construction noise impacts were evaluated by determining the noise levels generated by the different types of construction activity anticipated, calculating the construction-related noise levels at nearby sensitive receptor locations, and comparing these construction-related noise levels to the ambient noise levels (refer to **Table 4** below) at those receptors. More specifically, the following steps were undertaken to assess construction-period noise impacts.

- Typical noise levels for each type of construction equipment were obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model;
- Distances between construction site locations (noise sources) and surrounding sensitive receptors were estimated using Project architectural drawings, Project site plans, and aerial imagery (e.g., Google Earth);
- The construction noise levels were then estimated, in terms of hourly Leq, for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance; and
- Construction noise levels were then compared to the construction noise significance thresholds.

### *Off-Site Construction Noise*

The analysis of construction traffic noise impacts focuses on off-site Project areas by: (1) identifying major roadways that may be used for construction worker commute routes or truck haul routes; (2) generally identifying the nature and location of noise-sensitive receptors along those routes; and (3) evaluating the traffic characteristics along those routes, specifically as related to existing traffic volumes. Construction traffic volume and road parameter data would be input into the TNM 2.5 model to calculate average noise levels for these trips. Construction trucks staging and hauling route noise impacts would be evaluated by determining the noise levels generated by different types of construction activity, calculating the construction-related noise levels to existing ambient noise levels (i.e., noise levels without construction noise).

## Ground-Borne Vibration

Ground-borne vibration impacts were evaluated by identifying potential vibration sources, estimating the distance between vibration sources and surrounding structure locations and surrounding structure locations and vibration sensitive receptors, and making a significance determination based on the significance thresholds.

## PROJECT CHARACTERISTICS

The Project would replace the existing Public Storage mini-warehouse uses to redevelop the site with 3-story mini-warehouse storage facilities. As a result, the use and the operation of the site would remain the same. Applicable regulations with which the Project must comply that would minimize Project-related noise sources include the following:

- Chapter IV, Section 41.40 of the LAMC limits construction hours for exterior construction and hauling activities to between the hours of 7:00 AM and 9:00 PM, Monday through Friday, and 8:00 AM and 6:00 PM on Saturday.
- Section 112.05 of the LAMC which prohibits the operation of any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from the source between the hours of 7:00 AM to 9:00 PM when the source is located within 500 feet of a residential zone. Compliance with Section 112.05 of the LAMC includes the use of mufflers, shields, sound barriers, and/or noise reduction devices or techniques.
- All building outdoor mounted mechanical and electrical equipment would be designed to meet the requirements of LAMC, Chapter XI, Section 112.02, which limits the noise output from such equipment to no more than a five decibel increase over the presumed ambient noise level.

## EXISTING CONDITIONS

### Ambient Noise Levels

Short-term sound monitoring was conducted at four (4) locations to measure the ambient sound environment in the Project vicinity. Measurements were taken over 15-minute intervals at each location on February 27, 2019, as indicated in **Table 4: Ambient Noise Measurements**. **Figure 5** depicts locations where ambient noise measurements were conducted. As shown in **Table 4,** ambient noise levels ranged from a low of 55.1 dBA southeast of the Project site along Riverton Avenue (Site 3) to a high of 74.3 dBA north of the Project site along Vanowen Street (Site 1).

**Table 4**
**Ambient Noise Measurements**

| Site | Description | Nearest Use | Time Period | Noise Source | dBA Leq |
|---|---|---|---|---|---|
| 1 | Along Riverton Avenue, east of the Project site | Multi-family residential | 2:53 PM – 3:08 PM | Pedestrian and light vehicular traffic along Riverton Avenue | 56.3 |
| 2 | Along Satsuma Avenue, southwest of the Project site | Multi-family residential | 1:49 PM – 2:04 PM | Pedestrian and light vehicular traffic along Satsuma Avenue | 55.7 |
| 3 | Along Riverton Avenue, southeast of the Project site | Single-family residential | 2:10 PM – 2:25 PM | Pedestrian and light vehicular traffic along Riverton Avenue | 55.1 |
| 4 | Along Vanowen Street, north | Commercial | 2:26 PM – | Heavy vehicular traffic along | 74.3 |

| Site | Description | Nearest Use | Time Period | Noise Source | dBA Leq |
|---|---|---|---|---|---|
| | of the Project site | | 2:21 PM | Vanowen Street | |

*Source: Refer to **Appendix A** for noise monitoring data sheets.*
*Notes: dBA = A-weighted decibels; Leq = average equivalent sound level.*

## Noise Sensitive Receptors

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure and the types of activities typically involved at the receptor location. The City of Los Angeles CEQA Thresholds Guide states that residences, schools, motels, libraries, religious institutions, hospitals, nursing homes, and parks are generally more sensitive to noise than commercial and industrial land uses. The nearest existing noise sensitive use in close proximity to the Project site, as shown in **Figure 5: Sensitive Receptor Locations**, include the following:

- Multi-family residential: The nearest residential uses are the residential uses to the south of the Project site, to the east across Riverton Avenue and to the west across Satsuma Avenue.
- Single family residential: These uses are located to the south but are located further away from the Project site.

## Vibration Conditions

Based on field observations, the primary source of existing ground-borne vibration in the vicinity of the Project site is vehicle traffic on local roadways. According to the FTA,[8] typical road traffic–induced vibration levels are unlikely to be perceptible by people. Trucks and buses typically generate ground-borne vibration velocity levels of approximately 63 VdB (at a 50-foot distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. A vibration level of 72 VdB is above the 60 VdB level of perceptibility.

# NOISE ANALYSIS

## Construction

### *On-Site Construction Noise*

Construction activities that would occur during the construction phases (demolition, site preparation, grading, building construction, architectural coating, and paving) would generate both steady-state and

8 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment* (2004).

episodic noise that would be heard both on and off the Project site. Each phase involves the use of different types of construction equipment and, therefore, has its own distinct noise characteristics. Demolition would typically include equipment such as concrete saw, dozer, and tractors/loaders/backhoes; site preparation would typically include equipment such as grader, scraper and tractors/loaders/backhoes; building construction would typically include equipment such as cranes, forklifts, generator sets, tractors/loaders/backhoes, and welders; architectural coating would typically include equipment such as air compressors; and paving would typically include equipment such as concrete mixers, pavers, rollers, and tractors/loaders/backhoes. The Project would be constructed using typical construction techniques; no blasting, impact pile driving, or jackhammers would be required.

Typical maximum noise levels and duty cycles of representative types of equipment that would potentially be used during construction for this Project are presented in **Table 5: Typical Maximum Noise Levels for Project Construction Equipment**. Construction equipment noise would not be constant because of the variations of power, cycles, and equipment locations. For maximum noise events, this analysis considers equipment operating at the edge of the property line of the Project site.

As mentioned previously, sound generated by the construction noise source typically diminishes at a rate of 6 dBA over hard surfaces, such as asphalt, and 7.5 dBA over soft surfaces, such as vegetation, for each doubling of distance. Barriers—such as walls, berms, or buildings, and elevation differences—can also reduce sound levels by up to 20 dBA.[9]

The potential noise impact generated during construction depends on the phase of construction and the percentage of time the equipment operates over the workday. However, construction noise estimates used for the analysis are representative of conservative conditions because it is unlikely that all the equipment contained on site would operate simultaneously. The Project would be constructed using typical construction techniques; no blasting, impact pile driving, or jackhammers would be required. As would be the case for construction of most land use development projects, construction of the proposed Project would require the use of heavy-duty equipment with the potential to generate audible noise above the ambient background noise level.

9 Caltrans, *Technical Noise Supplement* (1998), 33–40, 123–131.

**Table 5**
**Typical Maximum Noise Levels for Project Construction Equipment**

| Equipment Description | Typical Duty Cycle (%) | Spec Lmax (dBA) | Actual Lmax (dBA) |
|---|---|---|---|
| Compressor (air) | 40 | 80.0 | 77.7 |
| Concrete Mixer | 40 | 85.0 | 78.8 |
| Concrete/Industrial saw | 20 | 90.0 | 89.6 |
| Crane | 16 | 85.0 | 80.6 |
| Dozer | 40 | 85.0 | 81.7 |
| Forklift | 40 | 80.0 | 79.1 |
| Generator Sets (<25 KVA) | 50 | 70.0 | 72.8 |
| Grader | 40 | 85.0 | N/A |
| Paver | 50 | 85.0 | 77.2 |
| Roller | 20 | 85.0 | 80.0 |
| Tractor | 40 | 84.0 | N/A |
| Welders | 40 | 73.0 | 74.0 |

*Source: FHWA Roadway Construction Noise Model (RCM).*

The noise levels at various distances from construction activity are shown in **Table 6: Construction Noise Estimates.** Construction equipment operates at its nosiest levels for certain percentages of time during operation. Equipment such as excavators, graders, and loaders would operate at different percentages over the course of an hour.[10] During a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are operated concurrently. The Project's estimated construction noise levels were calculated for a scenario in which a reasonable number of construction equipment was assumed to be operating simultaneously, given the physical size of the site and logistical limitations, and with the noise equipment located at the construction area nearest to the affected receptors to present a conservative impact analysis. This is considered a conservative evaluation because the Project would typically use fewer overall equipment simultaneously at any given time and, as such, would likely generate lower noise levels than reported herein.

10 Federal Highway Administration, *Traffic Noise Model* (2006).

**Table 6**
**Construction Maximum Noise Estimates**

| Site | Distance from Project Site (feet) | Land Use | Ambient Noise Level (Leq) | Without Regulatory Compliance | | With Regulatory Compliance | |
|---|---|---|---|---|---|---|---|
| | | | | Calculated Leq | Maximum Noise Increase Over Ambient[1] | Calculated Leq | Maximum Noise Increase Over Ambient[1] |
| Site 1 | 30 | Multi-family Residential | 56.3 | 91.8 | +35.5 | 51.8 | +1.3 |
| Site 2 | 255 | Single-Family Residential | 55.7 | 73.2 | +17.5 | 33.2 | -- |
| Site 3 | 275 | Single-Family Residential | 55.1 | 72.5 | +17.4 | 32.5 | -- |
| Site 4 | 25 | Commercial | 74.3 | 93.4 | +19.1 | 53.4 | -- |

*Source: FHWA RCNM Version 1.1*
*Refer to **Appendix B** for Construction Noise Worksheets.*
*Note: Logarithmic increase (Ambient Noise + Calculated Leq).*

Pursuant to Section 41.40 of the LAMC, construction would be limited to the hours between 7:00 AM and 9:00 PM, Monday through Friday, and between 8:00 AM and 6:00 PM on Saturday. No construction activities would occur on Sundays or federal holidays.

All construction related noise would be required to comply with the provisions of Section 112.05 of the LAMC which prohibits the operation of any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from the source between the hours of 7:00 AM to 9:00 PM when the source is located within 500 feet of a residential zone. Compliance with Section 112.05 of the LAMC includes the use of mufflers, shields, sound barriers, and/or noise reduction devices or techniques. As such, the incorporation of these measures into the construction management of the Project represents regulatory compliance with the appropriate section of the LAMC. These regulatory compliance measures include:

- Barriers, such as walls, berms, or buildings, and elevation differences that would reduce sound levels by up to 20 dBA.[11]

[11] Caltrans, *Technical Noise Supplement (1998), 33–40, 123–131.*

- A construction management plan which specifies that all construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers and other state-required noise attenuation devices; identify the maximum distance between construction equipment staging areas and occupied residential areas; and require the use of electric air compressors and similar power tools. Optimal muffler systems for all equipment would reduce construction noise levels by approximately 10 dB or more.[12]

- Limiting the number of noise-generating heavy-duty off-road construction equipment (e.g., backhoes, dozers, excavators, loaders, rollers, etc.) simultaneously used on the Project site within 50 feet of off-site noise sensitive receptors surrounding the site to no more than one or two pieces of heavy-duty off-road equipment, which would further reduce construction noise levels by approximately 10 dBA.

- A sign, legible at a distance of 50 feet, will be posted at the project construction site providing a contact name and telephone number where residents can inquire about the construction process and register complaints. This sign will indicate the dates and duration of construction activities. In conjunction with this required posting, a noise disturbance coordinator will be identified to address construction noise concerns received. The contact name and the telephone number for the noise disturbance coordinator will be posted on the sign. The coordinator will be responsible for responding to any local complaints about construction noise and will notify the City to determine the cause and implement reasonable measures to the complaint, as deemed acceptable by the City.

Compliance with the City's Noise Ordinance, including the measures described above, would increase ambient noise levels by 1.3 dBA (refer to Table 6), and thus would not cause exterior ambient noise levels to increase by 5 dBA. Impacts would be less than significant.

## *Off-Site Construction Noise*

Construction of the Project would require haul and vendor truck trips to and from the site to export material and delivery supplies to the site. Trucks traveling to and from the Project site would be required to travel along a haul route approved by the City of Los Angeles. Approximately 193 total hauling trips would take place during demolition grading, which total to approximately 1 to 2 haul truck trips per hour during a work day. Haul truck traffic would take the most direct route to the appropriate freeway ramp.

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[12] FHWA, *Special Report – Measurement, Prediction, and Mitigation*, updated June 2017, accessed February 2019, https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm

Noise associated with construction truck trips were estimated using the Caltrans FHWA Traffic Noise Model based on the maximum number of truck trips in a day. Project truck trips would generate noise levels of approximately 45.1 dBA, measured at a distance of 75 feet along Vanowen Street. As shown in **Table 2,** presumed ambient noise levels at residential zones are 50 dBA during the daytime hours. The noise level increases from truck trips would be below the significance threshold of 5 dBA. Impacts would be less than significant.

## *Construction Vibration*

Demolition and construction of the proposed Project may result in varying degrees of temporary ground-borne vibration and noise, depending on the specific construction equipment used and activities involved. Ground-borne vibration and noise levels associated with various types of construction equipment and activities are summarized in **Table 7: Vibration Source Levels for Construction Equipment**. Based on the types of construction activities associated with the proposed Project (e.g., site preparation, excavation, building erection) it is expected that maximum ground-borne vibration and noise levels would be associated with the use of large dozers, drilling, or heavy construction trucks. Pile driving will not be an employed method of construction.

Maximum ground-borne vibration and noise levels from operational-related activities (e.g. large dozers and dump trucks) would be less than those discussed above for construction-related activities. According to the FTA, levels associated with the use of a large dozer and hoe ram are 0.089 in/sec PPV and 87 VdB at 25 feet. Construction trucks are listed as 0.076 in/sec PPV and 86 VdB at 25 feet. Although residential uses located to the east along Satsuma Avenue and to the west along Riverton Avenue could experience increase vibration levels, these instances are anticipated to be below the acceptable vibration decibel (85 VdB at 25 feet) because the residential dwellings are greater than 25 feet from the roadway source. Additionally, the utilization of large and small dozers, caisson drilling, trucks, and jackhammering would occur throughout the Project site and would not be concentrated or confined in any area directly adjacent to the nearest sensitive land uses. Thus, implementation of the proposed project would not result in the exposure of existing offsite receptors to excessive ground-borne vibration levels. Impacts would be less than significant.

**Table 7**
**Construction Vibration Levels Estimates**

| Equipment | | PPV at 25 ft, in/sec | Approximate Lv* at 25 feet |
|---|---|---|---|
| Pile Driver (impact) | Upper range | 1.518 | 112 |
| | typical | 0.644 | 104 |
| Pile Driver (sonic) | Upper range | 0.734 | 105 |

| Equipment | | PPV at 25 ft, in/sec | Approximate Lv* at 25 feet |
|---|---|---|---|
| | typical | 0.17 | 93 |
| Clam shovel drop (slurry wall) | | 0.202 | 94 |
| Hydromill (slurry wall) | In soil | 0.008 | 66 |
| | In rock | 0.017 | 75 |
| Hoe Ram | | 0.089 | 87 |
| Large bulldozer | | 0.089 | 87 |
| Caisson drilling | | 0.089 | 87 |
| Loaded trucks | | 0.076 | 86 |
| Jackhammer | | 0.035 | 79 |
| Small bulldozer | | 0.003 | 58 |

*Note:*
*RMS velocity in decibels, VdB in 1 micro/sec*
*PPV = peak particle velocity*
*Source: FTA, Transit Noise and Vibration Impact Assessment Manual, September 2018.*

## Operation

### *Refuse Collection Area Noise*

The Project's refuse and recycling collection bins would be stored in a dedicated area of the proposed apartment building. In addition, collecting or disposing of rubbish or garbage would not occur between the hours of 9:00 PM and 6:00 AM of the following day to comply with LAMC Section 113.01. Therefore, operational refuse collection area noise would not increase exterior ambient noise levels. Impacts would be less than significant.

### *Fixed Mechanical Equipment Noise*

The Project would introduce various stationary noise sources including heating, ventilation, and air conditioning systems, which would be located either on the roof, the side of a structure, or on the ground. All Project mechanical equipment would be required to be designed with appropriate noise control devices, such as sound attenuators, acoustics louvers, or sound screens/parapet walls to comply with noise limitation requirements provided in LAMC Section 112.02, which prohibits the noise from such equipment from causing an increase in the ambient noise level of more than 5 dB. Therefore, operation of mechanical equipment on the Project building would not exceed the City's threshold of significance. Impacts would be less than significant.

## CUMULATIVE NOISE

For purposes of this analysis, development of the related projects will be considered to contribute to cumulative noise impacts. Noise by definition is a localized phenomenon and drastically reduces as

distance from the source increases. As a result, only related projects and growth in the general area of the Project site would contribute to cumulative noise impacts. Cumulative construction noise impacts have the potential to occur when multiple construction projects in the local area generate noise within the same time frame and contribute to the local ambient noise environment. It is expected that, as with the Project, the related projects would implement best management practices, which would minimize any noise-related nuisances during construction. Therefore, the combined construction noise impact of the related projects and the Project's contribution would not cause a significant cumulative impact.

With regard to stationary sources, cumulative significant noise impacts may result from cumulative development. Stationary sources of noise that could be introduced in the area by cumulative projects could include mechanical equipment, loading docks, and parking lots. Given that these projects would be required to adhere to the City's noise standards, all stationary sources would be required to have shielding or other noise-abatement measures so as not to cause a substantial increase in ambient noise levels. Moreover, due to distance, it is unlikely that noise from multiple cumulative projects would interact to create a significant combined noise impact. As such, it is not anticipated that a significant cumulative increase in permanent ambient noise levels would occur, and impacts would be less than significant.

# APPENDIX E

## Noise Monitoring

**Monitoring Location: Site 1**
**Monitoring Date: 2/27/2019**

**Monitoring Period**

| Time | LAeq | LASmax | LASmin |
|---|---|---|---|
| 14:06:34 | 49.1 | 54.6 | 44.7 |
| 14:07:34 | 50.4 | 58.7 | 45.2 |
| 14:08:34 | 53.4 | 60.6 | 47.1 |
| 14:09:34 | 53.4 | 63.1 | 47.8 |
| 14:10:34 | 57.5 | 66.4 | 48.9 |
| 14:11:34 | 57.3 | 65.8 | 50.7 |
| 14:12:34 | 49.6 | 57.7 | 45.7 |
| 14:13:34 | 49.7 | 54.0 | 44.4 |
| 14:14:34 | 49.5 | 52.8 | 42.5 |
| 14:15:34 | 51.2 | 56.3 | 46.7 |
| 14:16:34 | 50.8 | 55.6 | 45.7 |
| 14:17:34 | 58.7 | 71.9 | 44.2 |
| 14:18:34 | 51.3 | 58.2 | 44.8 |
| 14:19:34 | 50.7 | 54.2 | 47.2 |
| 14:20:34 | 49.9 | 53.4 | 45.2 |
| 14:21:34 | 51.4 | 51.3 | 50.5 |

**15-minute LAeq** **53.4**

**Monitoring Location: Site 2**
**Monitoring Date: 2/27/2019**

**Monitoring Period**

| Time | LAeq | LASmax | LASmin |
|---|---|---|---|
| 14:53:38 | 55.9 | 62.6 | 51.6 |
| 14:54:38 | 55.3 | 58.8 | 52.9 |
| 14:55:38 | 56.7 | 65.2 | 54.0 |
| 14:56:38 | 55.1 | 58.8 | 53.1 |
| 14:57:38 | 60.1 | 67.6 | 54.5 |
| 14:58:38 | 54.5 | 58.0 | 52.5 |
| 14:59:38 | 54.2 | 56.5 | 52.6 |
| 15:00:38 | 54.9 | 60.1 | 52.7 |
| 15:01:38 | 54.3 | 60.9 | 52.6 |
| 15:02:38 | 56.9 | 62.3 | 52.9 |
| 15:03:38 | 54.3 | 61.4 | 52.4 |
| 15:04:38 | 54.7 | 60.3 | 52.4 |
| 15:05:38 | 60.6 | 68.9 | 54.6 |
| 15:06:38 | 55.7 | 64.1 | 52.1 |
| 15:07:38 | 56.9 | 65.4 | 52.8 |
| 15:08:38 | 52.5 | 53.3 | 52.5 |

**15-minute LAeq** **56.3**

**Monitoring Location: Site 3**
**Monitoring Date: 2/27/2019**

**Monitoring Period**

| Time | LAeq | LASmax | LASmin |
|---|---|---|---|
| 13:49:37 | 53.9 | 57.9 | 48.3 |
| 13:50:37 | 46.4 | 50.0 | 43.2 |
| 13:51:37 | 47.7 | 51.8 | 42.9 |
| 13:52:37 | 58.7 | 65.1 | 48.4 |
| 13:53:37 | 58.4 | 65.5 | 49.2 |
| 13:54:37 | 58.0 | 63.9 | 48.9 |
| 13:55:37 | 58.9 | 63.7 | 45.9 |
| 13:56:37 | 51.7 | 58.6 | 42.2 |
| 13:57:37 | 58.6 | 69.8 | 40.6 |
| 13:58:37 | 58.0 | 69.4 | 43.7 |
| 13:59:37 | 57.9 | 71.1 | 44.3 |
| 14:00:37 | 54.0 | 58.5 | 44.6 |
| 14:01:37 | 47.8 | 55.2 | 42.6 |
| 14:02:37 | 50.1 | 58.7 | 43.1 |
| 14:03:37 | 52.3 | 63.2 | 40.0 |
| 14:04:37 | 39.8 | 40.6 | 39.6 |

**15-minute LAeq** **55.7**

**Monitoring Location: Site 4**
**Monitoring Date: 2/27/2019**

**Monitoring Period**

| Time | LAeq | LASmax | LASmin |
|---|---|---|---|
| 15:10:21 | 60.2 | 72.0 | 41.7 |
| 15:11:21 | 43.5 | 50.0 | 40.9 |
| 15:12:21 | 42.4 | 48.1 | 39.5 |
| 15:13:21 | 44.8 | 50.8 | 41.4 |
| 15:14:21 | 46.5 | 56.0 | 39.8 |
| 15:15:21 | 50.1 | 61.6 | 41.8 |
| 15:16:21 | 54.8 | 68.0 | 44.1 |
| 15:17:21 | 51.9 | 64.3 | 41.8 |
| 15:18:21 | 44.4 | 56.5 | 39.1 |
| 15:19:21 | 63.0 | 71.0 | 42.9 |
| 15:20:21 | 58.1 | 66.0 | 42.5 |
| 15:21:21 | 48.5 | 60.4 | 38.7 |
| 15:22:21 | 49.8 | 61.3 | 40.2 |
| 15:23:21 | 45.5 | 56.7 | 39.8 |
| 15:24:21 | 55.0 | 65.4 | 41.7 |
| 15:25:21 | 54.6 | 58.4 | 55.1 |

**15-minute LAeq** **55.1**

**Monitoring Location: Site 5**
**Monitoring Date: 2/27/2019**

**Monitoring Period**

| Time | LAeq | LASmax | LASmin |
|---|---|---|---|
| 14:26:58 | 74.7 | 80.5 | 63.2 |
| 14:27:58 | 74.1 | 78.5 | 55.8 |
| 14:28:58 | 73.2 | 81.3 | 60.7 |
| 14:29:58 | 74.6 | 79.1 | 68.0 |
| 14:30:58 | 74.8 | 79.8 | 64.0 |
| 14:31:58 | 74.6 | 84.2 | 61.5 |
| 14:32:58 | 74.9 | 78.1 | 65.0 |
| 14:33:58 | 74.3 | 79.6 | 63.5 |
| 14:34:58 | 73.3 | 78.1 | 65.4 |
| 14:35:58 | 72.7 | 77.0 | 63.7 |
| 14:36:58 | 77.7 | 90.1 | 67.5 |
| 14:37:58 | 72.5 | 77.2 | 63.8 |
| 14:38:58 | 72.5 | 77.8 | 57.9 |
| 14:39:58 | 74.5 | 78.7 | 66.6 |
| 14:40:58 | 71.8 | 76.1 | 61.8 |
| 14:41:58 | 74.6 | 76.5 | 71.5 |

**15-minute LAeq** **74.3**

# APPENDIX E.1

## Demolition

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Public Storage - North Hollywood_Demolition

---- Receptor #1 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 1 | Residential | 53.4 | 53.4 | 53.4 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Concrete Saw | No | 20 | | 89.6 | 40 | 0 |
| Dozer | No | 40 | | 81.7 | 40 | 0 |
| Tractor | No | 40 | 84 | | 40 | 0 |
| Tractor | No | 40 | 84 | | 40 | 0 |
| Tractor | No | 40 | 84 | | 40 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Saw | 91.5 | 84.5 | N/A | N/A | N/A | N/A | N/A |
| Dozer | 83.6 | 79.6 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 85.9 | 82 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 85.9 | 82 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 85.9 | 82 | N/A | N/A | N/A | N/A | N/A |
| Total | 91.5 | 89.3 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 2 | Residential | 56.3 | 56.3 | 56.3 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Concrete Saw | No | 20 | | 89.6 | 30 | 0 |
| Dozer | No | 40 | | 81.7 | 30 | 0 |
| Tractor | No | 40 | 84 | | 30 | 0 |
| Tractor | No | 40 | 84 | | 30 | 0 |
| Tractor | No | 40 | 84 | | 30 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Saw | 94 | 87 | N/A | N/A | N/A | N/A | N/A |
| Dozer | 86.1 | 82.1 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 88.4 | 84.5 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 88.4 | 84.5 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 88.4 | 84.5 | N/A | N/A | N/A | N/A | N/A |
| Total | 94 | 91.8 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 3 | Residential | 55.7 | 55.7 | 55.7 |

Equipment

| Description | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Concrete Saw | No | 20 | | 89.6 | 255 | 0 |
| Dozer | No | 40 | | 81.7 | 255 | 0 |
| Tractor | No | 40 | 84 | | 255 | 0 |
| Tractor | No | 40 | 84 | | 255 | 0 |
| Tractor | No | 40 | 84 | | 255 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Saw | 75.4 | 68.4 | N/A | N/A | N/A | N/A | N/A |
| Dozer | 67.5 | 63.5 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.8 | 65.9 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.8 | 65.9 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.8 | 65.9 | N/A | N/A | N/A | N/A | N/A |
| Total | 75.4 | 73.2 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 4 | Residential | 55.1 | 55.1 | 55.1 |

Equipment

| | | Spec | Actual | Receptor | Estimated |
|---|---|---|---|---|---|
| | Impact | Lmax | Lmax | Distance | Shielding |

| Description | Device | Usage(%) | (dBA) | (dBA) | (feet) | (dBA) |
|---|---|---|---|---|---|---|
| Concrete Saw | No | 20 | | 89.6 | 275 | 0 |
| Dozer | No | 40 | | 81.7 | 275 | 0 |
| Tractor | No | 40 | 84 | | 275 | 0 |
| Tractor | No | 40 | 84 | | 275 | 0 |
| Tractor | No | 40 | 84 | | 275 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Saw | 74.8 | 67.8 | N/A | N/A | N/A | N/A | N/A |
| Dozer | 66.9 | 62.9 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.2 | 65.2 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.2 | 65.2 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.2 | 65.2 | N/A | N/A | N/A | N/A | N/A |
| Total | 74.8 | 72.5 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

# APPENDIX E.2

## Site Preparation

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Public Storage - North Hollywood_SitePreparation

---- Receptor #1 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 1 | Residential | 53.4 | 53.4 | 53.4 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Grader | No | 40 | 85 | | 40 | 0 |
| Scraper | No | 40 | | 83.6 | 40 | 0 |
| Tractor | No | 40 | 84 | | 40 | 0 |

| | Results Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Grader | 86.9 | 83 | N/A | N/A | N/A | N/A | N/A |
| Scraper | 85.5 | 81.5 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 85.9 | 82 | N/A | N/A | N/A | N/A | N/A |
| Total | 86.9 | 87 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 2 | Residential | 56.3 | 56.3 | 56.3 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Grader | No | 40 | 85 | | 30 | 0 |
| Scraper | No | 40 | | 83.6 | 30 | 0 |
| Tractor | No | 40 | 84 | | 30 | 0 |

| | Results Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Grader | 89.4 | 85.5 | N/A | N/A | N/A | N/A | N/A |
| Scraper | 88 | 84 | N/A | N/A | N/A | N/A | N/A |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Tractor | | 88.4 | 84.5 | N/A | N/A | N/A | N/A | N/A |
| | Total | 89.4 | 89.5 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 3 | Residential | 55.7 | 55.7 | 55.7 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Grader | No | 40 | 85 | | 255 | 0 |
| Scraper | No | 40 | | 83.6 | 255 | 0 |
| Tractor | No | 40 | 84 | | 255 | 0 |

| | Results | | | | | | |
|---|---|---|---|---|---|---|---|
| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Grader | 70.8 | 66.9 | N/A | N/A | N/A | N/A | N/A |
| Scraper | 69.4 | 65.4 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.8 | 65.9 | N/A | N/A | N/A | N/A | N/A |
| Total | 70.8 | 70.9 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 4 | Residential | 55.1 | 55.1 | 55.1 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Grader | No | 40 | 85 | | 275 | 0 |
| Scraper | No | 40 | | 83.6 | 275 | 0 |
| Tractor | No | 40 | 84 | | 275 | 0 |

| | Results | | | | | | |
|---|---|---|---|---|---|---|---|
| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Grader | 70.2 | 66.2 | N/A | N/A | N/A | N/A | N/A |
| Scraper | 68.8 | 64.8 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.2 | 65.2 | N/A | N/A | N/A | N/A | N/A |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total | 70.2 | 70.2 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

# APPENDIX E.3

## Building Construction

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Public Storage - North Hollywood_BuildingConstruction

---- Receptor #1 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 1 | Residential | 53.4 | 53.4 | 53.4 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Crane | No | 16 | | 80.6 | 40 | 0 |
| Forklift | No | 40 | | 85 | 40 | 0 |
| Forklift | No | 40 | | 85 | 40 | 0 |
| Generator | No | 50 | | 80.6 | 40 | 0 |
| Tractor | No | 40 | 84 | | 40 | 0 |
| Welder / Torch | No | 40 | | 74 | 40 | 0 |
| Welder / Torch | No | 40 | | 74 | 40 | 0 |
| Welder / Torch | No | 40 | | 74 | 40 | 0 |

| | Results | | | | | | |
|---|---|---|---|---|---|---|---|
| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Crane | 82.5 | 74.5 | N/A | N/A | N/A | N/A | N/A |
| Forklift | 86.9 | 83 | N/A | N/A | N/A | N/A | N/A |
| Forklift | 86.9 | 83 | N/A | N/A | N/A | N/A | N/A |
| Generator | 82.6 | 79.6 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 85.9 | 82 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 75.9 | 72 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 75.9 | 72 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 75.9 | 72 | N/A | N/A | N/A | N/A | N/A |
| Total | 86.9 | 88.6 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 2 | Residential | 56.3 | 56.3 | 56.3 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Crane | No | 16 | | 80.6 | 30 | 0 |
| Forklift | No | 40 | | 85 | 30 | 0 |
| Forklift | No | 40 | | 85 | 30 | 0 |
| Generator | No | 50 | | 80.6 | 30 | 0 |
| Tractor | No | 40 | 84 | | 30 | 0 |
| Welder / Torch | No | 40 | | 74 | 30 | 0 |
| Welder / Torch | No | 40 | | 74 | 30 | 0 |
| Welder / Torch | No | 40 | | 74 | 30 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Crane | 85 | 77 | N/A | N/A | N/A | N/A | N/A |
| Forklift | 89.4 | 85.5 | N/A | N/A | N/A | N/A | N/A |
| Forklift | 89.4 | 85.5 | N/A | N/A | N/A | N/A | N/A |
| Generator | 85.1 | 82.1 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 88.4 | 84.5 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 78.4 | 74.5 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 78.4 | 74.5 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 78.4 | 74.5 | N/A | N/A | N/A | N/A | N/A |
| Total | 89.4 | 91.1 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 3 | Residential | 55.7 | 55.7 | 55.7 |

Equipment

| Description | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Crane | No | 16 | | 80.6 | 255 | 0 |
| Forklift | No | 40 | | 85 | 255 | 0 |
| Forklift | No | 40 | | 85 | 255 | 0 |
| Generator | No | 50 | | 80.6 | 255 | 0 |
| Tractor | No | 40 | 84 | | 255 | 0 |
| Welder / Torch | No | 40 | | 74 | 255 | 0 |
| Welder / Torch | No | 40 | | 74 | 255 | 0 |
| Welder / Torch | No | 40 | | 74 | 255 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Crane | 66.4 | 58.4 | N/A | N/A | N/A | N/A | N/A |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Forklift | 70.8 | 66.9 | N/A | N/A | N/A | N/A | N/A |
| Forklift | 70.8 | 66.9 | N/A | N/A | N/A | N/A | N/A |
| Generator | 66.5 | 63.5 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.8 | 65.9 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 59.8 | 55.9 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 59.8 | 55.9 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 59.8 | 55.9 | N/A | N/A | N/A | N/A | N/A |
| Total | 70.8 | 72.5 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 4 | Residential | 55.1 | 55.1 | 55.1 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Crane | No | 16 | | 80.6 | 275 | 0 |
| Forklift | No | 40 | | 85 | 275 | 0 |
| Forklift | No | 40 | | 85 | 275 | 0 |
| Generator | No | 50 | | 80.6 | 275 | 0 |
| Tractor | No | 40 | 84 | | 275 | 0 |
| Welder / Torch | No | 40 | | 74 | 275 | 0 |
| Welder / Torch | No | 40 | | 74 | 275 | 0 |
| Welder / Torch | No | 40 | | 74 | 275 | 0 |

| | Results | | | | | | |
|---|---|---|---|---|---|---|---|
| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Crane | 65.7 | 57.8 | N/A | N/A | N/A | N/A | N/A |
| Forklift | 70.2 | 66.2 | N/A | N/A | N/A | N/A | N/A |
| Forklift | 70.2 | 66.2 | N/A | N/A | N/A | N/A | N/A |
| Generator | 65.8 | 62.8 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.2 | 65.2 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 59.2 | 55.2 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 59.2 | 55.2 | N/A | N/A | N/A | N/A | N/A |
| Welder / Torch | 59.2 | 55.2 | N/A | N/A | N/A | N/A | N/A |
| Total | 70.2 | 71.8 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

# APPENDIX E.4

## Paving

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Public Storage - North Hollywood_Paving

---- Receptor #1 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 1 | Residential | 53.4 | 53.4 | 53.4 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Concrete Mixer Truck | No | 40 | | 78.8 | 40 | 0 |
| Paver | No | 50 | | 77.2 | 40 | 0 |
| Paver | No | 50 | | 77.2 | 40 | 0 |
| Roller | No | 20 | | 80 | 40 | 0 |
| Roller | No | 20 | | 80 | 40 | 0 |
| Tractor | No | 40 | 84 | | 40 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Mixer Truck | 80.7 | 76.8 | N/A | N/A | N/A | N/A | N/A |
| Paver | 79.2 | 76.1 | N/A | N/A | N/A | N/A | N/A |
| Paver | 79.2 | 76.1 | N/A | N/A | N/A | N/A | N/A |
| Roller | 81.9 | 74.9 | N/A | N/A | N/A | N/A | N/A |
| Roller | 81.9 | 74.9 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 85.9 | 82 | N/A | N/A | N/A | N/A | N/A |
| Total | 85.9 | 85.4 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 2 | Residential | 56.3 | 56.3 | 56.3 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Concrete Mixer Truck | No | 40 | | 78.8 | 30 | 0 |
| Paver | No | 50 | | 77.2 | 30 | 0 |
| Paver | No | 50 | | 77.2 | 30 | 0 |
| Roller | No | 20 | | 80 | 30 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Roller | No | 20 | | 80 | 30 | 0 |
| Tractor | No | 40 | 84 | | 30 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Mixer Truck | 83.2 | 79.3 | N/A | N/A | N/A | N/A | N/A |
| Paver | 81.7 | 78.6 | N/A | N/A | N/A | N/A | N/A |
| Paver | 81.7 | 78.6 | N/A | N/A | N/A | N/A | N/A |
| Roller | 84.4 | 77.4 | N/A | N/A | N/A | N/A | N/A |
| Roller | 84.4 | 77.4 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 88.4 | 84.5 | N/A | N/A | N/A | N/A | N/A |
| Total | 88.4 | 87.9 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Site 3 | Residential | 55.7 | 55.7 | 55.7 |

Equipment

| Description | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Concrete Mixer Truck | No | 40 | | 78.8 | 255 | 0 |
| Paver | No | 50 | | 77.2 | 255 | 0 |
| Paver | No | 50 | | 77.2 | 255 | 0 |
| Roller | No | 20 | | 80 | 255 | 0 |
| Roller | No | 20 | | 80 | 255 | 0 |
| Tractor | No | 40 | 84 | | 255 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Mixer Truck | 64.6 | 60.7 | N/A | N/A | N/A | N/A | N/A |
| Paver | 63.1 | 60.1 | N/A | N/A | N/A | N/A | N/A |
| Paver | 63.1 | 60.1 | N/A | N/A | N/A | N/A | N/A |
| Roller | 65.8 | 58.9 | N/A | N/A | N/A | N/A | N/A |
| Roller | 65.8 | 58.9 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.8 | 65.9 | N/A | N/A | N/A | N/A | N/A |
| Total | 69.8 | 69.3 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Site 4 | Residential | 55.1 | 55.1 | 55.1 |

| Description | Impact Device | Usage(%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Concrete Mixer Truck | No | 40 | | 78.8 | 275 | 0 |
| Paver | No | 50 | | 77.2 | 275 | 0 |
| Paver | No | 50 | | 77.2 | 275 | 0 |
| Roller | No | 20 | | 80 | 275 | 0 |
| Roller | No | 20 | | 80 | 275 | 0 |
| Tractor | No | 40 | 84 | | 275 | 0 |

| | Calculated (dBA) | | Results | Noise Limits (dBA) | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Concrete Mixer Truck | 64 | 60 | N/A | N/A | N/A | N/A | N/A |
| Paver | 62.4 | 59.4 | N/A | N/A | N/A | N/A | N/A |
| Paver | 62.4 | 59.4 | N/A | N/A | N/A | N/A | N/A |
| Roller | 65.2 | 58.2 | N/A | N/A | N/A | N/A | N/A |
| Roller | 65.2 | 58.2 | N/A | N/A | N/A | N/A | N/A |
| Tractor | 69.2 | 65.2 | N/A | N/A | N/A | N/A | N/A |
| Total | 69.2 | 68.7 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Noise Limit Exceedance (dBA) | | | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

**APPENDIX E.5**

**Architectural Coating**

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Public Storage - North Hollywood_ArchitecturalCoating

---- Receptor #1 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 1 | Residential | 53.4 | 53.4 | 53.4 |

| | | | Equipment | | | |
|---|---|---|---|---|---|---|
| | Impact | | Spec Lmax | Actual Lmax | Receptor Distance | Estimated Shielding |
| Description | Device | Usage(%) | (dBA) | (dBA) | (feet) | (dBA) |
| Compressor (air) | No | 40 | | 77.7 | 40 | 0 |

| | Results | | | | | | |
|---|---|---|---|---|---|---|---|
| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Compressor (air) | 79.6 | 75.6 | N/A | N/A | N/A | N/A | N/A |
| Total | 79.6 | 75.6 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 2 | Residential | 56.3 | 56.3 | 56.3 |

| | | | Equipment | | | |
|---|---|---|---|---|---|---|
| | Impact | | Spec Lmax | Actual Lmax | Receptor Distance | Estimated Shielding |
| Description | Device | Usage(%) | (dBA) | (dBA) | (feet) | (dBA) |
| Compressor (air) | No | 40 | | 77.7 | 30 | 0 |

| | Results | | | | | | |
|---|---|---|---|---|---|---|---|
| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Compressor (air) | 82.1 | 78.1 | N/A | N/A | N/A | N/A | N/A |
| Total | 82.1 | 78.1 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

| | | Baselines (dBA) | | |
|---|---|---|---|---|
| Description | Land Use | Daytime | Evening | Night |
| Site 3 | Residential | 55.7 | 55.7 | 55.7 |

Equipment

| Description | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Compressor (air) | No | 40 | | 77.7 | 255 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Compressor (air) | 63.5 | 59.5 | N/A | N/A | N/A | N/A | N/A |
| Total | 63.5 | 59.5 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Site 4 | Residential | 55.1 | 55.1 | 55.1 |

Equipment

| Description | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Compressor (air) | No | 40 | | 77.7 | 275 | 0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night |
| Equipment | *Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax |
| Compressor (air) | 62.9 | 58.9 | N/A | N/A | N/A | N/A | N/A |
| Total | 62.9 | 58.9 | N/A | N/A | N/A | N/A | N/A |

*Calculated Lmax is the Loudest value.

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| | | Noise Limit Exceedance (dBA) | | | | |
|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | |
| Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |