EXHIBIT 4

NOISE STUDY AND ANALYSIS
ALEX THEATRE AND ART & ENTERTAINMENT DISTRICTS

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EXECUTIVE SUMMARY

The purpose of this Project is to conduct noise study for two districts within the City's Downtown Specific Plan (DSP) area that include the Alex Theatre District and the Art & Entertainment District. This noise report is intended to provide the City of Glendale (City) with an evaluation of proposed Noise Control Ordinance changes to accommodate later hours of amplified sound equipment use. This study will be used to: a) determine the appropriateness of extending the hours of operation for amplified sound within these two districts of the DSP; b) recommend remedial mitigation measures; c) recommend appropriate thresholds of violation; and d) recommend improvements/modifications to the affected Glendale Municipal Code (GMC) section. The study discusses applicable local noise regulations; applicable noise thresholds; the methodology used to analyze potential noise impacts; monitoring data; and modeled noise levels. The findings of the analyses are as follows:

- Based on field observations, existing commercial uses currently operate sound amplified equipment past the permitted hours of 10:00 PM as identified by Section 8.36.280 of the City's GMC.
- Existing short-term (10-minute) noise levels at nearby uses that operate sound amplifying equipment within the DSP during the weekend nighttime period ranged from a low of 63.6 dBA a high of 80.4 dBA between 8:00 PM – 10:00 PM. Additionally, noise levels ranged from a low of 64.8 dBA to a high of 80.9 dBA between 10:00 PM – 12:00 AM. Ambient noise levels in violation of Section 8.36.280 of the GMC which results in an excess of 15 dBA above the presumed standard for commercial uses of 65 dBA were exceeded at monitoring Site C. Noise levels were exceeded by a maximum of 0.9 dBA. Commercial uses within this monitoring area include Mr. Furley's Bar, Eden on Brand and Tavern on Brand. Dominant noise sources along these monitoring sites included vehicle traffic along Brand Boulevard and operation of amplified sound equipment between California Avenue and Wilson Avenue. However, existing noise levels are within the common sound ranges of ordinary (moderate) to busy street (loud) as defined in **Table 2** below.
- Existing long-term (24-hour) at nearby uses that operate sound amplifying equipment within the DSP ranged from a low of 63.7 dBA CNEL at the L Lofts residential building to a high of 77.5 dBA CNEL at the corner of California Avenue and Brand Boulevard. Ambient noise levels were not in violation of Section 8.36.040 of the GMC which results in an excess of 5 dBA above the presumed noise standard of 60 dBA for residential uses at the L Lofts residential building. Additionally, ambient noise levels were not in violation of Section 8.36.280 which results in an excess of 15 dBA above the presumed standard of 65 dBA for commercial uses at any of the monitoring sites. Additionally, existing noise levels were within the normally acceptable noise levels for residential uses and conditionally acceptable for office buildings, business commercial, and professional land use category when compared to the City's General Plan Land Use Compatibility to noise (refer to **Figure 2**).
- Existing traffic noise along Brand Boulevard range from a low of 66.7 dBA CNEL along Brand Boulevard from Broadway to Wilson Avenue to 67.6 dBA CNEL along Brand Boulevard north of Lexington Drive. Existing roadway noise levels are not in violation of Section 8.36.040 of the GMC and does not result in an excess of 5 dBA above the presumed standard of 65 dBA for commercial uses. In terms of the City's land use noise compatibility categories based on roadway traffic only, these segments are classified as normally acceptable for commercial uses and conditionally acceptable for residential multifamily.
- Future modeled exterior noise levels of amplified sound equipment operating between 7:00 AM – 2:00 AM ranged from a low of 43.3 dBA Leq to a high of 61.7 dBA Leq during the daytime and a low of 39.8 dBA Leq to a high of 58.2 dBA Leq during the nighttime at the Elevé Lofts and Skydeck Apartments and the multifamily residential uses at The Americana at Brand, respectively. Future exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses and would be consistent with Section 8.36.040 of the GMC.

- Future modeled exterior noise levels of amplified sound equipment operating between 7:00 AM – 2:00 AM ranged from a low of 47 dBA CNEL at the Elevé Lofts and Skydeck Apartments to a high of 64 dBA CNEL at the multifamily residential uses located at The Americana at Brand. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family residential uses. 24-hour CNEL noise levels would fall within the normally acceptable compatibility land use category.
- Future modeled SEL (Leq-1second) exterior noise levels of amplified sound equipment operating between 7:00 AM – 2:00 AM ranged from a low of 79 dBA (Leq-1second) at the Elevé Lofts and Skydeck Apartment to a high of 97 dBA (Leq-1second) at The Americana on Brand. SEL (Leq-1second) noise levels would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.
- Noise reduction steps could include retaining an independent third-party consultant monitoring services to ensure noise levels do not exceed the following limits:
  - Amplified sound equipment limited to 100 dBA within one foot from the source of noise for continuous duration of 15 minutes within the hour.
  - Amplified sound equipment limited to 97 dBA within one foot from the source of noise for continuous duration of 30 minutes within the hour.
  - Amplified sound equipment limited to 94 dBA within one foot from the source of noise for continuous duration of 1 hour.
  - Amplified sound equipment limited to 92 dBA within one foot from the source of noise for continuous duration of 1 and ½ hours.
  - Amplified sound equipment limited to 91 dBA within one foot from the source of noise for continuous duration of 2 hours.
  - Amplified sound equipment limited to 89 dBA within one foot from the source of noise for continuous duration of 3 hours.
  - Amplified sound equipment limited to 88 dBA within one foot from the source of noise for continuous duration of 4 hours.
  - Amplified sound equipment limited to 86 dBA within one foot from the source of noise for continuous duration of 6 hours.
  - Amplified sound equipment limited to 85 dBA within one foot from the source of noise for continuous duration of 8 hours.

In keeping with the above, the noise control ordinance recommendations with the operation of the amplified sound equipment would not be significant or detrimental to the surrounding land uses.

BACKGROUND

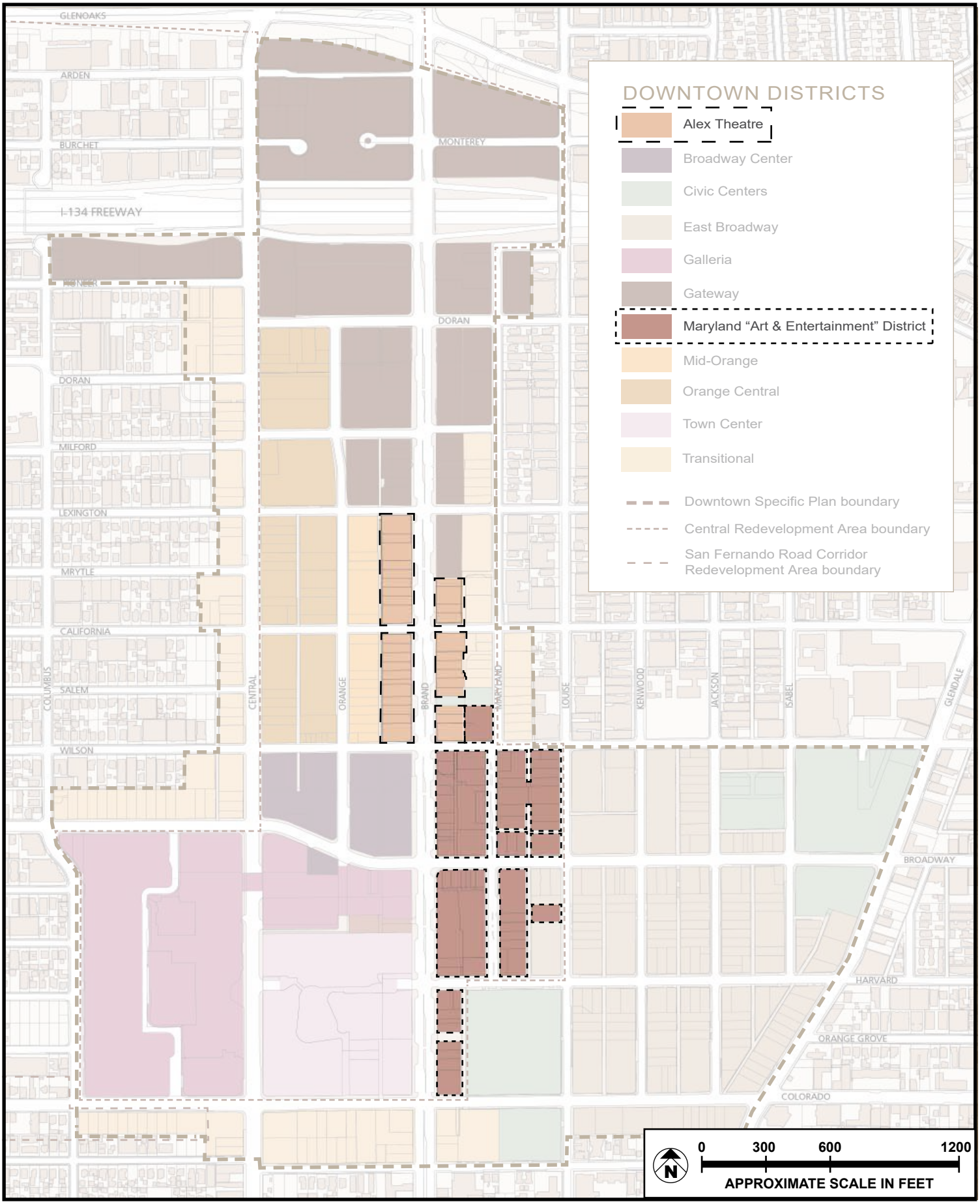
On November 7, 2006, Council adopted the DSP, which was intended to better reflect the community's vision for Glendale, including accommodating housing needs and ensuring downtown's long term economic success in the region. The Land Use chapter of the DSP outlines five key land use policies, including to "encourage appropriate land uses that extend the life of Downtown into the evenings and weekends so that daytime, weekend, and nighttime uses can support each other and share parking seven days a week." As shown in **Figure 1: Downtown Specific Plan**, the DSP is divided into eleven districts each having their own development standards. The Alex Theatre District and Maryland District (now the Art & Entertainment District) encourage a combination of entertainment, restaurant, and retail/service uses.

The DSP was amended in 2011 to encourage the concentration of arts, cultural and entertainment venues and associated retail uses on Artsakh Avenue between Harvard Street and Wilson Avenue, by specifically designated the area as Glendale's "Art and Entertainment District (A&E District)." The district is anchored at each end with important civic and cultural venues, including the Alex Theatre and Downtown Central Library. The intent of the district is to encourage the clustering of theaters, music clubs, comedy clubs, art galleries, and similar uses.

One-way businesses in downtown offer entertainment to the community is by providing music via amplified sound equipment. The City currently regulates the use of amplified sound equipment through the GMC Noise Control chapter (GMC Chapter 8.36, or "Noise Control Ordinance"). The Noise Control Ordinance regulates the permissible noise levels for daytime and nighttime activities and requires the use of amplified sound equipment to cease at 10:00 PM, whereas many businesses operate until later in the evening. This restriction on the use of amplified sound equipment acts as a restriction on business operations, which may hinder the DSP goals of promoting a vibrant downtown and extending its activity into the evenings. However, a significant portion of the DSP development has included multifamily residential housing units adjacent to entertainment areas where amplified sound late into the night causes a conflict.

The City is considering to proceed with exploring potential revisions to the Noise Control Ordinance to extend the allowed hours of operation of amplified sound equipment in the DSP Alex Theatre and Art & Entertainment Districts. The current limitation for commercial purposes is 7:00 AM – 10:00 PM Monday through Saturday except legal holidays, and for non-commercial purposes the limitation is 7:00 AM – 10:00 PM any day.

The purpose of this Project is to conduct a noise study for two districts of the City's DSP area that include the Alex Theatre District and the Art & Entertainment District. This study will be used to: a) determine the appropriateness of extending the hours of operation for amplified sound within these two districts of the DSP; b) recommend remedial mitigation measures; c) recommend appropriate thresholds of violation; and d) recommend improvements/modifications to the affected GMC section.



SOURCE: City of Glendale, 2014.

FIGURE **1**

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Downtown Specific Plan

057-002-16

FUNDAMENTALS OF SOUND

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted sound. Sound is characterized by various parameters that describe the physical properties of sound waves. These properties include the rate of oscillation (frequency); the distance between successive troughs or crests, the speed of propagation; and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level.

The unit of sound pressure expressed as a ratio to the faintest sound detectable to a person with normal hearing is called a decibel (dB). Decibels provide a logarithmic loudness scale, similar to the Richter scale used for earthquake magnitudes, which is used to keep sound intensity numbers at a convenient and manageable range. The human ear is not equally sensitive to all sound frequencies within the entire spectrum. Noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called A weighting, written as dBA. Further reference to decibels in this analysis should be understood to be A-weighted.

Several noise descriptors have been developed to evaluate the adverse effect of community noise on people. Since noise level fluctuates over time, an equivalent sound level (Leq) descriptor is used to describe typical time-varying instantaneous noise. Finally, because community receptors are more sensitive to unwanted noise intrusion during evening and nighttime hours, State law requires that an artificial decibel increment be added to noise occurring during those time periods. The 24-hour noise descriptor with a specified evening (7:00 to 10:00 PM) and nighttime (10:00 PM to 7:00 AM) penalty is called the Community Noise Equivalent Level (CNEL).

Noise sources can generally be categorized as one of two types: (1) point sources, such as stationary mechanical 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.[1] 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.[2]

Different types of scales are used to characterize the time-varying nature of sound. Applicable scales include the maximum noise level (Lmax), equivalent noise level (Leq), and the CNEL. Lmax is the maximum noise level measured during a specified period. 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 USDOT FHWA, Fundamentals and Abatement, 97.

2 USDOT FHWA, Fundamentals and Abatement, 97.

1-minute, 15-minute, 1-hour, or 24-hour periods. CNEL is an average A-weighted sound level measured over a 24-hour period. However, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained by adding 5 dBA to sound levels occurring during the evening, from 7:00 PM to 10:00 PM, and 10 dBA to sound levels occurring during the nighttime, from 10:00 PM to 7:00 AM. The 5 dBA and 10 dBA "penalties" are applied to account for increased noise sensitivity during the evening and nighttime hours. Day-night average level (Ldn) is the A-weighted equivalent sound level for a 24-hour period with an additional 10 dB imposed on the equivalent sound levels for nighttime hours of 10:00 PM to 7:00 AM. **Table 1: Noise Descriptors** identifies various terms for noise descriptors developed to measure sound levels over different periods of time, including A-weighted decibel or dBA.

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 (dB[A])	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.

Some common sounds on the dBA scale, relative to ordinary conservation, are provided in **Table 2: Common Sounds on the A-Weighted Decibel Scale**. As shown, the relative perceived loudness of sound doubles for each increase of 10 dBA, although a 10 dBA change corresponds to a factor of 10 in relative sound energy. Generally, sounds with differences of 2 dBA or less are not perceived to be noticeably different by most listeners.

TABLE 2
COMMON SOUNDS ON THE A-WEIGHTED DECIBEL SCALE

Sound	Sound Level (dBA)	Subjective Evaluations
Near Jet Engine	140	Deafening
Threshold of Pain	130	
Rock music, with amplifier	120	
Thunder, snowmobile (operator)	110	Very Loud
Boiler shop, power mower	100	
Orchestral crescendo at 25 feet, noisy kitchen	90	
Busy street	80	Loud
Interior of department store	70	
Ordinary conservation, 3 feet away	60	Moderate
Quiet automobiles at low speed	50	
Average office	40	Faint
City residence	30	
Quiet country residence	20	Very Faint
Rustle of leaves	10	
Threshold of hearing	0	

Source: U.S. Department of Housing and Urban Development, Aircraft Noise Impact – Planning Guidelines for Local Agencies, 1972

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receiver and the noise source reduces the noise level by about 5 dBA, whereas a solid wall or berm reduces noise levels by 5 to 10 dBA.[3] In addition, noise is substantially reduced from outdoor to indoor areas as a result of structural designs that attenuate noise. Windows are a common feature used by building occupants to control the effects of outdoor noise on interior noise levels. The exterior-to-interior reduction of noise for newer residential units is generally 20 dBA or more with the windows in a closed position. The minimum attenuation of exterior-to-interior noise provided by typical structures is provided in **Table 3: Outside-to-Inside Noise Attenuation**.

3 Federal Highway Administration, Highway Noise Fundamentals (1980), 18.

TABLE 3 OUTSIDE-TO-INSIDE NOISE ATTENUATION		
	Reduction in dBA	
Building Type	Open Windows	Closed Windows[a]
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Convalescent homes	17	25
Offices	17	25

Source: Bolt Beranek and Newman, Inc., Highway Noise: A Design Guide for Highway Engineers, NCHRP Report No. 117, (1971). Prepared for Highway Research Board, National Academy of Sciences, Washington, D.C.

Note: [a] As shown, structures with closed windows can attenuate exterior noise by a minimum of 25.0 to 30.0 dBA.

The National Institute for Occupational Safety and Health (NIOSH) established Recommended Exposure Limits (REL) for noise based on the best available science and practice. The NIOSH REL for noise is 85 decibels, using the A-weighting frequency response (often written as dBA) over an 8-hour average, usually referred to as a Time-Weighted Average (TWA). Exposure at or above this level are considered hazardous. Standards specify a maximum allowable daily noise dose, expressed in percentages. For example, a person exposed to 85 dBA per NIOSH over an 8-hour period, will reach 100 percent of their daily noise dose. The noise dose is based on both the sound exposure level and how long it lasts (duration) so for each increase or 3-dB in noise levels, the duration of the exposure should be cut in half. **Table 4: Exposure Levels** illustrates the relationship between sound exposure levels and duration.

TABLE 4 EXPOSURE LEVELS	
Duration Per Day Continuous Hours	Noise Level dBA
8	85
6	86
4	88
3	89
2	91
1 ½	92
1	94
½	97
¼ or less	100

Sound exposure level (SEL) is a time-integrated measure, expressed in decibels, of the sound energy of a single noise event at a reference duration of one second. The sound level is integrated over the period that it exceeds a threshold. Therefore, SEL accounts for both the maximum sound level and the duration of the sound. The SEL for a particular noise event is a numerically higher value than the Lmax for the same event. This is because the SEL consolidates the energy of the entire noise event into a reference duration of one second. The SEL is not "heard", but is a derived value used for calculation of cumulative noise exposure as defined by the Day-night average sound level (DNL). SELs for noise events depend on the location of the noise source relative to the sensitive use.

REGULATORY SETTING

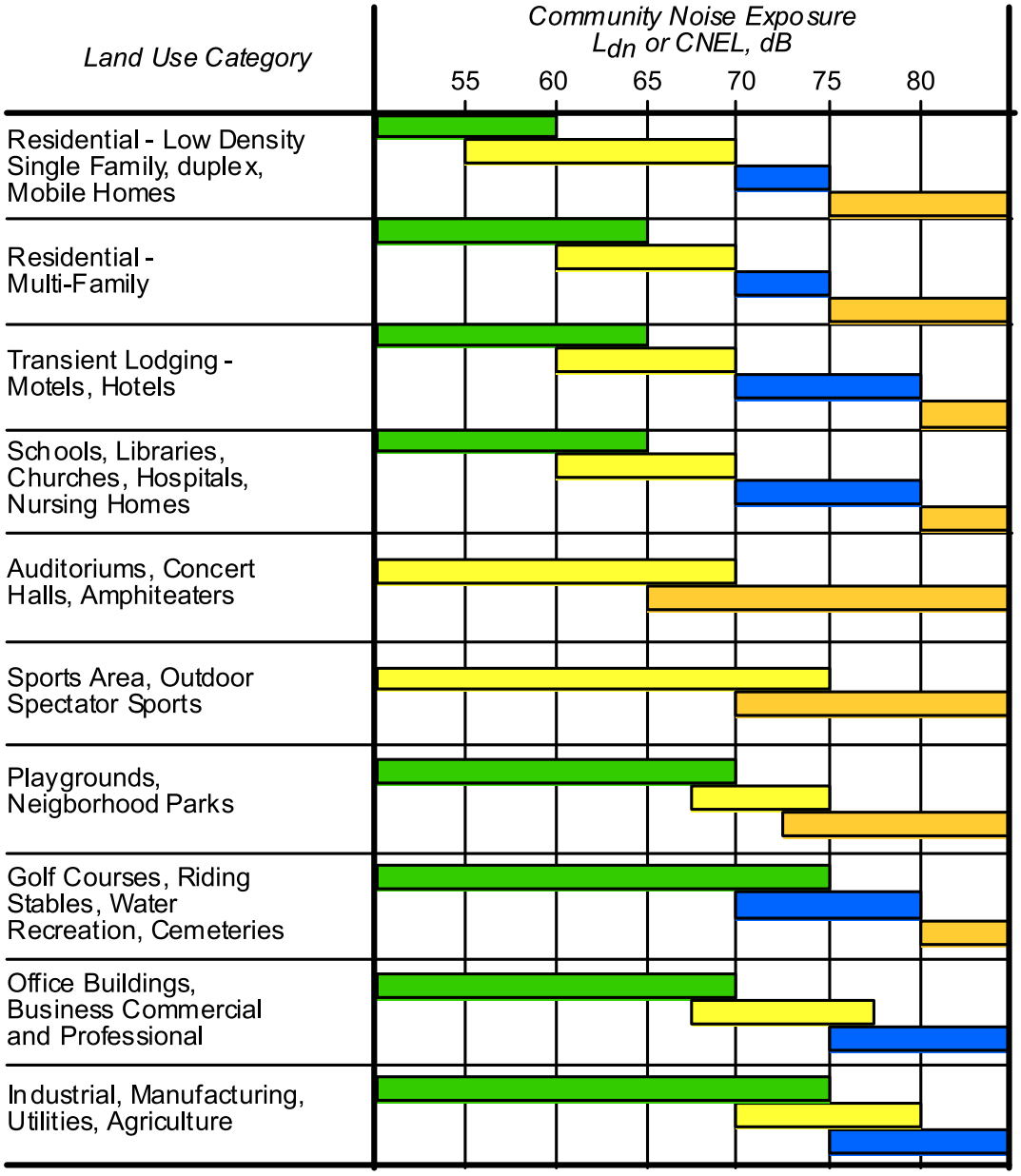
City of Glendale General Plan

The City of Glendale General Plan Noise Element is a comprehensive program for including noise management in the planning process. The Noise Element identifies noise sensitive land uses and noise sources and defines areas of noise impact for the purpose of developing programs. The Noise Element follows the State of California Governor's Office of Planning and Research General Plan Guidelines and State Government Code Section 65302(f) relating to general plan requirements.

The Noise Element provides recommended noise standards for use in assessing the compatibility of proposed land uses within the noise environment, and for use in developing city policies related to land uses and acceptable noise levels. Although the Noise Element contains recommended noise standards, the document does not actually set those standards. Noise standards in Glendale are specified in the Building Code (i.e., indoor noise standard for non-single-family residential, achieved by regulating the use of building materials for new construction to ensure they block exterior noise) and the Noise Control Ordinance, which is identified in the Noise Element as the most effective method to control community noise from existing uses.

The Land Use Compatibility to Noise (refer to **Figure 2: Noise/Land Use Compatibility Table**) identifies the acceptable limit noise exposure for various land-use categories within the City. Noise exposure for multifamily uses is "normally acceptable" when the CNEL at exterior residential locations is equal to or below 65 dBA, "conditionally acceptable" when the CNEL is between 60 to 70 dBA, and "normally unacceptable" when the CNEL exceeds 70 dBA. The Noise Element established an interior noise level standard for multifamily uses of 45 dBA CNEL or less. The interior and exterior noise standards established in the Noise Element are shown in **Table 5: Interior and Exterior Noise Standards**. Compliance of these standards would be incorporated by conditions of approval or environmental mitigation measures and evaluated as part of City Development Review and building permit plan check.

Table 1
Noise/Land Use Compatibility Table



INTERPRETATION

Normally Acceptable
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal, conventional construction, without any special noise insluation 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: State of Califronia, "General Plan Guidelines," 1998

SOURCE: City of Glendale, 2014.

FIGURE **2**

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Noise/Land Use Compatibility Table

057-002-16

TABLE 5 INTERIOR AND EXTERIOR NOISE STANDARDS			
Land Use Categories		Noise Standard CNEL	
Categories	Uses	Interior	Exterior
Residential	Single-Family	45[a]	65[b]
	Multi-Family	45[a]	65[c]
	Residential within Mixed Use	45[a]	--
Commercial	Hotel, Motel, Transient Lodging	45[a]	--
Institutional	Hospital, School Classroom, Church, Library	45	--
Open Space	Parks[d]	--	65

Note:

[a] Applies to the indoor environment excluding bathrooms, toilets, closets and corridors.

[b] Applies to the outdoor environment limited to the private yard of single-family residences (normally the rear yard).

[c] Applies to the patio area where there is an expectation of privacy (i.e., not a patio area which also serves as, or is adjacent to, the primary entrance to the unit).

[d] Only applies to parks where peace and quiet are determined to be of prime importance, such as hillside open space areas open to the public. Generally would not apply to urban parks or active use parks.

Source: City of Glendale, Noise Element of the General Plan, May 2007.

Noise Ordinance

The most effective method to control community noise impacts from non-transportation noise sources is through application of the Community Noise Ordinance. Section 8.36.040 of the GMC provides presumed noise standards for various designated zones and are shown in **Table 6: Presumed Noise Standards**. Noise in excess of the presumed ambient (or actual ambient if it is less), plus 5 dBA, is a violation.

Additionally, Section 8.36.280 of the GMC regulates the use of sound-amplifying equipment, including permitted hours of operation for equipment, a 15 dBA noise limit above presumed/ambient noise levels, a 200-foot buffer around sensitive uses (i.e., churches, schools, hospitals, libraries, and city/county buildings) where the equipment may not be used, and a general limit on the volume to prevent it from being unreasonably loud/disturbing/etc.

TABLE 6 PRESUMED NOISE STANDARDS		
Sound	Sound Level (dBA)	Subjective Evaluations
Cemetery and residential (single family and duplex)	45	Nighttime
Cemetery and residential (single family and duplex)	55	Daytime
Residential (multifamily, hotels, motels, and transient lodgings)	60	Anytime
Central business district and commercial	65	Anytime
Industrial	70	Anytime

Source: City of Glendale GMC Section 8.36.040: Presumed Noise Standards.

METHODOLOGY

Ambient Noise Measurements

The DSP is located in a highly urbanized area of Glendale – an active existing noise environment. To determine existing ambient noise levels in the area (ambient) for purposes of determining any forecasted increase from amplified sound from restaurants, two rounds of six (6) short-term (10-minute) [between 8:00 PM – 10:00 PM and 10:00 PM – 12:00 AM] and four (4) long-term (over 24 hours) measurements were performed at various locations within the DSP. Noise measurements were taken between Thursday, July 29, 2021, through Monday, August 2, 2021, with a Larson Davis Type 1 meter. This meter satisfies Section 8.36.030 of the City's Municipal Code related to decibel measurement criteria and the American National Standards Institute standard for general environmental noise measurement instrumentation. Random incidence microphones with windscreens were used, given the outdoor (i.e., free field) conditions of monitoring. The sound level averages were measured as A-weighted, slow-time-weighted (1-minute period) sound pressure level variables, commonly used for measuring environmental sounds. Sound levels presented in this report are in terms of dBA.

Because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise comparison of a new noise source relative to the ambient to which one has adapted is an accepted method for determining a person's subjective reaction to a new noise source.

Roadway Noise

In addition to the ambient noise measurements within the DSP, the existing traffic noise on local roadways in the surrounding areas was calculated to quantify the 24-hour CNEL noise levels using available 2016 average daily trips (ADTs) provided by the City. For the downtown corridors, a factor of 1.01 percent was taken into account for each year to take into growth within the DSP, as directed by the City. These intersections and connecting roadway segments were selected for the generation of existing traffic noise. Traffic noise levels were calculated using the Federal Highway Administration Traffic Noise Model (FHWA TNM).

Noise Modeling

SoundPLAN (version 8.2) was utilized to model the future operational noise levels associated with changes to Noise Control Ordinance to accommodate later hours of amplified sound equipment use within the DSP. The software uses various inputs to analyze the topography, vegetation, vehicle traffic, existing and proposed noise sources, and existing and proposed barriers to depict noise contours at varying distances. The software utilizes algorithms (based on the inverse square law) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. The City's General Plan Noise Element defines sensitive receptors as, but not limited to, areas containing residential uses, schools, hospitals, rest

homes, long-term medical or mental-care facilities, or any other land use area deemed noise sensitive by the local jurisdiction.[4]

Inputs were assumed within the model related to the layout of commercial business and changes to the Noise Control Ordinance to accommodate later hours of amplified sound equipment use. For example:

- Although amplified sound equipment is permitted to be operated between 7:00 AM – 10:00 PM, based on field observations operations occurred intermittently between 9:00 PM – 1:00 AM during the weekend period. To simulate a future daily worst-case scenario, the model assumes amplified sound equipment are operated at 100 percent intensity between the proposed hours of 7:00 AM – 2:00 AM of the following day.
- To quantify events related to amplified sound equipment, point sources referencing a live band with sound system were modeled at the exterior of various commercial uses with a maximum exposure level of 100 dBA one feet from the source.

ENVIRONMENTAL SETTING

As mentioned previously, the DSP is located in a highly urbanized area of Glendale – an active noise environment. More specifically, the Alex Theatre District is concentrated along Brand Boulevard, north of Wilson Ave and south of Lexington Drive (refer to **Figure 1**), and features a variety of intimate-scale retail, restaurant and service uses located within traditional storefronts. The Alex Theatre District encourages entertainment activities, restaurants, small-scale retail business, and other such pedestrian-oriented activities. The Maryland "Art & Entertainment" District is located between the Downtown core and the East Broadway mixed-use district to the east and anchored to the north by the Alex Theatre and the Central Library to the south (refer to **Figure 1**). This district is concentrated by arts, cultural and entertainment venues and associated dining and retail uses on Maryland Avenue between Harvard and Wilson.

Ambient Noise Levels

The study area is conducted along Brand Boulevard between W. Lexington Drive and E. Colorado Street near commercial uses that operate sound amplifying equipment. Meridian Consultants conducted two rounds of short-term (10-minute) measurements at six (6) locations between 8:00 PM – 10:00 PM and 10:00 PM – 12:00 AM on Friday, July 30, 2021, as shown in **Figures 3** through **8: Short-term Ambient Noise Monitoring Locations**. Additionally, long-term (24-hour) measurements were conducted at four (4) locations between Thursday, July 29 – Monday August 2, 2021 and are shown in **Figures 9** through **12: Long-term Ambient Noise Monitoring Locations**.

Short-term Noise Levels

Table 7: Existing Short-term Noise Measurements contains the results of the noise monitoring conducted over a 10-minute period (refer to **Figures 3** through **8**) nearby uses which operate sound amplifying equipment. These measured noise levels represent two rounds of measurements from the

4 City of Glendale, *General Plan: Noise Element*, accessed August 2021, https://www.glendaleca.gov/home/showpublisheddocument/828/635231021922170000

weekend nighttime period between the hours of 8:00 PM to 10:00 PM and 10:00 PM to 12:00 AM. Amplified sound equipment was generally used throughout various commercial uses between the hours of 9:00 PM – 1:00 AM, exceeding the permitted hours ending at 10:00 PM. As shown, noise levels during the first round of measurements between 8:00 PM – 10:00 PM ranged from a low of 63.6 dBA at Site E to a high of 80.4 dBA at Site D. Additionally, noise levels during the second round of measurements between 10:00 PM – 12:00 AM ranged from a low of 64.8 dBA at Site E to a high of 80.9 dBA at Site D. Noise levels were generally higher between 10:00 PM – 12:00 AM for Sites A, B, C and E.

As mentioned previously, Section 8.36.280 of the GMC regulates the use of sound-amplifying equipment, providing a 15 dBA noise limit above presumed/ambient noise levels. As shown in **Table 7**, ambient noise levels in excess of 15 dBA above the presumed standard for commercial uses of 65 dBA were exceeded at Monitoring Site C. Noise levels were exceeded by a maximum of 0.9 dBA, resulting in noise levels of 80.9 dBA (Leq 10-minute) between 10:00 PM – 12:00 AM. Commercial uses within the monitoring area include Mr. Furley's Bar, Eden on Brand and Tavern on Brand.

When compared to the common sounds on the A-weighted decibel scale provided in **Table 2**, noise levels are within the range of ordinary conservation (moderate) to busy street (loud), which are common levels along major arterials such as Brand Boulevard.

TABLE 7 EXISTING SHORT-TERM NOISE MEASUREMENTS							
Monitoring Site	**Land Use Type**	**Adjacent Use**	**Approximate Address**	**Time Period**	**10-minute Leq**	**Presumed Noise Standard plus 15 dBA[1]**	**Exceeds Presumed Standard?**
Site A	Commercial	Carousel Restaurant	304 N. Brand Boulevard	8:00 PM – 10:00 PM	70.6	80	No
				10:00 PM – 12:00 AM	73.6	80	No
Site B	Commercial	Giggles Night Club	215 N. Brand Boulevard	8:00 PM – 10:00 PM	67.8	80	No
				10:00 PM – 12:00 AM	77.3	80	No
Site C	Commercial	Eden on Brand	214 N. Brand Boulevard	8:00 PM – 10:00 PM	80.4	80	**Yes**
				10:00 PM – 12:00 AM	80.9	80	**Yes**
Site D	Commercial	Jewelry Mart	200 N. Brand Boulevard	8:00 PM – 10:00 PM	71.4	80	No
				10:00 PM – 12:00 AM	71.2	80	No
Site E	Commercial	Public Parking	113 Artsakh Avenue	8:00 PM – 10:00 PM	63.6	80	No
				10:00 PM – 12:00 AM	64.8	80	No
Site F	Commercial	L.A. Banquets Hall	109 E. Harvard Street	8:00 PM – 10:00 PM	69.7	80	No
				10:00 PM – 12:00 AM	68.7	80	No

Note:
[1] Presumed noise standard of 65 dBA for commercial uses plus 15 dBA for sound amplified equipment.
*Source. Refer to **Appendix A.1** for short-term noise monitoring sheets.*

Long-term Noise Levels

The long-term noise results conducted between Thursday, July 29 through Monday, August 2, 2021, are provided in **Table 8: Existing Long-term Noise Measurements** and their locations are shown in **Figures 9** through **12**. Noise measurements include the following periods: daytime, evening, nighttime and 24-hour CNEL. Daytime period is the average noise exposure during the hourly periods from 7:00 AM to 7:00 PM. Evening period is the average noise exposure during the hourly periods from 7:00 PM to 10:00 PM. Nighttime period is the average noise exposure during the hourly periods from 10:00 PM to 7:00 AM. 24-hour CNEL is the community noise exposure that differentiates between daytime, evening and nighttime noise exposure. These adjustments add 5 dBA for the evening period (7:00 PM to 10:00 PM) and add 10 dBA for the nighttime period (10:00 PM to 7:00 AM). As mentioned previously, the 5- and 10-dB penalties are applied to account for increase noise sensitivity during the evening and nighttime hours. The following discussion provides a summary of the results for each site.

Monitoring Site 1 is located within the L Lofts residential building to east of the commercial uses that operate amplified sound equipment which includes Eden on Brand, Tavern on Brand and Mr. Furley's Bar. The noise meter was placed on the roof of the L Lofts residential building with a direct line of sight to the commercial uses. As shown in **Table 8**, daytime period average noise levels ranged from 57.0 – 58.4 dBA, evening period average noise levels ranged from 59.6 – 60.7 dBA, and nighttime period average noise levels ranged from 53.3 – 57.7 dBA. 24-hour CNEL averages ranged from 60.2 – 64.8 dBA CNEL and is within the normally acceptable range of 50 to 65 dBA CNEL for residential – multifamily land use category when compared to the City's General Plan Land Use Compatibility to Noise (refer to **Figure 2**). Existing noise levels did not exceed the presumed noise standard for residential multi-family uses of 60 dBA plus 5 dBA during any period of monitoring. Noise levels remain consistent with Section 8.36.040 of the GMC.

Monitoring Site 2 is located on the corner of W. Wilson Avenue and N. Brand Boulevard. The noise meter was placed on the ground level of the Brand+ residential building, located directly to the southwest of the commercial uses that operate sound amplifying equipment which includes Eden on Brand, Tavern on Brand and Mr. Furley's Bar. As shown in **Table 8**, daytime period average noise levels ranged from 68.8 – 72.6 dBA, evening period average noise levels ranged from 70.8 – 72.4 dBA, and nighttime period average noise levels ranged from 61.9 – 68.5 dBA. 24-hour CNEL averages ranged from 71.0 – 75.8 dBA CNEL and is within the conditionally acceptable range of 67.5 to 77.5 dBA CNEL for office buildings, business commercial and professional land use category when compared to the City's General Plan Land Use Compatibility to Noise (refer to **Figure 2**). Existing noise levels did not exceed the presumed noise standard of sound amplified equipment for commercial uses of 65 dBA plus 15 dBA during the monitoring period.

Monitoring Site 3 is located on the corner of W. California Avenue and Brand Boulevard. The noise meter was placed on the ground level, located to the south of commercial uses that operate amplified sound equipment including Carousel restaurant. As shown in **Table 8**, daytime period average noise levels

ranged from 67.5 – 70.5 dBA, evening period average noise levels ranged from 70.4 – 72.6 dBA, and nighttime period average noise levels ranged from 63.6 – 70.7 dBA. 24-hour CNEL averages ranged from 70.6 – 77.5 dBA CNEL and is within the conditionally acceptable range of 67.5 to 77.5 dBA CNEL for office buildings, business commercial and professional land use category when compared to the City's General Plan Land Use Compatibility to Noise (refer to **Figure 2**). Existing noise levels did not exceed the presumed noise standard of sound amplified equipment for commercial uses of 65 dBA plus 15 dBA during the monitoring period.

Monitoring Site 4 is located on the corner of Americana Way and N. Brand Boulevard. The noise meter was placed on the ground level, located to the west of commercial uses that operate amplified sound equipment including L.A. Banquets Hall venue and The Famous bar. As shown in **Table 8**, daytime period average noise levels ranged from 65.9 – 72.6 dBA, evening period average noise levels ranged from 71.0 – 73.8 dBA, and nighttime period average noise levels ranged from 64.5 – 70.4 dBA. 24-hour CNEL averages ranged from 71.6 – 77.2 dBA CNEL and is within the conditionally acceptable range of 67.5 to 77.5 dBA CNEL for office buildings, business commercial and professional land use category when compared to the City's General Plan Land Use Compatibility to Noise (refer to **Figure 2**). Existing noise levels did not exceed the presumed noise standard of sound amplified equipment for commercial uses of 65 dBA plus 15 dBA during the monitoring period.

TABLE 8 EXISTING LONG-TERM NOISE MEASUREMENTS											
Monitoring Site	Land Use Type	Adjacent Use	Approximate Address	Time Period	Thursday 7/29	Friday 7/30	Saturday 7/31	Sunday 8/1	Monday 8/2	Presumed Noise Standard	Exceeds Presumed Standard?
					dBA						
Site 1	Residential	L Lofts Building	215 N. Maryland Avenue	Daytime[1]	N/A	N/A	58.4	57.6	57.0	65[4]	**No**
				Evening[2]	N/A	60.7	60.4	59.6	N/A	65[4]	**No**
				Nighttime[3]	N/A	57.7	57.7	56.5	53.3	65[4]	**No**
				24-hour CNEL	N/A	64.3	64.8	63.7	60.2	65[4]	**No**
Site 2	Commercial	Brand+	120 W. Wilson Avenue	Daytime[1]	68.8	72.6	70.1	69.6	71.4	80[5]	**No**
				Evening[2]	71.5	72.3	72.4	70.8	N/A	80[5]	**No**
				Nighttime[3]	65.9	67.7	65.0	68.5	61.9	80[5]	**No**
				24-hour CNEL	73.8	75.8	73.8	75.5	71.0	80[5]	**No**
Site 3	Commercial	Panera Bread	300 N. Brand Boulevard	Daytime[1]	68.5	70.5	69.6	69.8	67.5	80[5]	**No**
				Evening[2]	70.7	71.9	72.6	70.4	N/A	80[5]	**No**
				Nighttime[3]	66.8	70.7	67.3	67.5	63.6	80[5]	**No**
				24-hour CNEL	74.2	77.5	75.0	74.8	70.6	80[5]	**No**
Site 4	Commercial	The Americana on Brand	750 Americana Way	Daytime[1]	65.9	72.6	71.5	70.2	69.6	80[5]	**No**
				Evening[2]	71.0	73.7	73.8	71.9	N/A	80[5]	**No**
				Nighttime[3]	64.5	66.3	66.2	70.4	64.2	80[5]	**No**
				24-hour CNEL	72.4	75.3	75.1	77.2	71.6	80[5]	**No**

Note:
[1] Daytime = 7:00 AM – 7:00 PM
[2] Evening = 7:00 PM – 10:00 PM
[3] Nighttime = 10:00 PM – 7:00 AM
[4] Presumed noise standard of 60 dBA for residential uses plus 5 dBA
[5] Presumed noise standard of 65 dBA for commercial uses plus 15 dBA for sound amplified equipment.
N/A = No data available.
*Refer to **Appendix A.2** for long-term noise monitoring sheets.*

Roadway Noise Levels

Table 9: Existing Roadway Noise Levels provides the calculated CNEL for the analyzed local roadway segments based on traffic volumes within the DSP and study area. CNEL levels attributed to roadway traffic in year 2021 range from 66.7 dBA CNEL along Brand Boulevard from Broadway to Wilson Avenue to 67.6 dBA CNEL along Brand Boulevard north of Lexington Drive. In terms of the City's land use noise compatibility categories based on roadway traffic only, these segments are classified as normally acceptable for commercial uses and conditionally acceptable for residential multifamily at a distance of 75 feet from the receptor.

TABLE 9
EXISTING ROADWAY NOISE LEVELS

Street	From	To	Year	Average Daily Trips	Roadway Noise (CNEL)
Brand Boulevard	Colorado Street	Harvard Street	2016	23,594	67.0
			2021	24,798	67.3
Brand Boulevard	Broadway	Wilson Avenue	2016	20,917	66.5
			2021	21,984	66.7
Brand Boulevard	n/o Lexington Drive	N/A	2016	25720	67.4
			2021	27032	67.6

Note: Refer to Appendix B for roadway noise monitoring sheets.
N/A = Not Available.
n/o = north of.

Sensitive Uses

The Alex Theatre District and A&E District encourage a combination of entertainment, restaurant, and retail/service uses. Additionally, a significant portion of the DSP development includes multifamily residential housing units adjacent to entertainment where amplified sound late into the night may cause a conflict. An overview of the surrounding land uses in relation to the noise monitoring sites is provided in **Figure 13: Sensitive Receptor Map** and are described below:

- **Site 1:** Located at the L Lofts residential building (215 N. Maryland Avenue), commercial uses within this Site that may operate amplified sound equipment include Mr. Furley's Bar (224 N. Brand Boulevard), Eden on Brand (214 N. Brand Boulevard), Tavern on Brand (208 N. Brand Boulevard).
- **Site 2**: Located at The Brand residential building, patio/balcony areas face towards the commercial uses along Brand Boulevard and Wilson Avenue.
- **Site 3**: Located on the corner of W. California Avenue and Brand Boulevard, commercial uses that may operate amplified sound equipment include the Carousel Restaurant (319 N. Maryland Avenue). Multifamily uses are located to the east along N. Maryland Avenue with the nearest including the Maryland Capri building located at 319 N. Maryland Avenue.
- **Site 4**: Located at the corner of Americana Way and S. Brand Boulevard, sensitive uses include the Americana residential uses on the western portion of Brand Boulevard. Uses that may operate amplified sound equipment include the commercial uses within the Americana and the banquet facility such as the L.A. Banquets Hall (109 E. Harvard Street).

- **Site A**: Located just north of W. California Avenue, commercial uses include Carousel Restaurant and other various restaurant uses along Brand Boulevard. Multifamily uses such as the Maryland Capri building are located to the east at 319 N. Maryland Avenue.
- **Site B**: Located on the western portion of Brand Boulevard, commercial uses that may operate amplified sound equipment include the Giggles Night Club. The nearest sensitive uses include the L Lofts residential building located at 215 N. Maryland Avenue.
- **Site C**: Located at the eastern of the Brand Boulevard, commercial uses that may operate amplified sound equipment include Mr. Furley's Bar, Eden on Brand and Tavern on Brand. The nearest sensitive uses include the L Lofts residential building located at 215 N. Maryland Avenue.
- **Site D**: Located at the corner of Brand Boulevard and Wilson Avenue, uses that may operate amplified sound equipment include Giggles Night Club located at 215 N. Brand Boulevard. Multifamily residential uses are located to the southwest at The Brand residential building.
- **Site E**: Located within the A&E District, uses include ground floor retail along Artsakh Avenue. The nearest sensitive uses include the Craftstay Glendale Home Suites to the east located at 111 N. Louise Street and the Elevé Lofts and Skydeck Apartments to the south located at 200 E. Broadway.
- **Site F**: Located at the corner of Americana Way and S. Brand Boulevard, sensitive uses include the Americana residential uses on the western portion of Brand Boulevard. Uses that may operate amplified sound equipment include the commercial uses within the Americana and the L.A. Banquet Hall along E. Harvard Street.

North

South

West

East

SOURCE: Google Earth - 2021

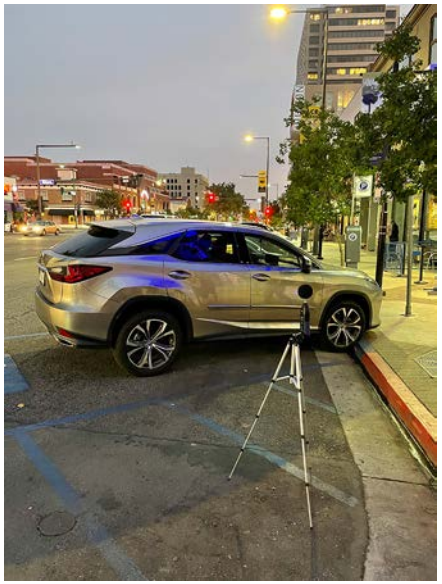
FIGURE **3**

Meridian Consultants

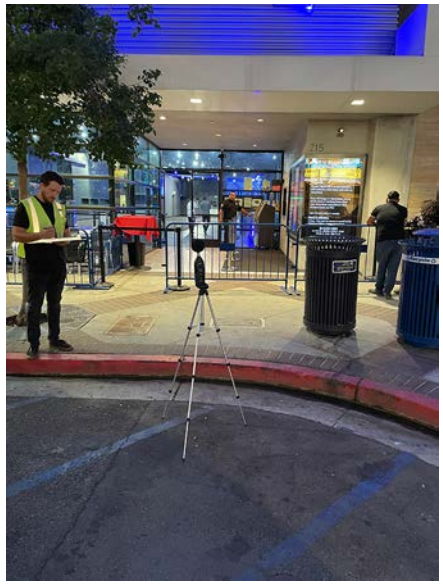
Short-term Ambient Noise Monitoring Locations (Site A)

057-003-20

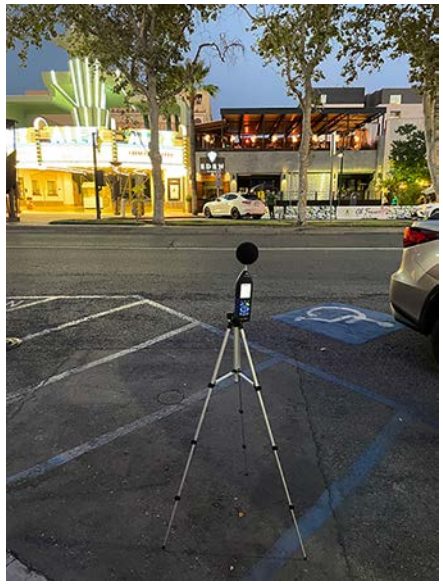
North



South



West



East

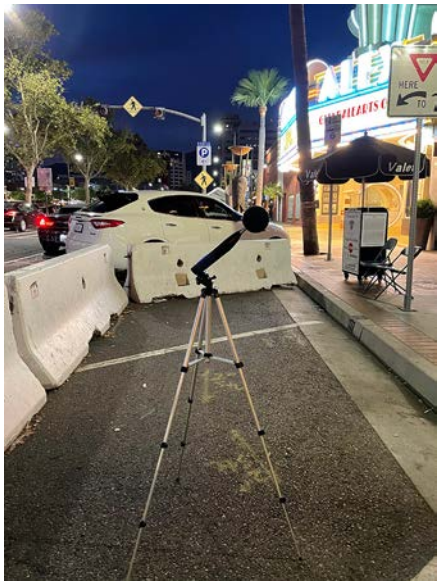
SOURCE: Google Earth - 2021

FIGURE **4**

Meridian Consultants

Short-term Ambient Noise Monitoring Locations (Site B)

057-003-20



North

South

West

East

SOURCE: Google Earth - 2021

FIGURE **5**

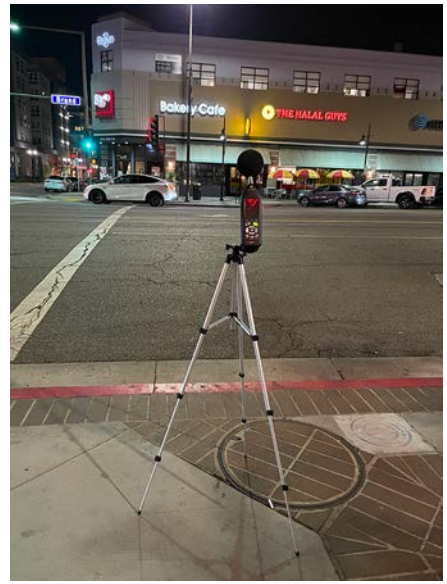
Meridian Consultants

Short-term Ambient Noise Monitoring Locations (Site C)

057-003-20

North

South



West

East

SOURCE: Google Earth - 2021

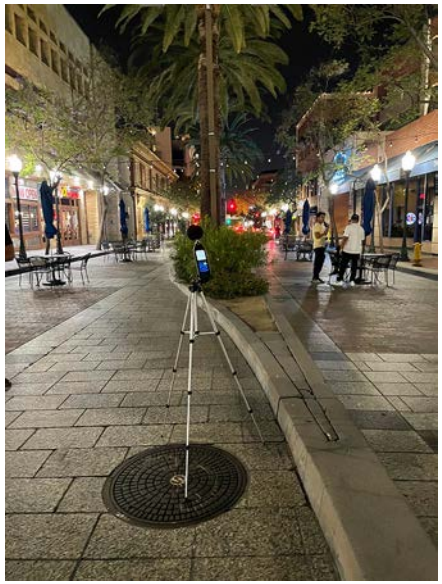
FIGURE **6**

Meridian Consultants

Short-term Ambient Noise Monitoring Locations (Site D)

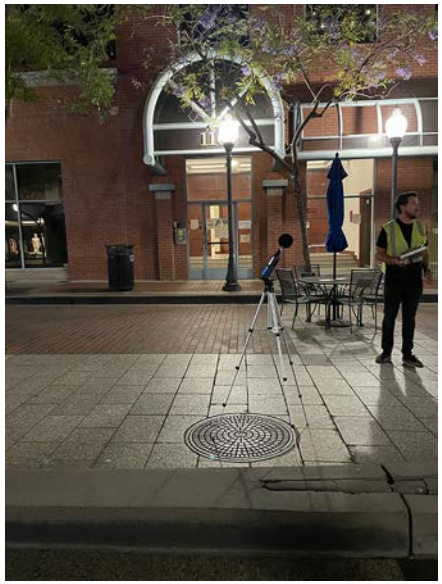
057-003-20

North



South

West



East

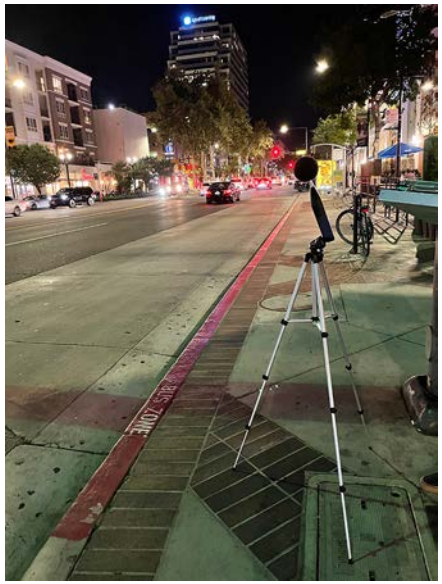
SOURCE: Google Earth - 2021

FIGURE **7**

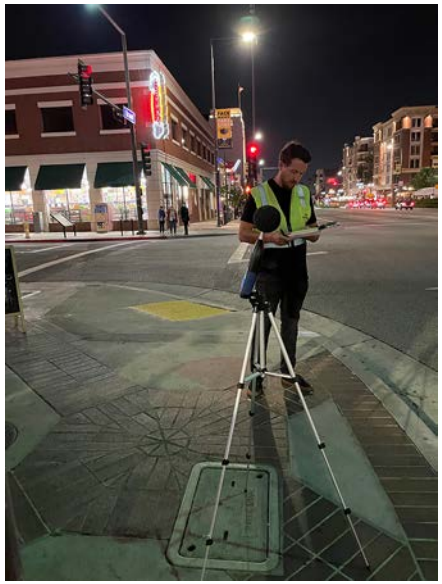
Meridian Consultants

Short-term Ambient Noise Monitoring Locations (Site E)

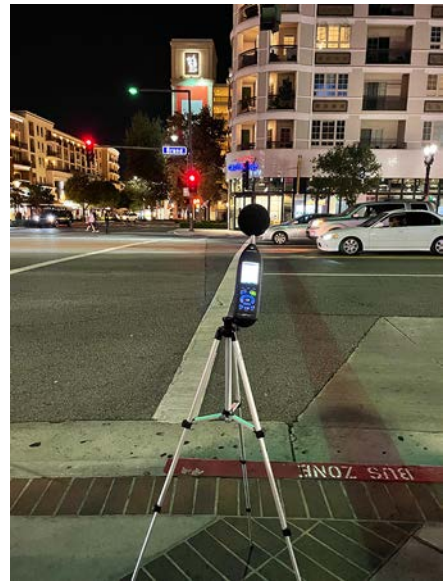
057-003-20



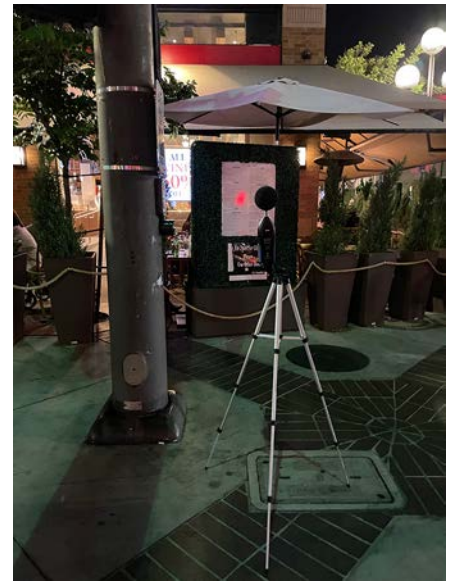
North



South



West



East

SOURCE: Google Earth - 2021

FIGURE **8**

Meridian Consultants

Short-term Ambient Noise Monitoring Locations (Site F)

057-003-20

West

SOURCE: Google Earth - 2021

FIGURE **9**

Meridian Consultants

Long-term Ambient Noise Monitoring Locations (Site 1)

057-003-20

North

South

West

East

SOURCE: Google Earth - 2021

FIGURE **10**

Meridian Consultants

Long-term Ambient Noise Monitoring Locations (Site 2)

057-003-20

North

South

West

East

SOURCE: Google Earth - 2021

FIGURE **11**

Meridian Consultants

Long-term Ambient Noise Monitoring Locations (Site 3)

057-003-20

North

South

West

East

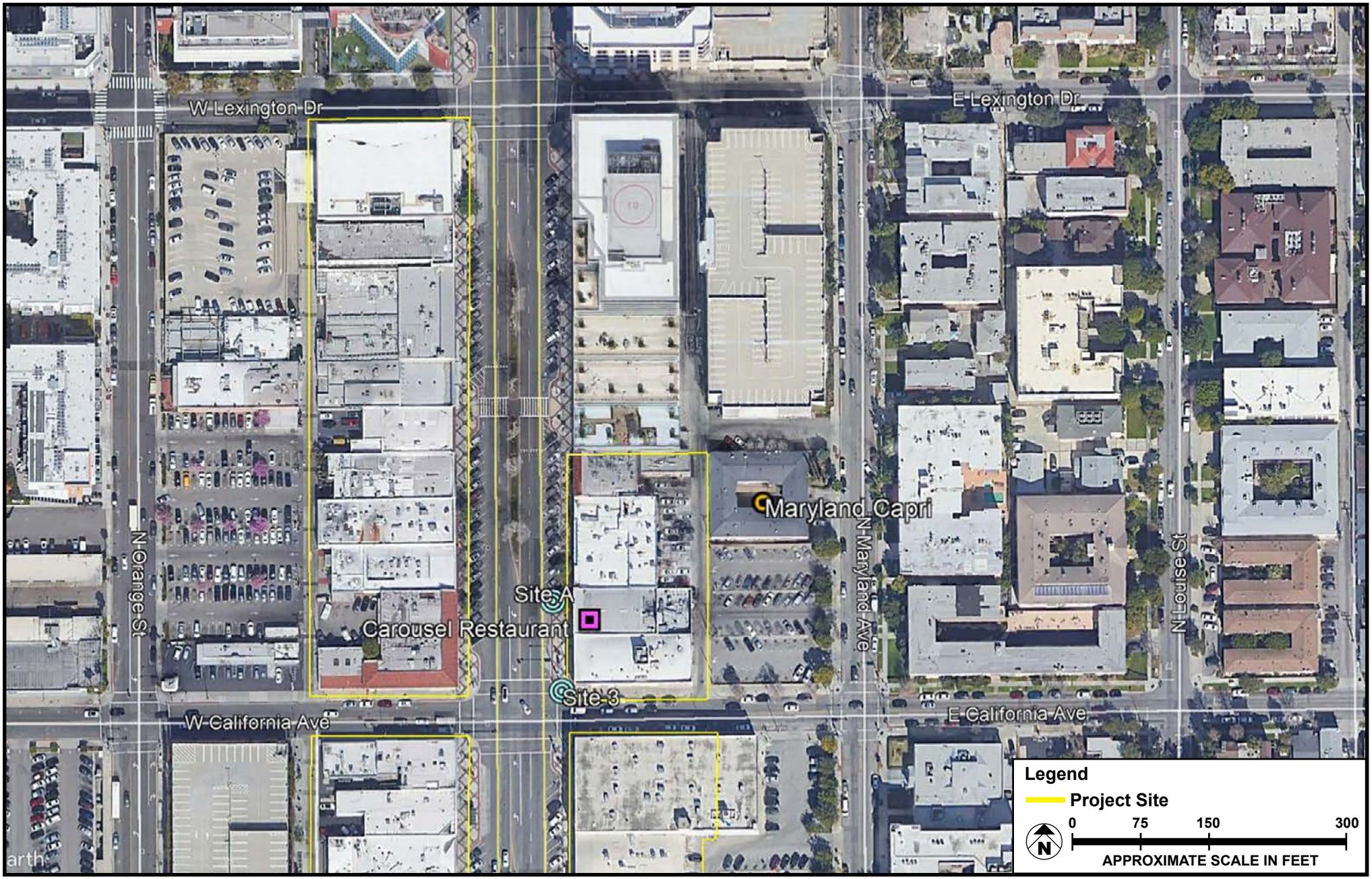
SOURCE: Google Earth - 2021

FIGURE **12**

Meridian Consultants

Long-term Ambient Noise Monitoring Locations (Site 4)

057-003-20



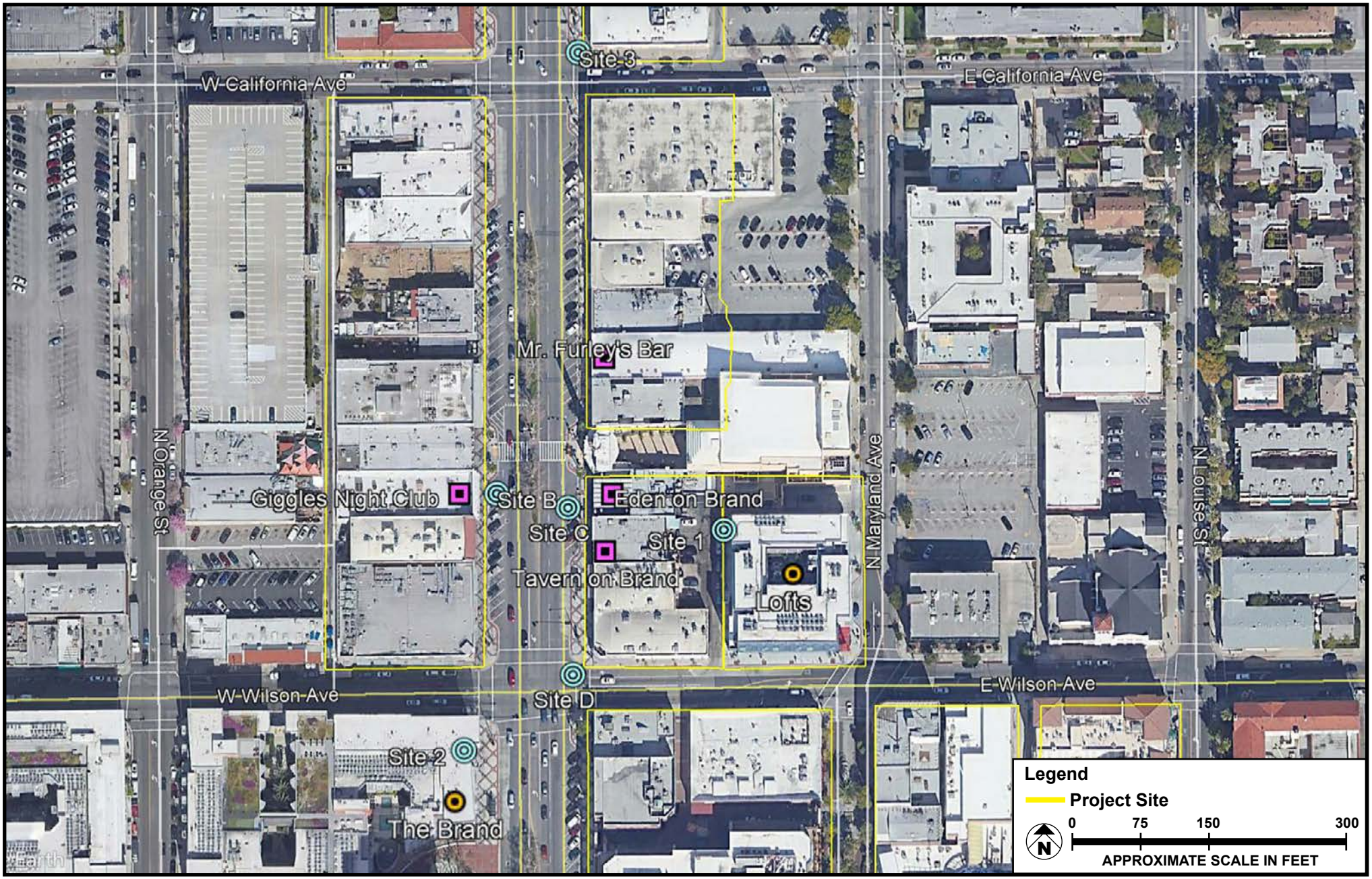
SOURCE: Google Earth - 2021

FIGURE **13a**

Meridian Consultants

Sensitive Receptor Map 1

057-003-20



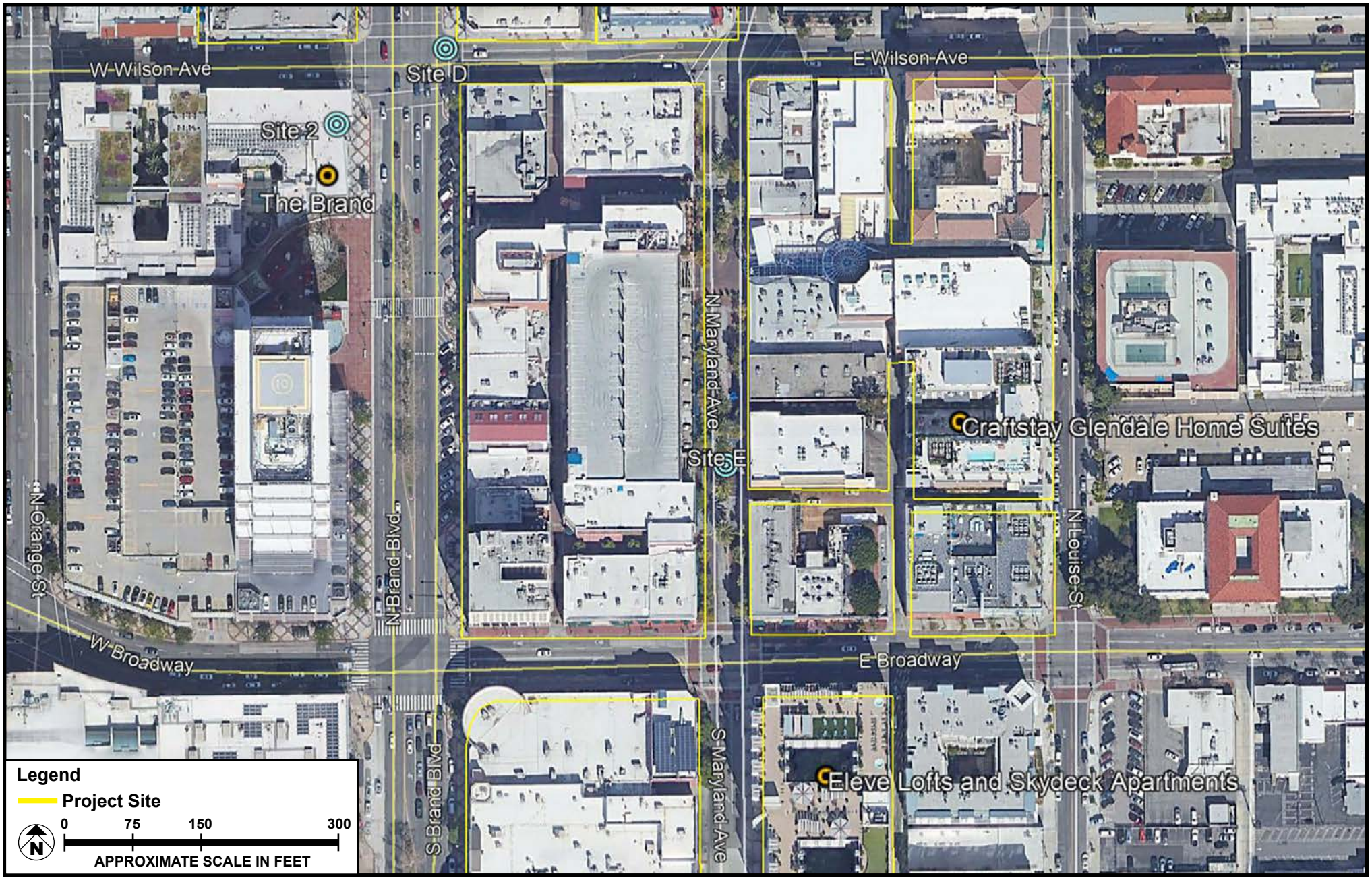
SOURCE: Google Earth - 2021

FIGURE **13b**

Meridian Consultants

Sensitive Receptor Map 2

057-003-20



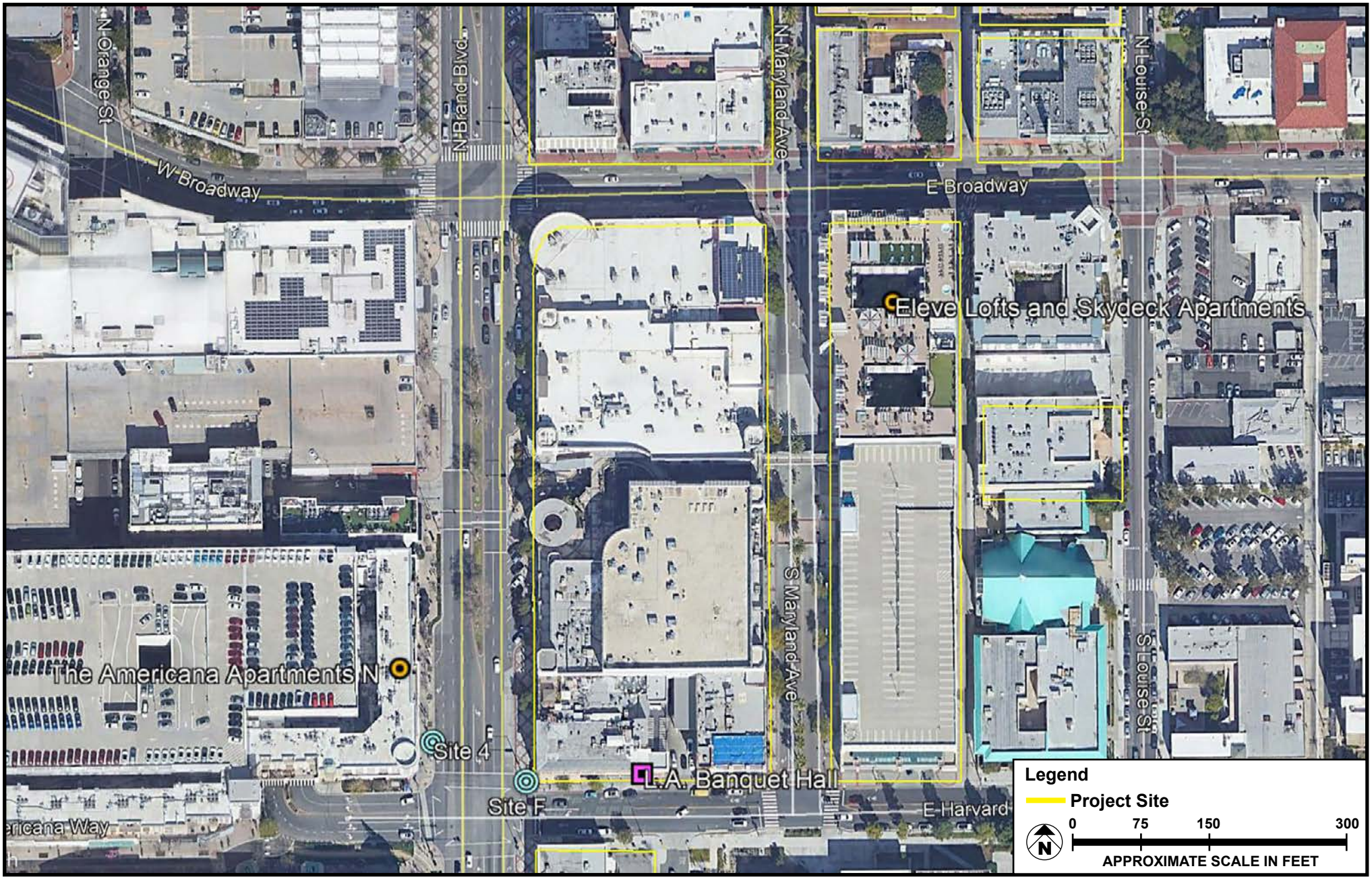
SOURCE: Google Earth - 2021

FIGURE **13c**

Meridian Consultants

Sensitive Receptor Map 3

057-003-20



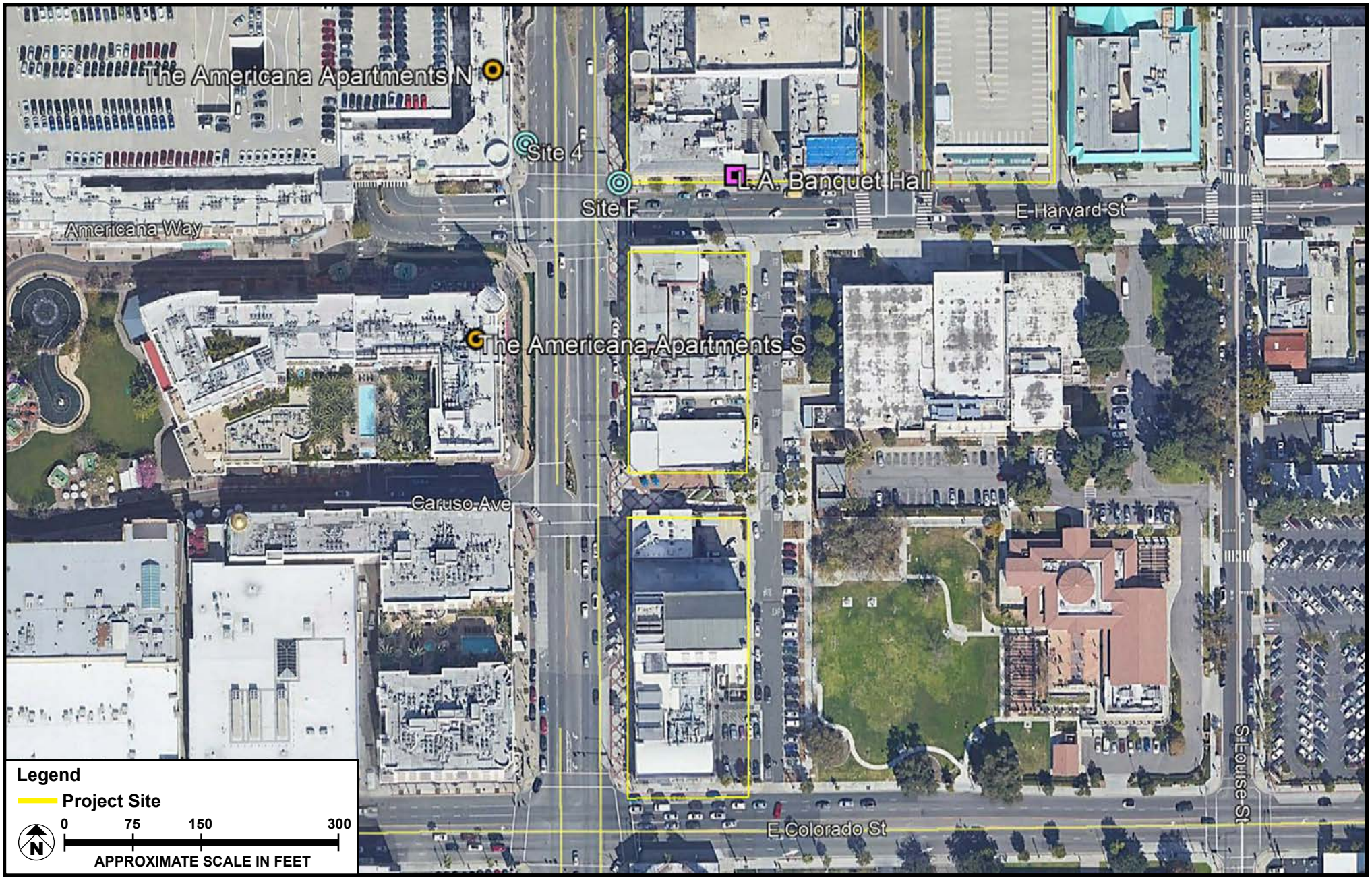
SOURCE: Google Earth - 2021

FIGURE **13d**

Meridian Consultants

Sensitive Receptor Map 4

057-003-20



SOURCE: Google Earth - 2021

FIGURE **13e**

Meridian Consultants

Sensitive Receptor Map 5

057-003-20

THRESHOLDS OF SIGNIFICANCE

The City currently regulates the permissible noise levels for daytime and nighttime activities and requires the use of amplified sound equipment to occur between the hours of 7:00 AM to 10:00 PM, whereas many businesses operate until later in the evening. Additionally, no sound emanating from sound-amplifying equipment shall exceed 15 dBA above the actual or presumed ambient, as measured at any property line. As shown in **Table 7**, existing short-term noise levels (10-minute) at commercial uses that operate sound-amplifying equipment were in excess of 15 dBA above the presumed standard for commercial uses of 65 dBA at Monitoring Site C. Noise levels were exceeded by a maximum of 0.9 dBA, resulting in exterior noise levels of 80.9 dBA (Leq 10-minute). All other short-term monitoring sites were within the presumed noise standard.

This study assesses future noise levels caused by extending the allowed hours of operation of amplified sound equipment between the hours of 7:00 AM to 2:00 AM the following day in order to better accommodate entertainment uses that were encouraged by the DSP, while remaining consistent with the General Plan Noise Element. The analysis below provides an assessment of future noise levels compared to the City's GMC presumed noise standards (refer to **Table 6**), the City's General Plan Noise Element exterior standards (refer to **Table 5**) and cumulative noise exposure metrics such as the average-daily noise level (CNEL) compared against the City's Noise Compatibility Guidelines (refer to **Figure 2**). As mentioned previously, presumed noise standards for multi-family residential uses is 60 dBA during both daytime and nighttime periods. Additionally, presumed noise standards for commercial uses is 65 dBA during both the daytime and nighttime periods. Noise in excess of the presumed ambient (or actual ambient if it is less) plus 5 dBA is a violation. Additionally, as stated in the City's General Plan, noise exposure for multifamily uses is "normally acceptable" when the CNEL at exterior residential locations is equal to or below 65 dBA, "conditionally acceptable" when the CNEL is between 60 to 70 dBA, and "normally unacceptable" when the CNEL exceeds 70 dBA.

When amplified sound equipment activities extend into the nighttime hours, SEL (Leq 1-second) is the appropriate measure of the potential for impacts. What makes community noise continuously variable throughout a day, besides slowly changing background noise, is the addition of short duration single event noise sources, such as amplified sound equipment, which are readily identifiable to the individual receptor. As such, the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less (refer to **Table 4**) is used for noise modeling purposes which is a time-integrated measure of a single noise event at a reference duration of one second.

ANALYSIS

For the purpose of presenting results of potential future noise impacts, the sensitive uses nearest to the noise monitoring sites described above have been organized into groups by geographic proximity along Brand Boulevard to represent where monitoring was conducted near commercial uses that may operate amplified sound equipment. Although the receptor groups listed may not include all sensitive uses within the proximity of these commercial uses, the identified groups represent the greatest potential for noise impacts nearest to businesses that currently and in the future operate amplified sound equipment.

Between Lexington Drive and California Avenue

- Site A & 3: Multifamily uses include the Maryland Capri building located to the east at 319 N. Maryland Avenue.
- Commercial uses that operate amplified sound equipment include the Carousel Restaurant located at 304 N. Brand Boulevard. However, amplified sound equipment is typically operated inside the building with doors closed and are only opened for entry/exit of guests.

Between California Avenue and Wilson Avenue

- Site 1: Multifamily residential uses include L Lofts building located at 215 N. Maryland Avenue.
- Site 2: Multifamily residential uses include The Brand+ residential building located at 120 W. Wilson Avenue.
- Commercial uses that operate amplified sound equipment include Mr. Furley's Bar (224 N. Brand Boulevard), Eden on Brand (214 N. Brand Boulevard), Tavern on Brand (208 N. Brand Boulevard). Amplified sound equipment at Mr. Furley's Bar is typically operated indoors with the doors open facing towards Brand Boulevard; amplified sound equipment at Eden on Brand is operated on the rooftop mezzanine located on the 2nd floor of the building; amplified sound equipment at Tavern on Brand is operated on the ground floor onto Brand Boulevard.
- Additionally, the Giggles Night club (215 N. Brand Boulevard) operates amplified sound equipment indoors. Doors are typically closed and only remain open for entry/exit of guests.

Between Wilson Avenue and Broadway

- Site E: Multifamily residential uses include the Craftstay Glendale Home Suites located at 111 N. Louise Street and the Elevé Lofts and Skydeck Apartments located at 200 E. Broadway.
- Commercial uses are located along the pedestrian paseo along Artsakh Street. Future plans include a one-way street with an extended sidewalk and ample pedestrian space, providing future opportunity for street performances operating amplified sound equipment.

Between Broadway and Harvard Street

- Site 4 & F: Multifamily residential uses include The Americana at Brand located at 889 Americana Way.
- Commercial uses that operate amplified sound equipment include the L.A. Banquet Hall located at 109 E. Harvard Street and The Famous bar located at 154 S. Brand Boulevard. However, amplified sound equipment is typically operated indoors on the 2nd floor within the L.A. Banquet Hall building and within The Famous building.

Results

Based on field observations, amplified sound equipment operated intermittently between 9:00 PM – 1:00 AM during the weekend period. However, to simulate a future daily worst-case scenario, the results below assume amplified sound equipment are operated at 100 percent intensity between the hours of 7:00 AM – 2:00 AM at 100 dBA within one feet from the source throughout the duration of each hour.

Consistency with GMC Section 8.36.040

As mentioned previously, Section 8.36.040 of the GMC provides presumed noise standards for various designated zones (refer to **Table 6**). Noise in excess of the presumed ambient (or actual ambient if it is less) plus 5 dBA is a violation. The presumed noise standard for multifamily residential uses is 60 dBA for both the daytime and nighttime period. As such, noise levels resulting in an excess of 65 dBA would result in a violation of the GMC. **Table 10: GMC Modeled Exterior Noise Levels** provides daytime and nighttime modeled exterior noise levels at sensitive multifamily residential uses from the operation of sound amplifying equipment at adjacent commercial uses. As shown in **Table 10**, daytime noise levels would range from a low of 43.3 dBA Leq at the Elevé Lofts and Skydeck Apartments to a high of 61.7 dBA Leq at the multifamily residential uses at The Americana at Brand. Additionally, nighttime noise levels would range from a low of 39.8 dBA Leq at the Elevé Lofts and Skydeck Apartments to a high of 58.2 dBA Leq at the multifamily residential uses at The Americana at Brand. Exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses.

TABLE 10
GMC MODELED EXTERIOR NOISE LEVELS

Building	Period[1]	Modeled Exterior Noise Level (dBA Leq)	Presumed Noise Standard plus 5 dBA[2]	Exceeds Threshold?
Between Lexington Drive & California Avenue				
Maryland Capri	Daytime	47.6	65.0	**No**
	Nighttime	44.0	65.0	**No**
Between California Avenue & Wilson Avenue				
L Lofts	Daytime	60.3	65.0	**No**
	Nighttime	56.7	65.0	**No**
The Brand+	Daytime	58.2	65.0	**No**
	Nighttime	54.7	65.0	**No**
Between Wilson Avenue & Broadway				
Craftstay Glendale Home Suites	Daytime	47.1	65.0	**No**
	Nighttime	43.6	65.0	**No**
Between Broadway & Harvard Street				
Elevé Lofts and Skydeck Apartments	Daytime	43.3	65.0	**No**
	Nighttime	39.8	65.0	**No**
The Americana at Brand	Daytime	61.7	65.0	**No**
	Nighttime	58.2	65.0	**No**

Note:

[1] Daytime = 7:00 AM – 10:00 PM; Nighttime = 10:00 PM – 7:00 AM.

[2] Presumed noise standard of 60 dBA for multifamily residential uses plus 5 dBA.

*Source: Refer to **Appendix C** for SoundPLAN Output Sheets.*

Consistency with General Plan Noise Element

As shown in **Table 5** above, the City's General Plan Noise Element established 24-hour CNEL exterior noise standards which includes a 65 dBA CNEL threshold for single and multi-family residential uses. It is important to note, there are no exterior noise standards for residential uses within mixed use. However, for a conservative analysis, the 65 dBA CNEL threshold was also applied for residential uses within mixed use. These uses include the L Lofts building, The Brand+ building, Elevé Lofts and Skydeck Apartments, and The American at Brand. Additionally, the City's General Plan Land Use Compatibility to Noise (refer to **Figure 2**) identifies the acceptable limit noise exposure for various land-use categories within the City. Noise exposure for multifamily uses is "normally acceptable" when the CNEL at exterior residential locations is equal to or below 65 dBA, "conditionally acceptable" when the CNEL is between 60 to 70 dBA, and "normally unacceptable" when the CNEL exceeds 70 dBA. **Table 11: General Plan Modeled Exterior Noise Levels** provides 24-hour (CNEL) exterior noise levels at sensitive multifamily residential uses from the operation of sound amplifying equipment at adjacent commercial uses. As shown in **Table 11**, amplified sound equipment attributed modeled exterior noise levels ranged from a low of 47 dBA CNEL at the Elevé Lofts and Skydeck Apartments to a high of 64 dBA CNEL at the multifamily residential uses located at The Americana at Brand. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family residential uses. 24-hour CNEL noise levels would fall within the normally acceptable compatibility land use category.

Single Event Noise Level (SEL)

As mentioned previously, when amplified sound equipment activities extend into the nighttime hours, SEL (Leq 1-second) is the appropriate measure of the potential for impacts. As such, the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less is used for noise modeling purposes. As shown in **Table 11**, SEL (Leq-1second) noise levels ranged from a low of 79 dBA (Leq-1second) at the Elevé Lofts and Skydeck Apartment to a high of 97 dBA (Leq-1second) at The Americana on Brand. SEL (Leq-1second) noise levels would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.

TABLE 11 GENERAL PLAN MODELED EXTERIOR NOISE LEVELS						
Building	Modeled Exterior Noise Level (24-Hour CNEL)	Exterior Noise Standard (CNEL)	Exceeds Noise Standard?	General Plan Noise Exposure Compatibility Category	Modeled Single Event Level (Leq 1-second SEL)	Exceeds 100 dBA SEL Threshold?
Between Lexington Drive & California Avenue						
Maryland Capri	52	65	**No**	Normally Acceptable	83	**No**
Between California Avenue & Wilson Avenue						
L Lofts	64	65[1]	**No**	Normally Acceptable	96	**No**
The Brand+	62	65[1]	**No**	Normally Acceptable	94	**No**
Between Wilson Avenue & Broadway						
Craftstay Glendale Home Suites	51	65	**No**	Normally Acceptable	83	**No**
Between Broadway & Harvard Street						
Elevé Lofts and Skydeck Apartments	47	65[1]	**No**	Normally Acceptable	79	**No**
The Americana at Brand	64	65[1]	**No**	Normally Acceptable	97	**No**

Note:

[1] No current exterior noise standard for residential within mixed use. For conservative analysis, 65 dBA CNEL is used.

*Source: Refer to **Appendix C** for SoundPLAN Output Sheets.*

Summary

The Maryland Capri multifamily residential building is located to the east of Brand Boulevard and does not have a direct line of sight to commercial uses that operate amplified sound equipment, which includes the Carousel Restaurant. Additionally, amplified sound equipment is typically operated inside the building and noise levels are typically shielded by the building itself. However, to simulate a worst-case scenario analysis, a point source was modeled at the outdoor patio area of the commercial use along Brand Boulevard as increased noise levels from the restaurant are experienced along this segment. As shown in **Table 10**, daytime and nighttime exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses. Exterior noise levels would be consistent with the City's GMC. Additionally, as shown in **Table 11**, 24-hour CNEL noise levels at the Maryland Capri multifamily residential building would 52 dBA CNEL and fall within the normally acceptable compatibility land use category. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family residential uses. SEL (Leq-1second) noise levels at the Maryland Capri multifamily residential building would be 83 dBA (Leq-1second) and would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.

The L Lofts multifamily residential building is located to the east of Brand Boulevard and some residential units have a direct line of the sight to the rooftop mezzanine of the Eden on Brand restaurant. The analysis takes into consideration the cumulative noise generated from amplified sound equipment at the ground floor along the public right of way at Mr. Furley's Bar, the rooftop mezzanine at Eden on Brand restaurant, and the ground floor performances on the sidewalk at Tavern on Brand. As shown in **Table 10**, daytime and nighttime exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses. Exterior noise levels would be consistent with the City's GMC. Additionally, as shown in **Table 11**, 24-hour CNEL noise levels at the L Lofts multifamily residential building would 64 dBA CNEL and fall within the normally acceptable compatibility land use category. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family residential uses. SEL (Leq-1second) noise levels at L Lofts multifamily residential building would be 96 dBA (Leq-1second) and would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.

The Brand+ multifamily residential building is located on the southwest corner of the Wilson Avenue and Brand Boulevard intersection with some residential units having a direct line of the sight of Mr. Furley's Bar, Eden on Brand and Tavern on Brand. The analysis takes into consideration the cumulative noise generated from amplified sound equipment at the ground floor along the public right of way at Mr. Furley's Bar, the rooftop mezzanine at Eden on Brand restaurant, and the ground floor performances on the sidewalk at Tavern on Brand. As shown in **Table 10**, daytime and nighttime exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses. Exterior noise levels would be consistent with the City's GMC. Additionally, as shown in **Table 11**, 24-hour CNEL noise levels at The Brand+ multifamily residential building would be 62 dBA CNEL and fall within the normally acceptable compatibility land use category. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family

residential uses. SEL (Leq-1second) noise levels at The Brand+ multifamily residential building would be 94 dBA (Leq-1second) and would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.

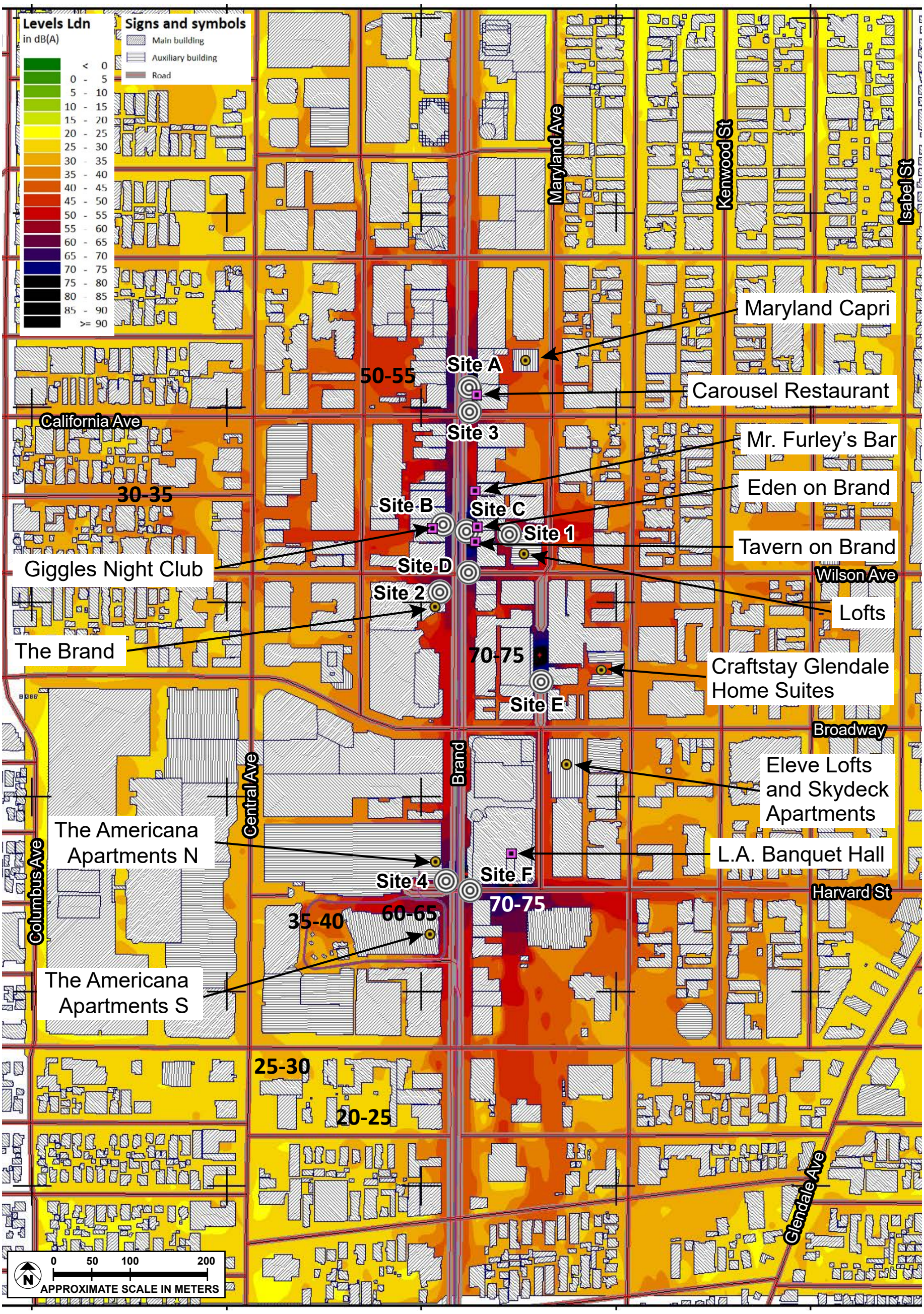
The Craftstay Glendale Home Suites is located on the east of both Brand Boulevard and Artsakh Street located along N. Louise Street. As mentioned previously, future plans on Artsakh Street include a one-way street with an extended sidewalk providing future opportunity for street performances operating amplified sound equipment. The top residential units may have a direct line of sight of future street performance activities along Artsakh Street. As such the analysis takes into consideration amplified sound equipment operating within the pedestrian paseo of Artsakh Street. As shown in **Table 10**, daytime and nighttime exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses. Exterior noise levels would be consistent with the City's GMC. Additionally, as shown in **Table 11**, 24-hour CNEL noise levels at the Craftstay Glendale Home Suites would be 51 dBA CNEL and fall within normally acceptable compatibility land use category. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family residential uses. SEL (Leq-1second) noise levels at the Craftstay Home Suites would be 83 dBA (Leq-1second) and would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.

Elevé Lofts and Skydeck Apartments are located along E. Broadway and Maryland Avenue with some residential units with a direct line of sight of Artsakh Street. As mentioned previously, future plans on Artsakh Street include a one-way street with an extended sidewalk providing future opportunity for street performances operating amplified sound equipment. The analysis takes into consideration amplified sound equipment operating within the pedestrian paseo of Artsakh Street. As shown in **Table 10**, daytime and nighttime exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses. Exterior noise levels would be consistent with the City's GMC. Additionally, as shown in **Table 11**, 24-hour CNEL noise levels at Elevé Lofts and Skydeck Apartments would be 47 dBA CNEL and fall within the normally acceptable compatibility land use category. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family residential uses. SEL (Leq-1second) noise levels at the Elevé Lofts and Skydeck Apartments would be 79 dBA (Leq-1second) and would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.

The Americana at Brand includes residential units above the ground floor commercial units along Brand Boulevard and Americana Way/Harvard Street. Some of these residential units have a direct line of sight of commercial uses along Brand Boulevard that may operate amplified sound equipment including The Famous Bar and the L.A. Banquets Hall. It's important to note, these commercial uses operate amplified sound equipment indoors and are shielded by the building itself. However, to simulate a worst-case scenario, a point source was modeled at the exterior of these commercial uses along Harvard Street and Brand Boulevard. As shown in **Table 10**, daytime and nighttime exterior noise levels would not result in an excess of 5 dBA above the presumed noise standard of 60 dBA for multifamily residential uses. Exterior noise levels would be consistent with the City's GMC. Additionally, as shown in **Table 11**, 24-hour CNEL noise levels at The Americana on Brand would be 64 dBA CNEL and fall within the normally acceptable

compatibility land use category. Exterior noise levels would be below the 65 dBA CNEL threshold identified in the City's General Plan Noise Element for single and multi-family residential uses. SEL (Leq-1second) noise levels for the multifamily residential units at The Americana at Brand Apartments would be 97 dBA (Leq-1second) and would not exceed the NIOSH recommended exposure limits of 100 dBA SEL threshold for a continuous duration of 15 minutes or less.

For information and illustrative purposes, CNEL noise levels are shown graphically in **Figure 14: Operational Noise Level Contour Map (CNEL).** Additionally, for information and illustrative purposes, SEL noise levels are shown graphically in **Figure 15: Operational Noise Level Contour Map (SEL).**



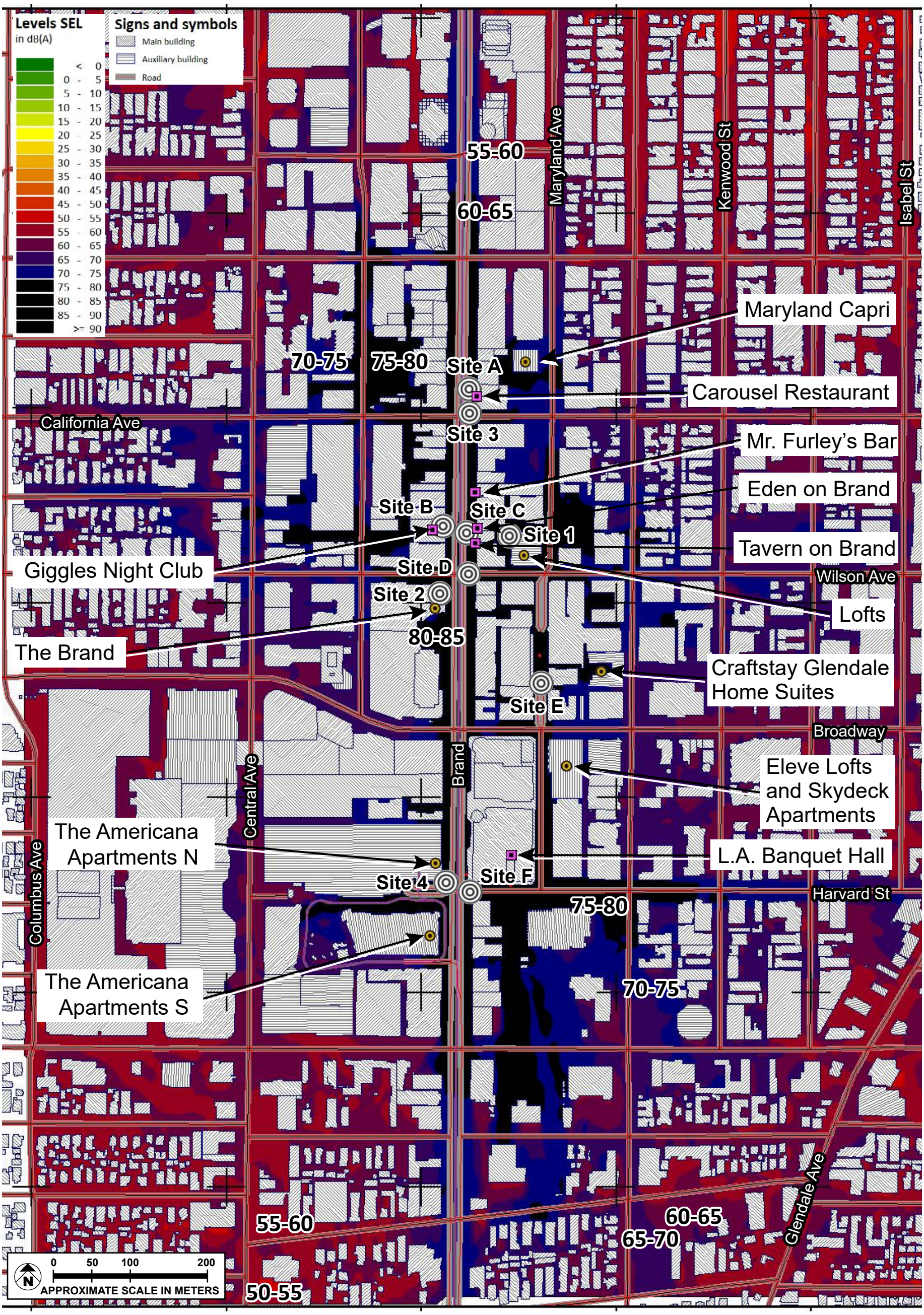
SOURCE: Google Earth - 2021

FIGURE **14**

Meridian Consultants

Operational Noise Level Contour Map (CNEL)

057-003-20



SOURCE: Google Earth - 2021

FIGURE **15**

Meridian Consultants

Operational Noise Level Contour Map (SEL)

057-003-20

EXTENDED HOURS OF OPERATION FOR AMPLIFIED SOUND

Current regulations of Section 8.36.280 of the GMC allow the operation of sound-amplifying equipment to occur between the hours of 7:00 AM and 10:00 PM each day except on Sundays and legal holidays. No operation of sound-amplifying equipment for commercial purposes shall be permitted on Sundays or legal holidays. Additionally, the operation of sound-amplifying equipment for noncommercial purposes on Sundays and legal holidays shall only occur between the hours of 7:00 AM and 10:00 PM.

To simulate a future worst-case scenario, the analysis above assumed sound amplifying equipment are operated at 100 percent intensity between the proposed hours of 7:00 AM – 2:00 AM of the following day. As shown in **Table 10** and **11** above, the extended hours of operation of 7:00 AM – 2:00 AM would not result in significant impacts and would be consistent with the City's GMC and General Plan. As such the following permitted hours are proposed:

The operation of sound-amplifying equipment within the Alex Theatre District and the Art & Entertainment District shall be permitted from 7:00 AM to 10:00 PM on Sunday through Thursday and from 7:00 AM to 2:00 AM on Friday and Saturday of the following day.

REMEDIAL MITIGATION MEASURES

As shown in **Table 7** above, short-term (10-minute) ambient noise levels in current violation of Section 8.36.280 of the GMC which results in an excess of 15 dBA above the presumed noise standard for commercial uses of 65 dBA were exceeded by 0.9 dBA at Monitoring Site C along Brand Boulevard. Commercial uses within this monitoring area include Mr. Furley's Bar, Eden on Brand and Tavern on Brand. Dominant noise sources along these monitoring sites included vehicle traffic along Brand Boulevard and operation of amplified sound equipment between California Avenue and Wilson Avenue. The following remedial mitigation measures are proposed for the commercial uses between California Avenue and Wilson Avenue:

- Speaker systems shall be capable of aiming the sound toward the seating areas, or other intended areas within the establishment, to minimize sound spillage onto Brand Boulevard and adjacent properties.

- The owner/operator shall use speakers that minimizes the use of subwoofers and is adjusted such that low-frequency sound is inaudible at adjacent properties.

Additionally, as shown in **Table 8** above, long-term (24-hour) ambient noise levels at nearby uses that operate sound amplifying equipment within the DSP was not in violation of Section 8.36.040 of the GMC which results in an excess of 5 dBA above the presumed noise standard for residential uses. Furthermore, long-term (24-hour) ambient noise levels were not in violation of Section 8.36.280 which results in an excess of 15 dBA above the presumed standard of 65 dBA for commercial uses at any of the monitoring sites. Therefore, no remedial mitigation measures are required for long-term ambient noise.

APPROPRIATE THRESHOLDS OF VIOLATION

The following thresholds of violations are recommended to be incorporated within the GMC.

Any noise that is measured in excess of the parameters set forth in table below is declared to be a nuisance. No sound is permitted within the city that exceeds the parameters set forth in the table below.

SOUND LEVEL LIMITATIONS	
Duration Per Day Continuous Hours	Noise Level dBA
8	85
6	86
4	88
3	89
2	91
1 ½	92
1	94
½	97
¼ or less	100

IMPROVEMENTS/MODIFICATIONS TO THE GMC

The following modifications are recommended for Section 8.36.280 of the GMC.

Commercial and noncommercial use of sound-amplifying equipment shall be subject to the following regulations:

a) The only sound permitted shall be either music or human speech or both.

b) The operation of sound-amplifying equipment shall only occur between the hours of 7:00 AM and 10:00 PM each day except on Sundays and legal holidays. No operation of sound-amplifying equipment for commercial purposes shall be permitted on Sundays or legal holidays. <u>The operation of sound-amplifying equipment within the Alex Theatre District and the Art & Entertainment District shall only occur between 7:00 AM through 10:00 PM on Monday through Thursday and 7:00 AM through 2:00 AM between Friday through Saturday of the following day provided all of the following are met:</u>

   a. <u>Amplified sound equipment limited to 100 dBA within one foot from the source of noise for continuous duration of 15 minutes within the hour</u>

   b. <u>Amplified sound equipment limited to 97 dBA within one foot from the source of noise for continuous duration of 30 minutes within the hour.</u>

   c. Amplified sound equipment limited to 94 dBA within one foot from the source of noise for continuous duration of 1 hour.

d. Amplified sound equipment limited to 92 dBA within one foot from the source of noise for continuous duration of 1 and ½ hours.

e. Amplified sound equipment limited to 91 dBA within one foot from the source of noise for continuous duration of 2 hours.

f. Amplified sound equipment limited to 89 dBA within one foot from the source of noise for continuous duration of 3 hours.

g. Amplified sound equipment limited to 88 dBA within one foot from the source of noise for continuous duration of 4 hours.

h. Amplified sound equipment limited to 86 dBA within one foot from the source of noise for continuous duration of 6 hours.

i. <u>Amplified sound equipment limited to 85 dBA within one foot from the source of noise for continuous duration of 8 hours.</u>

c) No sound emanating from sound-amplifying equipment shall exceed 15 dBA above the actual or presumed ambient, as measured at any property line.

d) Notwithstanding subsection D of this section, sound-amplifying equipment shall not be operated within 200 feet of churches, and schools, hospitals, libraries or city or county buildings.

e) In any event, the volume of sound shall be so controlled that it will not be unreasonably loud, raucous, jamming, disturbing or a nuisance to reasonable persons of normal sensitiveness within the area of audibility, or interfere with comfort, peace, quiet, repose or endanger the health of inhabitants of the area.

APPENDIX A

Noise Measurements

APPENDIX A.1

Short-term (10-minute) Noise Measurements

Monitoring Location: Site A
Monitoring Date: 7/30/2021

Round 1

Time	LAeq	LASmax	LASmin
20:00:01	68.0	73.8	63.5
20:01:01	69.0	71.8	65.7
20:02:01	71.6	78.5	66.1
20:03:01	72.8	82.7	65.3
20:04:01	71.1	74.2	66.9
20:05:01	69.6	77.7	63.1
20:06:01	70.5	74.5	66.8
20:07:01	69.6	75.6	63.8
20:08:01	72.6	78.1	62.8
20:09:01	68.8	73.6	62.3
20:10:01	70.3	72.0	70.9
		82.7	62.3

10-minute LAeq **70.6**

Round 2

Time	LAeq	LASmax	LASmin
22:07:11	78.3	83.2	63.6
22:08:11	67.5	75.4	59.1
22:09:11	77.8	90.3	63.2
22:10:11	70.7	77.6	61.2
22:11:11	67.7	74.1	61.4
22:12:11	77.8	89.9	59.7
22:13:11	71.0	81.3	60.7
22:14:11	67.4	78.7	59.2
22:15:11	70.1	75.8	60.9
22:16:11	68.9	75.8	60.2
22:17:11	66.1	67.9	63.2
		90.3	59.1

10-minute LAeq **73.6**

Monitoring Location: Site B
Monitoring Date: 7/30/2021

Round 1

Time	LAeq	LASmax	LASmin
20:13:14	68.1	75.9	61.4
20:14:14	64.3	68.3	57.9
20:15:14	66.6	80.5	60.3
20:16:14	67.7	71.3	60.0
20:17:14	67.2	78.3	59.3
20:18:14	71.6	82.9	63.5
20:19:14	69.6	81.0	61.5
20:20:14	64.4	68.8	59.7
20:21:14	67.3	72.8	62.0
20:22:14	68.9	77.7	61.5
20:23:14	62.0	62.3	61.8
		82.9	57.9

10-minute LAeq **67.8**

Round 2

Time	LAeq	LASmax	LASmin
22:20:32	77.7	84.2	71.2
22:21:32	75.9	80.0	71.2
22:22:32	76.1	80.5	69.8
22:23:32	78.2	80.8	73.5
22:24:32	78.3	82.8	74.2
22:25:32	78.3	84.1	75.0
22:26:32	78.4	83.1	73.0
22:27:32	76.8	82.9	71.3
22:28:32	76.3	83.3	69.5
22:29:32	75.7	79.0	72.8
22:30:32	77.2	77.1	76.4
		84.2	69.5

10-minute LAeq **77.3**

Monitoring Location: Site C
Monitoring Date: 7/30/2021

Round 1

Time	LAeq	LASmax	LASmin
21:06:22	76.2	78.2	73.2
21:07:22	76.4	80.9	73.8
21:08:22	77.0	81.9	73.7
21:09:22	76.3	78.7	72.5
21:10:22	77.2	79.9	73.8
21:11:22	76.2	78.9	74.5
21:12:22	75.9	77.8	73.1
21:13:22	76.9	80.4	74.0
21:14:22	76.9	80.9	73.5
21:15:22	79.5	83.8	74.4
21:16:22	88.6	94.9	78.6
		94.9	72.5

10-minute LAeq **80.4**

Round 2

Time	LAeq	LASmax	LASmin
22:31:33	80.0	83.8	76.3
22:32:33	80.9	85.0	77.3
22:33:33	77.9	81.5	72.0
22:34:33	79.0	81.8	73.6
22:35:33	79.8	82.5	76.8
22:36:33	83.1	86.3	78.8
22:37:33	83.9	87.6	78.6
22:38:33	83.4	87.6	75.1
22:39:33	77.9	80.6	75.3
22:40:33	78.0	80.3	73.0
22:41:33	79.1	79.1	77.9
		87.6	72.0

10-minute LAeq **80.9**

Monitoring Location: Site D
Monitoring Date: 7/30/2021

Round 1

Time	LAeq	LASmax	LASmin
21:18:15	70.0	74.2	64.8
21:19:15	70.9	81.6	66.0
21:20:15	73.3	82.9	65.5
21:21:15	70.0	77.0	64.2
21:22:15	71.0	78.7	65.3
21:23:15	75.0	84.3	62.9
21:24:15	70.8	77.0	65.8
21:25:15	71.9	82.1	62.9
21:26:15	70.5	78.1	64.4
21:27:15	70.5	76.3	64.4
21:28:15	66.9	68.0	66.7
		84.3	62.9

10-minute LAeq **71.4**

Round 2

Time	LAeq	LASmax	LASmin
22:42:54	70.2	75.6	64.1
22:43:54	69.7	75.8	63.9
22:44:54	68.7	74.0	64.5
22:45:54	70.5	77.5	64.3
22:46:54	73.4	82.2	63.7
22:47:54	69.0	77.1	62.1
22:48:54	68.3	80.1	61.5
22:49:54	67.5	72.7	62.8
22:50:54	70.2	80.7	63.4
22:51:54	71.0	77.7	63.9
22:52:54	76.3	75.6	70.3
		82.2	61.5

10-minute LAeq **71.2**

Monitoring Location: Site E
Monitoring Date: 7/30/2021

Round 1

Time	LAeq	LASmax	LASmin
21:31:12	60.1	68.3	54.5
21:32:12	63.0	70.5	58.5
21:33:12	70.3	78.1	58.3
21:34:12	61.2	65.6	57.2
21:35:12	63.2	68.7	58.4
21:36:12	60.8	63.7	57.5
21:37:12	61.2	66.8	56.5
21:38:12	61.0	65.6	57.8
21:39:12	62.9	69.8	58.9
21:40:12	63.5	72.6	57.6
21:41:12	55.2	57.5	56.5
		78.1	54.5

10-minute LAeq **63.6**

Round 2

Time	LAeq	LASmax	LASmin
22:56:10	65.5	73.9	57.7
22:57:10	62.8	69.1	56.9
22:58:10	58.7	65.9	54.1
22:59:10	55.5	60.6	51.1
23:00:10	58.4	64.3	52.2
23:01:10	58.2	63.9	53.9
23:02:10	56.6	60.4	52.0
23:03:10	56.1	64.6	51.4
23:04:10	57.2	60.5	53.5
23:05:10	73.7	83.9	53.5
23:06:10	58.4	59.4	57.3
		83.9	51.1

10-minute LAeq **64.8**

Monitoring Location: Site F
Monitoring Date: 7/30/2021

Round 1

Time	LAeq	LASmax	LASmin
21:47:13	64.9	69.7	62.1
21:48:13	70.8	76.7	63.5
21:49:13	67.4	77.6	61.6
21:50:13	70.4	75.6	62.0
21:51:13	70.2	79.4	64.3
21:52:13	67.0	72.7	61.4
21:53:13	70.7	77.0	65.0
21:54:13	72.7	82.3	63.7
21:55:13	69.7	79.6	62.7
21:56:13	70.2	76.1	64.3
21:57:13	68.2	68.9	68.0
		82.3	61.4

10-minute LAeq **69.7**

Round 2

Time	LAeq	LASmax	LASmin
23:13:09	69.7	79.2	57.9
23:14:09	69.5	76.0	62.9
23:15:09	67.6	74.0	60.4
23:16:09	65.4	76.3	60.4
23:17:09	68.4	74.1	60.0
23:18:09	69.5	79.9	59.4
23:19:09	70.8	81.6	58.5
23:20:09	70.1	76.3	60.7
23:21:09	66.7	72.6	60.6
23:22:09	65.5	70.5	61.2
23:23:09	69.1	68.9	68.3
		81.6	57.9

10-minute LAeq **68.7**

APPENDIX A.2

Long-term (24-hour) Noise Measurements

Monitoring Location: Site 1
L Lofts Building

Time(s): Friday, July 30 8:00 PM - 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
	Midnight	0 / 24		1	10	3
am	1:00	100		1	10	3
	2:00	200		1	10	3
	3:00	300		1	10	3
	4:00	400		1	10	3
	5:00	500		1	10	3
	6:00	600		1	10	3
	7:00	700		1	10	3
	8:00	800		1	10	3
	9:00	900		1	10	3
	10:00	1000		1	10	3
	11:00	1100		1	10	3
	12:00	1200		1	10	3
pm	1:00	1300		1	10	3
	2:00	1400		1	10	3
	3:00	1500		1	10	3
	4:00	1600		1	10	3
	5:00	1700		1	10	3
	6:00	1800		1	10	3
	7:00	1900		1	10	3
	8:00	2000	59.5	897850	8978504	2839252
	9:00	2100	64.2	2636659	26366592	8337849
	10:00	2200	63.2	2086993	20869930	6599651
pm	11:00	2300	65.1	3218600	32185999	10178107

Leq Morning Peak Hour 7:00-10:00 a.m.
0 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
0 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
57.7 dBA

Leq Daytime 7:00 am-10:00 p.m.
53.7 dBA

Leq Daytime 7:00 am-7:00 p.m.
0.0 dBA

Leq Evening 7:00 pm-10:00 p.m.
60.7 dBA

Leq 24-Hour
56 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
64 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
64.3 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.550152861

Monitoring Location: Site 1
L Lofts Building

Time(s): Saturday, July 31 12:00 AM through Sunday, August 1, 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	60.5	1112761	11127613	3518860
am	1:00	100	60.2	1041593	10415929	3293806
	2:00	200	57.6	572509	5725086	1810431
	3:00	300	51.2	130350	1303503	412204
	4:00	400	50.1	102903	1029030	325408
	5:00	500	51.9	155592	1555919	492025
	6:00	600	54.1	254878	2548778	805994
	7:00	700	54.8	298645	2986448	944398
	8:00	800	54.9	305739	3057391	966832
	9:00	900	56.1	402761	4027606	1273641
	10:00	1000	57.7	583713	5837125	1845861
	11:00	1100	59.0	801730	8017298	2535292
	12:00	1200	60.2	1042759	10427591	3297494
pm	1:00	1300	59.3	845115	8451154	2672489
	2:00	1400	59.1	805959	8059591	2548666
	3:00	1500	59.2	828600	8286001	2620264
	4:00	1600	59.2	829717	8297170	2623796
	5:00	1700	58.9	769315	7693146	2432787
	6:00	1800	59.0	797014	7970141	2520380
	7:00	1900	60.5	1112897	11128971	3519290
	8:00	2000	60.1	1018099	10180990	3219512
	9:00	2100	60.8	1192606	11926060	3771351
	10:00	2200	59.8	961789	9617894	3041445
pm	11:00	2300	59.9	986370	9863703	3119177

Leq Morning Peak Hour 7:00-10:00 a.m.
55 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
59 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
57.7 dBA

Leq Daytime 7:00 am-10:00 p.m.
59 dBA

Leq Daytime 7:00 am-7:00 p.m.
58.4 dBA

Leq Evening 7:00 pm-:00 p.m.
60.4 dBA

Leq 24-Hour
58 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
64 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
64.8 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.4566156

Monitoring Location: Site 1
L Lofts Building

Time(s): Sunday, August 1 12:00 AM through Monday, August 2 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	57.8	602593	6025929	1905566
am	1:00	100	57.7	585108	5851080	1850274
	2:00	200	58.6	731727	7317269	2313924
	3:00	300	52.2	164149	1641489	519084
	4:00	400	50.9	123780	1237799	391426
	5:00	500	49.3	85434	854339	270166
	6:00	600	50.6	115250	1152503	364453
	7:00	700	52.1	162144	1621437	512743
	8:00	800	53.6	227497	2274966	719408
	9:00	900	57.1	514728	5147282	1627714
	10:00	1000	56.2	421183	4211832	1331898
	11:00	1100	56.8	476666	4766658	1507350
	12:00	1200	58.2	656956	6569556	2077476
pm	1:00	1300	58.1	646466	6464665	2044306
	2:00	1400	58.7	736563	7365632	2329217
	3:00	1500	58.5	708548	7085475	2240624
	4:00	1600	58.9	780148	7801480	2467045
	5:00	1700	58.9	772337	7723373	2442345
	6:00	1800	58.9	778065	7780652	2460458
	7:00	1900	59.0	788546	7885459	2493601
	8:00	2000	60.9	1223833	12238326	3870098
	9:00	2100	58.4	693923	6939225	2194376
	10:00	2200	60.4	1093891	10938909	3459187
pm	11:00	2300	57.5	557105	5571049	1761720

Leq Morning Peak Hour 7:00-10:00 a.m.
55 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
59 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
56.5 dBA

Leq Daytime 7:00 am-10:00 p.m.
58.1 dBA

Leq Daytime 7:00 am-7:00 p.m.
57.6 dBA

Leq Evening 7:00 pm-:00 p.m.
59.6 dBA

Leq 24-Hour
58 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
63 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
63.7 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.4790556

Monitoring Location: Site 1
L Lofts Building

Time(s): Monday, August 2 12:00 AM through 1:00 PM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	55.0	313526	3135256	991455
am	1:00	100	54.4	278149	2781487	879583
	2:00	200	51.6	143456	1434558	453647
	3:00	300	50.5	112723	1127231	356462
	4:00	400	51.4	139440	1394402	440949
	5:00	500	55.3	339085	3390853	1072282
	6:00	600	57.9	609976	6099764	1928915
	7:00	700	56.9	487017	4870169	1540083
	8:00	800	55.8	383603	3836030	1213059
	9:00	900	56.7	462768	4627677	1463400
	10:00	1000	64.0	2531314	25313139	8004717
	11:00	1100	60.9	1237425	12374253	3913082
	12:00	1200	59.7	929281	9292809	2938644
pm	1:00	1300		1	10	3
	2:00	1400		1	10	3
	3:00	1500		1	10	3
	4:00	1600		1	10	3
	5:00	1700		1	10	3
	6:00	1800		1	10	3
	7:00	1900		1	10	3
	8:00	2000		1	10	3
	9:00	2100		1	10	3
	10:00	2200		1	10	3
pm	11:00	2300		1	10	3

Leq Morning Peak Hour 7:00-10:00 a.m.
56 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
0 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
53.3 dBA

Leq Daytime 7:00 am-10:00 p.m.
56.0 dBA

Leq Daytime 7:00 am-7:00 p.m.
57.0 dBA

Leq Evening 7:00 pm-:00 p.m.
0.0 dBA

Leq 24-Hour
55 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
60 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
60.2 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 1.109E-06

Monitoring Location: Site 2
Brand+ Building

Time(s): Thursday, July 29 3:00 PM through July 30 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24		1	10	3
am	1:00	100		1	10	3
	2:00	200		1	10	3
	3:00	300		1	10	3
	4:00	400		1	10	3
	5:00	500		1	10	3
	6:00	600		1	10	3
	7:00	700		1	10	3
	8:00	800		1	10	3
	9:00	900		1	10	3
	10:00	1000		1	10	3
	11:00	1100		1	10	3
	12:00	1200		1	10	3
pm	1:00	1300		1	10	3
	2:00	1400		1	10	3
	3:00	1500	77.4	54445877	544458773	172172981
	4:00	1600	71.5	13969858	139698583	44176571
	5:00	1700	70.3	10715563	107155631	33885586
	6:00	1800	71.0	12493669	124936691	39508451
	7:00	1900	72.7	18802474	188024741	59458644
	8:00	2000	69.4	8790448	87904478	27797837
	9:00	2100	71.7	14874830	148748296	47038341
	10:00	2200	68.8	7552000	75520003	23881522
pm	11:00	2300	74.4	27323291	273232905	86403831

Leq Morning Peak Hour 7:00-10:00 a.m.
0 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
71 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
65.9 dBA

Leq Daytime 7:00 am-10:00 p.m.
69.5 dBA

Leq Daytime 7:00 am-7:00 p.m.
68.8 dBA

Leq Evening 7:00 pm-:00 p.m.
71.5 dBA

Leq 24-Hour
68 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
73 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
73.8 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.756122506

Monitoring Location: Site 2
Brand+ Building

Time(s): Friday, July 30 12:00 AM through Saturday, July 31 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	65.6	3634653	36346534	11493783
am	1:00	100	64.2	2658631	26586306	8407328
	2:00	200	60.7	1170003	11700031	3699875
	3:00	300	59.4	878784	8787837	2778958
	4:00	400	61.6	1461544	14615444	4621809
	5:00	500	62.5	1785702	17857021	5646886
	6:00	600	66.1	4060065	40600651	12839053
	7:00	700	68.4	6893345	68933448	21798670
	8:00	800	68.8	7535291	75352905	23828681
	9:00	900	69.4	8717942	87179425	27568555
	10:00	1000	79.4	87094354	870943536	#########
	11:00	1100	71.7	14889222	148892218	47083854
	12:00	1200	70.1	10256637	102566373	32434335
pm	1:00	1300	73.2	20894934	208949338	66075582
	2:00	1400	70.2	10584345	105843453	33470639
	3:00	1500	70.0	9904054	99040540	31319369
	4:00	1600	70.9	12223878	122238778	38655296
	5:00	1700	71.3	13398556	133985561	42369955
	6:00	1800	71.4	13790150	137901503	43608284
	7:00	1900	70.6	11541148	115411477	36496314
	8:00	2000	70.1	10120804	101208037	32004791
	9:00	2100	74.7	29764254	297642539	94122835
	10:00	2200	69.9	9820690	98206899	31055748
pm	11:00	2300	74.5	27960054	279600536	88417453

Leq Morning Peak Hour 7:00-10:00 a.m.
69 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
71 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
67.7 dBA

Leq Daytime 7:00 am-10:00 p.m.
72.5 dBA

Leq Daytime 7:00 am-7:00 p.m.
72.6 dBA

Leq Evening 7:00 pm-:00 p.m.
72.3 dBA

Leq 24-Hour
71 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
75 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
75.8 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.56396381

Monitoring Location: Site 2
Brand+ Building

Time(s): Saturday, July 31 12:00 AM through Sunday, August 1 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	66.6	4587045	45870450	14505510
am	1:00	100	66.0	3987420	39874202	12609330
	2:00	200	65.8	3830275	38302754	12112394
	3:00	300	59.7	932505	9325046	2948839
	4:00	400	58.2	654112	6541118	2068483
	5:00	500	59.1	806063	8060630	2548995
	6:00	600	63.6	2290915	22909151	7244510
	7:00	700	65.1	3221321	32213210	10186711
	8:00	800	68.5	7032164	70321642	22237656
	9:00	900	68.7	7415322	74153218	23449306
	10:00	1000	69.6	9201169	92011688	29096651
	11:00	1100	70.6	11459931	114599309	36239484
	12:00	1200	72.7	18800050	188000498	59450978
pm	1:00	1300	71.3	13387824	133878242	42336017
	2:00	1400	70.4	11059080	110590800	34971882
	3:00	1500	70.5	11153907	111539065	35271749
	4:00	1600	70.2	10353400	103534002	32740326
	5:00	1700	69.4	8748105	87481053	27663938
	6:00	1800	69.8	9560267	95602665	30232217
	7:00	1900	73.2	20801612	208016124	65780474
	8:00	2000	72.6	18382179	183821794	58129555
	9:00	2100	71.3	13426753	134267530	42459121
	10:00	2200	68.1	6481507	64815071	20496325
pm	11:00	2300	66.8	4822042	48220421	15248636

Leq Morning Peak Hour 7:00-10:00 a.m.
68 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
71 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
65.0 dBA

Leq Daytime 7:00 am-10:00 p.m.
70.6 dBA

Leq Daytime 7:00 am-7:00 p.m.
70.1 dBA

Leq Evening 7:00 pm-:00 p.m.
72.4 dBA

Leq 24-Hour
69 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
73 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB
73.8 dBA **adjustment between 10:00 p.m. & 7:00 a.m.**

Difference between CNEL and Ldn
CNEL - Ldn = 0.963619638

Monitoring Location: Site 2
Brand+ Building

Time(s): Sunday, August 1 12:00 AM through Monday, August 2 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	66.9	4855199	48551986	15353486
am	1:00	100	64.3	2664821	26648207	8426903
	2:00	200	64.4	2727991	27279914	8626666
	3:00	300	60.5	1127589	11275894	3565751
	4:00	400	61.3	1360548	13605484	4302432
	5:00	500	57.5	557757	5577570	1763782
	6:00	600	61.3	1358226	13582259	4295087
	7:00	700	64.2	2660517	26605168	8413293
	8:00	800	66.2	4161175	41611752	13158791
	9:00	900	71.4	13887466	138874657	43916023
	10:00	1000	69.2	8363576	83635759	26447949
	11:00	1100	69.0	7949302	79493021	25137900
	12:00	1200	70.2	10573749	105737491	33437130
pm	1:00	1300	69.9	9777999	97779993	30920749
	2:00	1400	70.4	11074267	110742673	35019908
	3:00	1500	71.0	12577462	125774616	39773426
	4:00	1600	69.5	8900861	89008606	28146993
	5:00	1700	70.2	10452231	104522310	33052857
	6:00	1800	69.6	9089688	90896885	28744119
	7:00	1900	69.2	8344571	83445707	26387850
	8:00	2000	73.3	21370762	213707616	67580282
	9:00	2100	68.2	6595140	65951397	20855663
	10:00	2200	75.9	39118032	391180322	#########
pm	11:00	2300	69.7	9348545	93485445	29562693

Leq Morning Peak Hour 7:00-10:00 a.m.
68 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
70 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
68.5 dBA

Leq Daytime 7:00 am-10:00 p.m.
69.9 dBA

Leq Daytime 7:00 am-7:00 p.m.
69.6 dBA

Leq Evening 7:00 pm-:00 p.m.
70.8 dBA

Leq 24-Hour
69 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
75 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
75.5 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.418075102

Monitoring Location: Site 2
Brand+ Building

Time(s): Monday, August 2 12:00 AM through Monday, August 2 1:00 PM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	63.7	2323015	23230149	7346018
am	1:00	100	62.5	1760447	17604472	5567023
	2:00	200	61.3	1355018	13550178	4284943
	3:00	300	58.0	623871	6238713	1972854
	4:00	400	61.4	1376496	13764961	4352863
	5:00	500	63.3	2130061	21300608	6735844
	6:00	600	66.3	4250304	42503041	13440642
	7:00	700	68.1	6423726	64237259	20313605
	8:00	800	69.5	8871560	88715601	28054336
	9:00	900	69.0	8011392	80113923	25334247
	10:00	1000	79.1	80560286	805602861	#########
	11:00	1100	72.6	18405686	184056856	58203888
	12:00	1200	74.5	27913417	279134168	88269974
pm	1:00	1300	71.7	14667125	146671252	46381522
	2:00	1400		1	10	3
	3:00	1500		1	10	3
	4:00	1600		1	10	3
	5:00	1700		1	10	3
	6:00	1800		1	10	3
	7:00	1900		1	10	3
	8:00	2000		1	10	3
	9:00	2100		1	10	3
	10:00	2200		1	10	3
pm	11:00	2300		1	10	3

Leq Morning Peak Hour 7:00-10:00 a.m.
69 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
0 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
61.9 dBA

Leq Daytime 7:00 am-10:00 p.m.
70.4 dBA

Leq Daytime 7:00 am-7:00 p.m.
71.4 dBA

Leq Evening 7:00 pm-:00 p.m.
0.0 dBA

Leq 24-Hour
69 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
71 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
71.0 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 9.29628E-08

Monitoring Location: Site 3
Panera Bread

Time(s): Thursday, July 29 3:00 PM through July 30 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24		1	10	3
am	1:00	100		1	10	3
	2:00	200		1	10	3
	3:00	300		1	10	3
	4:00	400		1	10	3
	5:00	500		1	10	3
	6:00	600		1	10	3
	7:00	700		1	10	3
	8:00	800		1	10	3
	9:00	900		1	10	3
	10:00	1000		1	10	3
	11:00	1100		1	10	3
	12:00	1200		1	10	3
pm	1:00	1300		1	10	3
	2:00	1400		1	10	3
	3:00	1500	77.2	52887861	528878607	########
	4:00	1600	70.0	9972522	99725219	31535883
	5:00	1700	70.7	11841562	118415622	37446308
	6:00	1800	70.2	10439363	104393630	33012164
	7:00	1900	71.0	12611536	126115365	39881180
	8:00	2000	69.7	9335208	93352080	29520520
	9:00	2100	71.2	13254795	132547945	41915341
	10:00	2200	68.8	7515692	75156924	23766706
pm	11:00	2300	75.5	35778984	357789837	########

Leq Morning Peak Hour 7:00-10:00 a.m.
0 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
70 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
66.8 dBA

Leq Daytime 7:00 am-10:00 p.m.
69.0 dBA

Leq Daytime 7:00 am-7:00 p.m.
68.5 dBA

Leq Evening 7:00 pm-:00 p.m.
70.7 dBA

Leq 24-Hour
68 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
74 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB
74.2 dBA **adjustment between 10:00 p.m. & 7:00 a.m.**

Difference between CNEL and Ldn
CNEL - Ldn = 0.559777434

Monitoring Location: Site 3
Panera Bread

Time(s): Friday, July 30 12:00 AM through Saturday, July 31 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	74.9	30801155	308011548	97401804
am	1:00	100	74.1	25468830	254688303	80539513
	2:00	200	62.8	1885328	18853284	5961932
	3:00	300	59.9	972389	9723889	3074964
	4:00	400	63.0	1980815	19808154	6263888
	5:00	500	64.3	2665569	26655694	8429271
	6:00	600	66.2	4173871	41738708	13198938
	7:00	700	68.4	6893821	68938210	21800176
	8:00	800	69.2	8226157	82261571	26013393
	9:00	900	69.8	9615348	96153478	30406400
	10:00	1000	70.5	11300353	113003527	35734853
	11:00	1100	69.7	9387696	93876956	29686500
	12:00	1200	71.2	13302798	133027981	42067141
pm	1:00	1300	71.8	15019069	150190686	47494465
	2:00	1400	69.9	9669767	96697668	30578487
	3:00	1500	70.6	11488544	114885442	36329967
	4:00	1600	70.7	11710866	117108657	37033009
	5:00	1700	70.6	11403968	114039683	36062514
	6:00	1800	72.3	16824261	168242611	53202985
	7:00	1900	70.4	11018615	110186148	34843919
	8:00	2000	70.8	12009834	120098339	37978429
	9:00	2100	73.7	23646289	236462894	74776133
	10:00	2200	68.9	7851362	78513620	24828187
pm	11:00	2300	74.8	30131864	301318641	95285321

Leq Morning Peak Hour 7:00-10:00 a.m.
69 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
71 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
70.7 dBA

Leq Daytime 7:00 am-10:00 p.m.
70.8 dBA

Leq Daytime 7:00 am-7:00 p.m.
70.5 dBA

Leq Evening 7:00 pm-:00 p.m.
71.9 dBA

Leq 24-Hour
71 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
77 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
77.5 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.339605509

Monitoring Location: Site 3
Panera Bread

Time(s): Saturday, July 31 12:00 AM through Sunday, August 1 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	70.3	10680609	106806086	33775050
am	1:00	100	72.1	16241944	162419437	51361536
	2:00	200	64.9	3109074	31090736	9831754
	3:00	300	61.2	1316964	13169643	4164607
	4:00	400	60.1	1034194	10341940	3270408
	5:00	500	61.2	1326133	13261327	4193600
	6:00	600	63.2	2104728	21047281	6655735
	7:00	700	65.3	3422599	34225988	10823208
	8:00	800	67.5	5672885	56728853	17939238
	9:00	900	69.0	7979102	79791017	25232135
	10:00	1000	69.0	7969572	79695720	25202000
	11:00	1100	69.9	9807741	98077413	31014801
	12:00	1200	70.2	10388169	103881688	32850274
pm	1:00	1300	70.2	10411804	104118044	32925016
	2:00	1400	71.3	13414763	134147629	42421205
	3:00	1500	70.7	11711863	117118634	37036164
	4:00	1600	70.1	10195722	101957223	32241705
	5:00	1700	69.4	8677288	86772878	27439993
	6:00	1800	70.2	10460513	104605134	33079048
	7:00	1900	69.6	9019241	90192412	28521345
	8:00	2000	73.0	20111664	201116638	63598665
	9:00	2100	74.2	26041800	260418000	82351403
	10:00	2200	68.7	7340996	73409962	23214268
pm	11:00	2300	66.7	4658124	46581235	14730280

Leq Morning Peak Hour 7:00-10:00 a.m.
68 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
70 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
67.3 dBA

Leq Daytime 7:00 am-10:00 p.m.
70.4 dBA

Leq Daytime 7:00 am-7:00 p.m.
69.6 dBA

Leq Evening 7:00 pm-:00 p.m.
72.6 dBA

Leq 24-Hour
69 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
74 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
75.0 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.738706474

Monitoring Location: Site 3
Panera Bread

Time(s): Sunday, August 1 12:00 AM through Monday, August 2 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	68.4	6879565	68795653	21755096
am	1:00	100	66.2	4172410	41724102	13194320
	2:00	200	66.0	4003078	40030775	12658843
	3:00	300	62.1	1628328	16283284	5149227
	4:00	400	62.9	1944603	19446032	6149375
	5:00	500	58.9	774128	7741284	2448009
	6:00	600	61.7	1471946	14719464	4654703
	7:00	700	64.2	2619660	26196604	8284094
	8:00	800	65.5	3581542	35815416	11325829
	9:00	900	72.0	15837550	158375500	50082731
	10:00	1000	69.3	8565663	85656633	27087006
	11:00	1100	70.9	12256515	122565150	38758503
	12:00	1200	69.2	8272161	82721614	26158871
pm	1:00	1300	71.7	14924988	149249883	47196957
	2:00	1400	69.6	9127335	91273352	28863168
	3:00	1500	70.8	11899919	118999189	37630848
	4:00	1600	69.9	9775005	97750053	30911281
	5:00	1700	69.3	8593756	85937556	27175841
	6:00	1800	69.6	9098043	90980433	28770539
	7:00	1900	71.7	14822655	148226550	46873351
	8:00	2000	70.4	10869135	108691354	34371224
	9:00	2100	68.7	7358885	73588847	23270837
	10:00	2200	74.0	25213318	252133179	79731512
pm	11:00	2300	66.5	4428962	44289625	14005609

Leq Morning Peak Hour 7:00-10:00 a.m.
69 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
70 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
67.5 dBA

Leq Daytime 7:00 am-10:00 p.m.
69.9 dBA

Leq Daytime 7:00 am-7:00 p.m.
69.8 dBA

Leq Evening 7:00 pm-:00 p.m.
70.4 dBA

Leq 24-Hour
69 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
74 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB
74.8 dBA **adjustment between 10:00 p.m. & 7:00 a.m.**

Difference between CNEL and Ldn
CNEL - Ldn = 0.451194128

Monitoring Location: Site 3
Panera Bread

Time(s): Monday, August 2 12:00 AM through Monday, August 2 12:00 PM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	67.6	5694518	56945184	18007648
am	1:00	100	64.5	2836887	28368868	8971024
	2:00	200	61.4	1380101	13801014	4364264
	3:00	300	59.5	894769	8947691	2829508
	4:00	400	62.2	1666679	16666791	5270502
	5:00	500	63.9	2446409	24464086	7736223
	6:00	600	67.6	5694256	56942562	18006819
	7:00	700	67.8	5992499	59924994	18949947
	8:00	800	68.7	7349825	73498250	23242187
	9:00	900	69.4	8780333	87803333	27765852
	10:00	1000	69.8	9556085	95560849	30218994
	11:00	1100	73.7	23487511	234875112	74274032
	12:00	1200	70.6	11586653	115866530	36640214
pm	1:00	1300		1	10	3
	2:00	1400		1	10	3
	3:00	1500		1	10	3
	4:00	1600		1	10	3
	5:00	1700		1	10	3
	6:00	1800		1	10	3
	7:00	1900		1	10	3
	8:00	2000		1	10	3
	9:00	2100		1	10	3
	10:00	2200		1	10	3
pm	11:00	2300		1	10	3

Leq Morning Peak Hour 7:00-10:00 a.m.
69 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
0 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
63.6 dBA

Leq Daytime 7:00 am-10:00 p.m.
66.5 dBA

Leq Daytime 7:00 am-7:00 p.m.
67.5 dBA

Leq Evening 7:00 pm-:00 p.m.
0.0 dBA

Leq 24-Hour
66 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
71 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
70.6 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 1.03236E-07

Monitoring Location: Site 4
The Americana on Brand

Time(s): Thursday, July 29 4:00 PM through July 30 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24		1	10	3
am	1:00	100		1	10	3
	2:00	200		1	10	3
	3:00	300		1	10	3
	4:00	400		1	10	3
	5:00	500		1	10	3
	6:00	600		1	10	3
	7:00	700		1	10	3
	8:00	800		1	10	3
	9:00	900		1	10	3
	10:00	1000		1	10	3
	11:00	1100		1	10	3
	12:00	1200		1	10	3
pm	1:00	1300		1	10	3
	2:00	1400		1	10	3
	3:00	1500		1	10	3
	4:00	1600	71.0	12465250	124652502	39418582
	5:00	1700	71.2	13130099	131300990	41521019
	6:00	1800	73.3	21379916	213799163	67609232
	7:00	1900	70.3	10669769	106697686	33740771
	8:00	2000	70.9	12382833	123828325	39157955
	9:00	2100	71.6	14368618	143686180	45437560
	10:00	2200	71.2	13175345	131753451	41664100
pm	11:00	2300	70.9	12227791	122277908	38667670

Leq Morning Peak Hour 7:00-10:00 a.m.
0 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
72 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
64.5 dBA

Leq Daytime 7:00 am-10:00 p.m.
67.5 dBA

Leq Daytime 7:00 am-7:00 p.m.
65.9 dBA

Leq Evening 7:00 pm-:00 p.m.
71.0 dBA

Leq 24-Hour
67 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
71 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
72.4 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.931031981

Monitoring Location: Site 4
The Americana on Brand

Time(s): Friday, July 30 12:00 AM through Saturday, July 31 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	65.5	3584462	35844622	11335065
am	1:00	100	64.5	2844219	28442188	8994210
	2:00	200	63.0	1998918	19989181	6321134
	3:00	300	59.3	852796	8527957	2696777
	4:00	400	63.6	2314739	23147388	7319847
	5:00	500	64.4	2737966	27379657	8658208
	6:00	600	67.0	4955129	49551294	15669495
	7:00	700	74.9	31127483	311274827	98433743
	8:00	800	70.3	10616687	106166867	33572911
	9:00	900	72.0	15669098	156690981	49550039
	10:00	1000	70.2	10440132	104401322	33014597
	11:00	1100	77.0	49792278	497922785	#########
	12:00	1200	71.5	14160937	141609373	44780816
pm	1:00	1300	70.9	12164521	121645207	38467592
	2:00	1400	71.9	15379067	153790674	48632881
	3:00	1500	71.4	13704021	137040205	43335918
	4:00	1600	71.4	13800442	138004421	43640830
	5:00	1700	70.8	11998474	119984736	37942505
	6:00	1800	73.1	20212638	202126381	63917974
	7:00	1900	73.2	21058624	210586245	66593218
	8:00	2000	72.4	17316814	173168143	54760575
	9:00	2100	75.1	32275650	322756502	#########
	10:00	2200	70.0	10063059	100630586	31822185
pm	11:00	2300	69.3	8609045	86090454	27224192

Leq Morning Peak Hour 7:00-10:00 a.m.
73 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
72 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
66.3 dBA

Leq Daytime 7:00 am-10:00 p.m.
72.9 dBA

Leq Daytime 7:00 am-7:00 p.m.
72.6 dBA

Leq Evening 7:00 pm-:00 p.m.
73.7 dBA

Leq 24-Hour
71 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
74 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
75.3 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 0.892840982

Monitoring Location: Site 4
The Americana on Brand

Time(s): Saturday, July 31 12:00 AM through Sunday, August 1 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	67.0	5012623	50126225	15851304
am	1:00	100	66.4	4320172	43201716	13661582
	2:00	200	66.8	4757272	47572722	15043816
	3:00	300	63.6	2277084	22770837	7200771
	4:00	400	59.5	883959	8839588	2795323
	5:00	500	59.8	947364	9473643	2995829
	6:00	600	66.2	4128545	41285448	13055605
	7:00	700	66.5	4480825	44808252	14169613
	8:00	800	68.9	7808201	78082013	24691700
	9:00	900	69.3	8465702	84657025	26770902
	10:00	1000	70.1	10127051	101270511	32024547
	11:00	1100	75.7	37403824	374038236	#########
	12:00	1200	71.9	15355926	153559256	48559701
pm	1:00	1300	72.0	16016145	160161453	50647498
	2:00	1400	72.8	19158125	191581249	60583310
	3:00	1500	71.8	14976661	149766610	47360361
	4:00	1600	70.9	12409778	124097776	39243163
	5:00	1700	70.7	11875667	118756667	37554155
	6:00	1800	70.3	10675544	106755436	33759033
	7:00	1900	72.4	17360091	173600911	54897428
	8:00	2000	71.6	14582098	145820976	46112641
	9:00	2100	76.0	40074582	400745819	#########
	10:00	2200	69.6	9126137	91261373	28859380
pm	11:00	2300	67.7	5940062	59400623	18784126

Leq Morning Peak Hour 7:00-10:00 a.m.
68 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
71 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
66.2 dBA

Leq Daytime 7:00 am-10:00 p.m.
72.1 dBA

Leq Daytime 7:00 am-7:00 p.m.
71.5 dBA

Leq Evening 7:00 pm-:00 p.m.
73.8 dBA

Leq 24-Hour
71 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
74 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB
75.1 dBA **adjustment between 10:00 p.m. & 7:00 a.m.**

Difference between CNEL and Ldn
CNEL - Ldn = 0.980641368

Monitoring Location: Site 4
The Americana on Brand

Time(s): Sunday, August 1 12:00 AM through Monday, August 2 12:00 AM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	67.7	5856700	58567003	18520512
am	1:00	100	72.4	17270504	172705035	54614128
	2:00	200	64.2	2649903	26499031	8379730
	3:00	300	69.1	8165203	81652033	25820640
	4:00	400	64.3	2676233	26762335	8462993
	5:00	500	59.5	882560	8825595	2790898
	6:00	600	62.9	1953876	19538760	6178698
	7:00	700	64.5	2824256	28242556	8931080
	8:00	800	67.5	5623556	56235557	17783245
	9:00	900	67.0	5052136	50521356	15976256
	10:00	1000	69.5	8903648	89036484	28155808
	11:00	1100	71.2	13099478	130994783	41424188
	12:00	1200	69.3	8531532	85315315	26979072
pm	1:00	1300	72.2	16766716	167667157	53021010
	2:00	1400	70.9	12298241	122982410	38890453
	3:00	1500	70.3	10803538	108035379	34163787
	4:00	1600	70.9	12318051	123180511	38953098
	5:00	1700	72.6	18247694	182476944	57704276
	6:00	1800	70.5	11198555	111985553	35412941
	7:00	1900	72.9	19291056	192910559	61003675
	8:00	2000	71.0	12448929	124489293	39366971
	9:00	2100	71.5	14198910	141989098	44900895
	10:00	2200	75.4	34620952	346209515	#########
pm	11:00	2300	74.0	25003454	250034536	79067863

Leq Morning Peak Hour 7:00-10:00 a.m.
67 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
72 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
70.4 dBA

Leq Daytime 7:00 am-10:00 p.m.
70.6 dBA

Leq Daytime 7:00 am-7:00 p.m.
70.2 dBA

Leq Evening 7:00 pm-:00 p.m.
71.9 dBA

Leq 24-Hour
71 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
77 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB
77.2 dBA **adjustment between 10:00 p.m. & 7:00 a.m.**

Difference between CNEL and Ldn
CNEL - Ldn = 0.356117349

Monitoring Location: Site 4
The Americana on Brand

Time(s): Monday, August 2 12:00 AM through Monday, August 2 1:00 PM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	64.2	2612655	26126546	8261939
am	1:00	100	65.5	3544892	35448919	11209933
	2:00	200	64.1	2567249	25672490	8118354
	3:00	300	59.6	902716	9027157	2854638
	4:00	400	65.4	3499444	34994436	11066212
	5:00	500	65.8	3801605	38016051	12021731
	6:00	600	68.2	6631565	66315645	20970848
	7:00	700	71.6	14580721	145807210	46108288
	8:00	800	70.3	10692100	106920997	33811388
	9:00	900	70.1	10167941	101679406	32153851
	10:00	1000	71.4	13832574	138325739	43742440
	11:00	1100	75.3	33650847	336508470	#########
	12:00	1200	71.2	13287216	132872162	42017867
pm	1:00	1300	70.8	11982433	119824327	37891779
	2:00	1400		1	10	3
	3:00	1500		1	10	3
	4:00	1600		1	10	3
	5:00	1700		1	10	3
	6:00	1800		1	10	3
	7:00	1900		1	10	3
	8:00	2000		1	10	3
	9:00	2100		1	10	3
	10:00	2200		1	10	3
pm	11:00	2300		1	10	3

Leq Morning Peak Hour 7:00-10:00 a.m.
71 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
0 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
64.2 dBA

Leq Daytime 7:00 am-10:00 p.m.
68.6 dBA

Leq Daytime 7:00 am-7:00 p.m.
69.6 dBA

Leq Evening 7:00 pm-:00 p.m.
0.0 dBA

Leq 24-Hour
67 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
72 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
71.6 dBA

Difference between CNEL and Ldn
CNEL - Ldn = 8.1944E-08

APPENDIX B

Roadway Noise Worksheets

NOISE LEVEL CONTOURS -Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL
Brand Blvd (Colorado to Harvard											
2016		6	10	23,594	40	75	0	0	1.8%	0.7%	67.0
2021		6	10	24,798	40	75	0	0	1.8%	0.7%	67.3
Brand Boulevard (Broadway to Wilson)											
2016		6	10	20,917	40	75	0	0	1.8%	0.7%	66.5
2021		6	10	21,984	40	75	0	0	1.8%	0.7%	66.7
Brand Boulevard (n/o Lexington Drive)											
2016		6	10	25,720	40	75	0	0	1.8%	0.7%	67.4
2021		6	10	27,032	40	75	0	0	1.8%	0.7%	67.6

ROADWAY NAME Segment	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Brand Blvd (Colorado to Harvard																									
2016	18,333	2,996	2,265	371	147	21	5	32	13	67.4	76.3	81.2	-1.3	66.4	58.6	59.4	67.8	63.5	51.0	49.3	63.9	50.3	49.1	50.2	54.7
2021	19,268	3,149	2,381	390	155	23	5	34	14	67.4	76.3	81.2	-1.3	66.7	58.8	59.6	68.0	63.7	51.2	49.5	64.1	50.5	49.4	50.4	54.9
Brand Boulevard (Broadway to Wilson)																									
2016	16,253	2,656	2,008	329	130	19	4	28	12	67.4	76.3	81.2	-1.3	65.9	58.1	58.9	67.3	62.9	50.5	48.7	63.3	49.7	48.6	49.7	54.1
2021	17,082	2,792	2,110	346	137	20	4	30	12	67.4	76.3	81.2	-1.3	66.1	58.3	59.1	67.5	63.2	50.7	48.9	63.6	50.0	48.8	49.9	54.4
Brand Boulevard (n/o Lexington Drive)																									
2016	19,984	3,266	2,469	405	160	23	5	35	15	67.4	76.3	81.2	-1.3	66.8	59.0	59.8	68.2	63.8	51.4	49.6	64.2	50.6	49.5	50.6	55.0
2021	21,004	3,433	2,595	425	169	25	5	37	15	67.4	76.3	81.2	-1.3	67.0	59.2	60.0	68.4	64.1	51.6	49.8	64.5	50.9	49.7	50.8	55.3

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

APPENDIX C

SoundPLAN Output Sheets

SoundPLAN Output Sheets

Receiver	Ldn/dB(A)	Leq,d/dB(A)	Leq,e/dB(A)	Leq,n/dB(A)	Time slice	500Hz dB(A)
Americana Way (Site 4)	63.7	59.6	59.6	56.1	Ldn	63.7
					Leq,d	59.6
					Leq,e	59.6
					Leq,n	56.1
Craftstay Glendale Home Suites	51.2	47.1	47.1	43.6	Ldn	51.2
					Leq,d	47.1
					Leq,e	47.1
					Leq,n	43.6
Elevé Glendale	47.4	43.3	43.3	39.8	Ldn	47.4
					Leq,d	43.3
					Leq,e	43.3
					Leq,n	39.8
L Lofts (215 N. Maryland)	64.3	60.3	60.3	56.7	Ldn	64.3
					Leq,d	60.3
					Leq,e	60.3
					Leq,n	56.7
Maryland Capri (215 N. Maryland)	51.6	47.6	47.6	44	Ldn	51.6
					Leq,d	47.6
					Leq,e	47.6
					Leq,n	44
The Brand (120 W. Wilson Ave)	62.3	58.2	58.2	54.7	Ldn	62.3
					Leq,d	58.2
					Leq,e	58.2
					Leq,n	54.7