

ACOUSTICAL ANALYSIS

**197 WEST GRAND AVENUE
GROVER BEACH, CALIFORNIA**

WJVA Project No. 23-44

PREPARED FOR

**COASTAL COMMUNITY BUILDERS
330 JAMES WAY
PISMO BEACH, CALIFORNIA 93449**

PREPARED BY

**WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA**



DECEMBER 11, 2023

INTRODUCTION

The project is the new construction of a proposed four-story mixed-use building at 197 W. Grand Avenue, in Grover Beach, California. The ground floor contains 2,077 square-feet of commercial/restaurant space, along W. Grand Avenue, as well as residential units. Floors 2-4 are residential units only, and there is residential only on the non-Grand Avenue frontage. There are a total of 57 parking spaces provided, eleven (11) of which are on the street.

The City of Grover Beach has requested an acoustical analysis to assess project site noise exposure and determine if noise mitigation measures should be incorporated into the project design. This analysis, prepared by WJV Acoustics, Inc. (WJVA), is based upon a site visit and noise measurements conducted on December 5 & 6, 2023 and the project site plan prepared by RRM Design Group (dated 11/2/23).

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides typical A-weighted sound levels for common noise sources.

CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

The City of Grover Beach Noise Element of the General Plan establishes land use compatibility criteria in terms of the Day/Night Level (L_{dn}) or the Community Noise Equivalent Level (CNEL) to describe noise exposure for noise compatibility planning purposes. Both the L_{dn} and CNEL represent the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The CNEL includes an additional penalty of 5 dB (technically 4.77 dB) that is added to noise levels occurring during the evening hours between 7:00 p.m. and 10:00 p.m. The CNEL is utilized to describe aircraft noise exposure as required by the State of California. Both the L_{dn} and CNEL represent cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. The L_{dn} and CNEL are considered to be equivalent descriptors of the community noise environment for the purposes of this study.

The Noise Element establishes a land use compatibility criterion of 60 dB L_{dn} for exterior noise exposure in outdoor activity areas of new residential developments. The City of Grover Beach General Plan defines outdoor activity areas as patios, decks, balconies, outdoor eating areas, swimming pool areas, yards of dwelling units and other areas that have been designated for outdoor activities and recreation. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

The Noise Element also requires that interior noise exposure attributable to exterior noise sources not exceed 45 dB L_{dn} . The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep. Table I provides the City of Grover Beach exterior and interior noise level compatibility standards for specific land use designations, for transportation (roadway traffic, railroad) noise sources.

TABLE I MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NEW DEVELOPMENT TRANSPORTATION NOISE SOURCES CITY OF GROVER BEACH			
Land Use Categories	Outdoor Activity Area ¹	Interior Spaces	
	L _{dn} /CNEL, dB	L _{dn} /CNEL, dB	L _{eq} , dB ²
Residential	60 ³	45	--
Transient Lodging	60 ³	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums	--	--	35
Churches, Meeting Halls	60 ³	--	45
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

1 The exterior noise level standard shall apply to the property line of the receiving land use when the outdoor activity area is unknown

2 As determined for a typical worst-case hour during use periods

3. An exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed if:

- exterior noise level reduction measures were implemented; and
- the best-available exterior noise level reduction measures do not result in 60 dB L_{dn}/CNEL; and
- interior noise levels comply with this table.

The City of Grover Beach General Plan Noise Element also provides noise standards for stationary (non-transportation) noise standards.

TABLE II MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NEW DEVELOPMENT STATIONARY NOISE SOURCES¹ CITY OF GROVER BEACH		
	Daytime (7 a.m. to 10 p.m.)	Nighttime ² (10 p.m. to 7 a.m.)
Hourly Leq, dB	50	45
Maximum Level, dB	70	65
Maximum Level, dB-Impulsive Noise	65	60

¹As determined at the property line of the receiving use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures. Add ten decibels to the noise level standards in this table for parks and playground.

²Applies only where the receiving land use operates or is occupied during nighttime hours.

Source: City of Grover Beach as interpreted by WJVA

PROJECT SITE NOISE EXPOSURE

The project site is located at 197 W. Grand Avenue, in Grover Beach, California. The project site is generally bordered by California State Route 1 (SR 1) and the Union Pacific (UP) Railroad line to the west, residential land uses and undeveloped land to the north and northeast, 2nd Street to the east and Grand Avenue to the south. The dominant sources of noise affecting the project site is vehicle traffic along SR 1 and Grand Avenue as well as noise associated with railroad operations on the UP line.

AMBIENT NOISE SURVEY-

Measurements of existing ambient noise levels in the project vicinity were conducted on December 5 & 6, 2023. Long-term (24-hour) ambient noise level measurements were conducted at two (2) location (sites LT-1 and LT-2). Ambient noise levels were measured for a period of 48 continuous hours at both ambient noise measurement sites. Site LT-1 was located within the northwestern portion of the project site, along the project site property line adjacent to the UP line. Site LT-2 was located within the southwestern portion of the project site, along the project site property line adjacent to both the UP line and Grand Avenue. The noise monitors measured noise from all sources impacting the project site, for a continuous period of 48 hours. The locations of long-term ambient noise measurement sites are provided as Figure 2.

Measured hourly energy average noise levels (L_{eq}) at site LT-1 ranged from a low of 43.8 dB between 2:00 a.m. and 3:00 a.m. on December 5th to a high of 70.2 dBA between 3:00 p.m. and 4:00 p.m. on December 6th. Hourly maximum (L_{max}) noise levels at site LT-1 ranged from 54.9 to 102.9 dBA. Residual noise levels at the monitoring site, as defined by the L_{90} , ranged from 39.2 to 54.4 dBA. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured 24-hour L_{dn} value at site LT-1 was 65.8 dB L_{dn} on December 5th and 63.9 dB L_{dn} on December 6th, with an overall 2-day average of **65.0 dB L_{dn}** . Figure 3 graphically depicts hourly variations in ambient noise levels at site LT-1 for the two days of ambient noise measurements. Figure 4 provides a photograph of measurement site LT-1.

Measured hourly energy average noise levels (L_{eq}) at site LT-2 ranged from a low of 45.4 dB between 2:00 a.m. and 3:00 a.m. on December 5th to a high of 70.8 dBA between noon. and 1:00 p.m. on December 6th. Hourly maximum (L_{max}) noise levels at site LT-2 ranged from 58.6 to 103.0 dBA. Residual noise levels at the monitoring site, as defined by the L_{90} , ranged from 40.1 to 55.5 dBA. The measured 24-hour L_{dn} value at site LT-2 was 68.7 dB L_{dn} on December 5th and 66.7 dB L_{dn} on December 6th, with an overall 2-day average of **67.3 dB L_{dn}** . Figure 5 graphically depicts hourly variations in ambient noise levels at site LT-2 for the two days of ambient noise measurements. Figure 6 provides a photograph of measurement site LT-2.

Table III provides the measured hourly noise levels at the two ambient noise measurement sites for the day of December 5th. Table IV provides the hourly noise levels at the two ambient noise measurement sites for the day of December 6th.

TABLE III SUMMARY OF 24-HOUR NOISE LEVEL MEASUREMENTS 197 W. GRAND AVE., GROVER BEACH, CA DECEMBER 5, 2023				
Time	A-Weighted Decibels, dB			
	LT-1		LT-2	
	L _{eq}	L _{max}	L _{eq}	L _{max}
12:00 a.m.	46.8	63.7	47.9	69.2
1:00 a.m.	45.8	54.9	46.0	60.4
2:00 a.m.	43.8	63.9	45.4	65.5
3:00 a.m.	48.2	58.7	48.6	58.6
4:00 a.m.	52.7	63.8	53.0	64.6
5:00 a.m.	54.6	70.2	55.2	66.8
6:00 a.m.	68.4	101.7	70.9	103.0
7:00 a.m.	58.0	72.5	59.0	72.1
8:00 a.m.	55.1	71.4	56.9	73.6
9:00 a.m.	54.7	77.1	58.2	80.7
10:00 a.m.	55.2	76.5	58.8	78.1
11:00 a.m.	55.1	73.2	58.7	80.6
12:00 p.m.	63.0	91.2	68.1	96.9
1:00 p.m.	55.1	74.7	60.2	83.0
2:00 p.m.	60.1	87.6	64.9	93.5
3:00 p.m.	54.2	70.7	57.7	76.0
4:00 p.m.	63.1	90.9	70.8	100.3
5:00 p.m.	52.3	66.3	56.0	71.1
6:00 p.m.	51.9	75.3	55.9	79.8
7:00 p.m.	54.2	80.3	59.0	84.8
8:00 p.m.	67.1	95.7	71.2	100.9
9:00 p.m.	52.2	62.8	54.4	70.0
10:00 p.m.	52.0	66.6	54.6	75.8
11:00 p.m.	51.1	62.9	52.4	66.1
24-Hour L _{dn} , dB	65.8 dB L _{dn}		68.7 dB L _{dn}	

Source: WJV Acoustics, Inc.

TABLE IV SUMMARY OF 24-HOUR NOISE LEVEL MEASUREMENTS 197 W. GRAND AVE., GROVER BEACH, CA DECEMBER 6, 2023				
Time	A-Weighted Decibels, dB			
	LT-1		LT-2	
	L_{eq}	L_{max}	L_{eq}	L_{max}
12:00 a.m.	54.6	61.3	55.6	64.0
1:00 a.m.	54.6	60.3	55.6	65.3
2:00 a.m.	51.7	57.9	53.0	59.0
3:00 a.m.	53.4	59.1	54.8	60.7
4:00 a.m.	49.7	58.3	51.4	61.7
5:00 a.m.	57.2	63.4	58.6	65.3
6:00 a.m.	63.3	94.4	66.8	96.7
7:00 a.m.	55.4	68.0	58.4	77.5
8:00 a.m.	52.5	66.5	56.1	69.0
9:00 a.m.	51.8	66.3	56.2	70.5
10:00 a.m.	52.8	70.3	57.9	77.3
11:00 a.m.	54.0	69.1	64.1	86.7
12:00 p.m.	67.4	92.1	73.8	98.6
1:00 p.m.	55.1	76.8	58.6	77.9
2:00 p.m.	60.0	87.9	63.8	92.1
3:00 p.m.	70.2	102.9	70.3	100.9
4:00 p.m.	63.3	97.4	62.9	91.9
5:00 p.m.	54.2	72.6	56.5	72.9
6:00 p.m.	51.2	70.5	53.6	70.6
7:00 p.m.	49.7	66.4	52.5	69.9
8:00 p.m.	48.9	71.8	51.2	71.9
9:00 p.m.	63.7	92.8	69.1	98.3
10:00 p.m.	48.2	64.4	49.5	68.3
11:00 p.m.	48.1	66.1	49.1	72.9
24-Hour L_{dn} , dB	63.9 dB L_{dn}		66.7 dB L_{dn}	

Source: WJV Acoustics, Inc.

Noise levels measured at the two ambient noise measurement sites (LT-1 and LT-2) take into account all noise sources impacting the project site, including the two dominant sources of noise, traffic along CA 1 and railroad operations on the Union Pacific railroad line (approximately eight (8) Amtrak trains per day). Based upon the noise levels measured over the two-day period, noise exposure levels at the project site property line adjacent to the railroad are in the range of approximately 65 to 67 dB L_{dn} . Noise levels are slightly higher along the southern portion of the project site as compared to those measured at the northern portion of the project site, as the southern portion of the project site is closer to the grade crossing at Grand Avenue, where the train engineers are required to sound their warning horns.

Exterior Noise Compliance

The City of Grover Beach General Plan provides an exterior noise level standard of 60 dB L_{dn} for residential land uses. Exterior noise level standards apply to outdoor activity areas of new residential developments. The City of Grover Beach General Plan defines outdoor activity areas as patios, decks, balconies, outdoor eating areas, swimming pool areas, yards of dwelling units and other areas that have been designated for outdoor activities and recreation.

Based upon the ambient noise survey conducted along the project site property line adjacent to the railroad line, exterior noise exposure within the project site along the property line is approximately 65-67 dB L_{dn} . The project would include an outdoor common walk area between the residential units and the property line adjacent to the railroad line. Based upon the ambient noise level measurements conducted at the site, exterior noise levels at the outdoor common walk area would be approximately 65-67 dB L_{dn} . Based upon the increase in setback distance from the property line to the location of the closest proposed unit patios, balconies and roof decks, exterior noise levels within these areas would be approximately 63-65 dB L_{dn} . Additionally, depending on final design of the unit balconies, partial acoustic shielding would likely be provided within the balcony spaces that would further reduce exterior noise levels within the individual unit balconies.

As described above, the City of Grover Beach exterior noise level standard for new residential land uses is 60 dB L_{dn} . The General Plan noise standards state that an exterior noise level of up to 65 dB L_{dn} may be allowed if:

- a. exterior noise level reduction measures were implemented; and
- b. the best-available exterior noise level reduction measures do not result in 60 dB L_{dn} ; and
- c. interior noise levels comply with the applicable standards.

The project proposes the construction of an 8-foot sound wall along the project site property line adjacent to the Union Pacific Railroad line. The finished grade elevation of the project site will be approximately at the same elevation of the railroad tracks in the vicinity of the project site.

A sound wall insertion loss program based on the FHWA Model was utilized to calculate the noise attenuation that would be provided by the 8-foot sound wall along the western portion of the project site (adjacent to the UP railroad line). The model calculates the insertion loss (noise reduction) of a wall of given height based on the effective height of the noise source, height of the receiver, distance from the receiver to the wall, and distance from the noise source to the wall. It was assumed for the sound wall calculations that the effective railroad source height is 10 feet above the tracks. The standard height of a residential receiver is five (5) feet above the ground elevation.

Based upon the above-described project-site noise exposure levels, standard assumptions, and method of analysis, WJVA determined that a sound wall constructed along the entire project site

frontage with the UP line would reduce noise levels within the outdoor common walk area by approximately nine (9) dB. This would result in exterior noise levels of approximately 56-58 dB L_{dn} within the outdoor common walk area.

In regards to exterior noise levels within individual unit balconies as well as roof top decks, the sound wall would not provide acoustic shielding within these areas, and exterior noise exposure would be expected to be in the range of approximately 63-65 dB L_{dn} . As described above, depending on the design of the individual unit balconies, partial acoustic shielding could result in noise levels slightly lower than described. As described above, the Grover Beach General Plan will allow an exterior noise level up to 65 dB L_{dn} if the appropriate criteria are met.

The U.S. Department of Housing and Urban Development (HUD) provides some guidance regarding exterior noise levels at balconies located within high noise exposure areas. A HUD policy guidance document (dated December 22, 2016) addresses the department's position on building facades exposed to noise, and in particular, noise levels within individual balconies of proposed multi-family residential developments. The document is included for reference as Appendix C.

The HUD document, reviewed by WJVA, provides the department's interpretation of the applicability of exterior noise standards to individual unit balconies and patios of multi-family residential land uses. The HUD document states the following:

"Balconies are amenities. Balconies are not required for the full functioning of dwelling units that have reliable, alternative spaces within the structure; therefore, they are ancillary to the principal land use—housing. Because their use is optional, the negative effects of noise exposure are not an important determinant of overall project viability."

HUD considers noise levels within interior spaces to be the primary concern with respect to noise-sensitive environments within noise-impacted areas.

"Sleep is the most noise-sensitive activity in a HUD-assisted project, and therefore, bedrooms are the most noise-sensitive interior spaces."

"Balconies are not locations where it is determined that quiet outdoor space is required in an area ancillary to the principal use on the site"

And

"Furthermore, balconies are not indicative of an "outdoor noise sensitive activity""

While the City of Grover Beach has historically applied the exterior noise level standard to individual patios and balconies of multi-family residential developments, the HUD policy guidance document provides some perspective that is considered applicable to this project.

Interior Noise Compliance

The City of Grover Beach interior noise level standard is 45 dB L_{dn} . The exterior noise exposure at the closest proposed residential building facades to the UP railroad line would be approximately 65 dB L_{dn} . This means that the proposed residential construction must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of approximately 20 dB ($65-45=20$).

A specific analysis of interior noise levels was not performed. However, it may be assumed that residential construction methods complying with current building code requirements will reduce exterior noise levels by approximately 25 dB if windows and doors are closed. This assumed outdoor-to-indoor NLR is widely accepted and applied within the environmental noise and acoustics industry. This will be sufficient for compliance with the City's 45 dB L_{dn} interior standard for all proposed units. Requiring that it be possible for windows and doors to remain closed for sound insulation means that air conditioning or mechanical ventilation will be required.

CONCLUSIONS AND RECOMMENDATIONS

The City of Grover Beach General Plan Noise Element establishes an exterior noise level standard of 60 dB L_{dn} for outdoor activity areas of new residential land uses. The City of Grover Beach General Plan defines outdoor activity areas as patios, decks, balconies, outdoor eating areas, swimming pool areas, yards of dwelling units and other areas that have been designated for outdoor activities and recreation. The General Plan noise standards state that an exterior noise level of up to 65 dB L_{dn} may be allowed if:

- a. exterior noise level reduction measures were implemented; and
- b. the best-available exterior noise level reduction measures do not result in 60 dB L_{dn} ; and
- c. interior noise levels comply with the applicable standards.

The project has implemented exterior noise level reduction measures by means of an 8-foot sound wall located along the project site western property line, adjacent to the Union Pacific Railroad line. The sound wall would reduce project site noise exposure to approximately 56-58 dB L_{dn} within the outdoor common walk area, located between the proposed residential units and the property line adjacent to the railroad line. Sound walls are not effective at upper floor elevations, and based upon the setback distance between the proposed residential units, exterior noise levels within individual unit balconies and roof top decks would be expected to be in the range of approximately 63-65 dB L_{dn} . Such noise levels are considered conditionally acceptable by the City of Grover Beach. Additionally, Appendix C of this report provides the U.S. Department of Housing and Urban Development (HUD) guidance on exterior noise levels within individual unit balconies:

“Balconies are amenities. Balconies are not required for the full functioning of dwelling units that have reliable, alternative spaces within the structure; therefore, they are ancillary to the principal land use—housing. Because their use is optional, the negative effects of noise exposure are not an important determinant of overall project viability.”

The City of Grover Beach interior noise level standard for new residential land uses is 45 dB L_{dn} . Based upon the findings of this analysis, exterior noise levels within individual residential units would not be expected to exceed 40 dB L_{dn} , and therefore comply with the City's interior noise level standard.

Based upon the above-described considerations, the proposed residential units at 197 W. Grand Avenue will conditionally comply with all City of Grover Beach exterior and interior noise level standards, provided the following mitigation measures are incorporated into final project design:

- An 8-foot sound wall is constructed along the project site property line adjacent to Union Pacific Railroad line (as proposed by the project applicant).

- Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.

The conclusions and recommendations of this acoustical analysis are based upon the best information known to WJV Acoustics, Inc. (WJVA) at the time the analysis was prepared concerning the proposed project site, project construction and site plan, railroad operations, traffic volumes and vehicle speeds. Any significant changes to these factors may require revisions to the findings of this report. Additionally, any significant future changes in motor vehicle technology, train technology, noise regulations or other factors beyond WJVA's control may result in long-term noise results different from those described by this analysis.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Walter J. Van Groningen', with a stylized flourish at the end.

Walter J. Van Groningen
President

WJV:wjv

FIGURE 1: PROJECT SITE PLAN



SITE PLAN / GROUND FLOOR PLAN
197 W GRAND AVE - GROVER BEACH

02 NOV. 2023
 2636-01-RS21

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FIGURE 2: PROJECT SITE VICINITY AND NOISE MONITORING SITE LOCATIONS



FIGURE 3: HOURLY NOISE LEVELS AT SITE LT-1

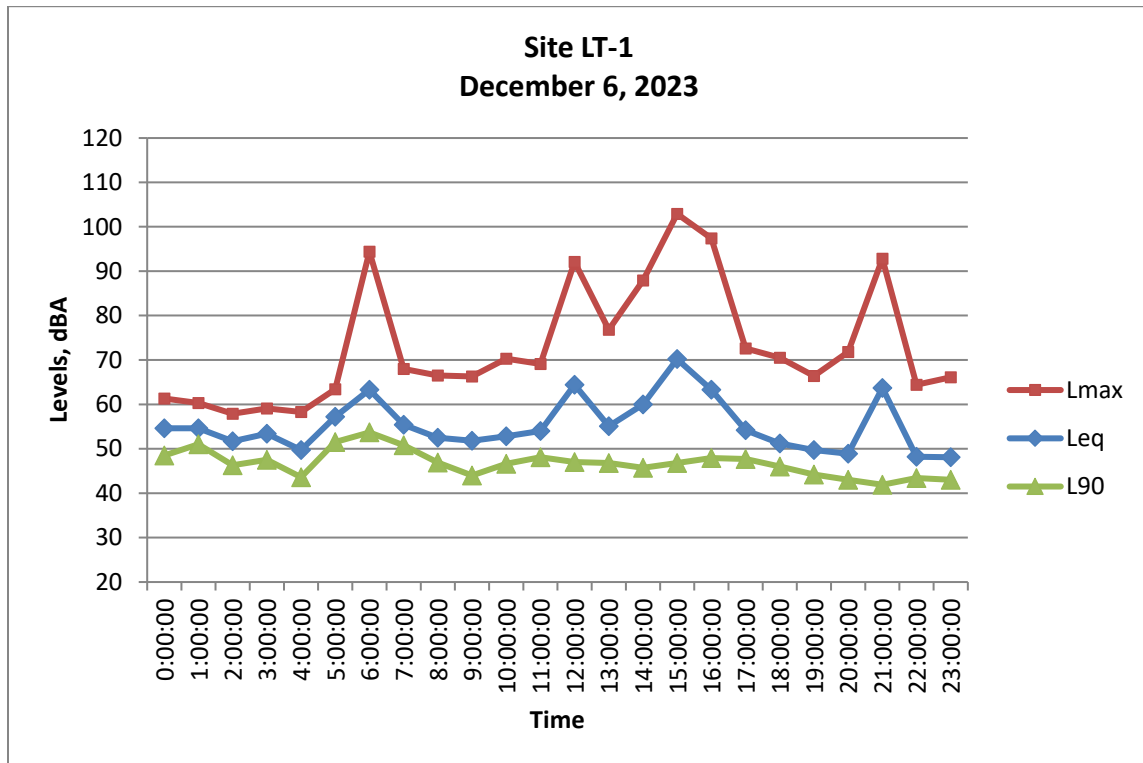
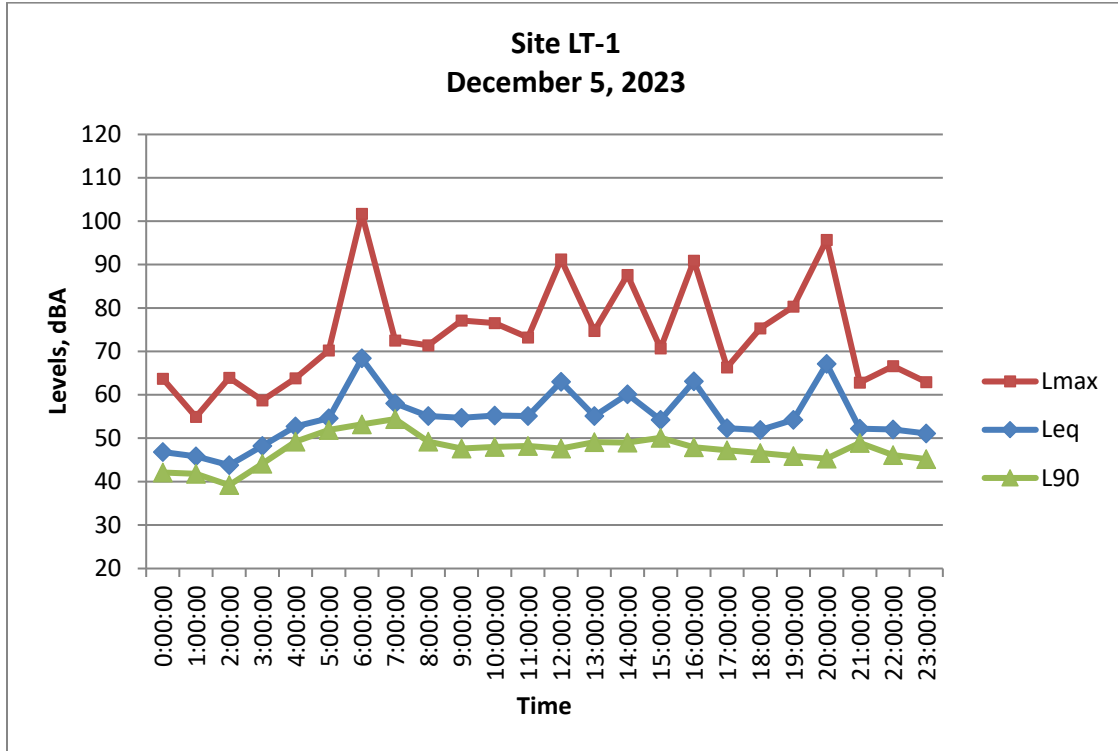


FIGURE 4: NOISE MONITORING SITE LT-1



FIGURE 5: HOURLY NOISE LEVELS AT SITE LT-2

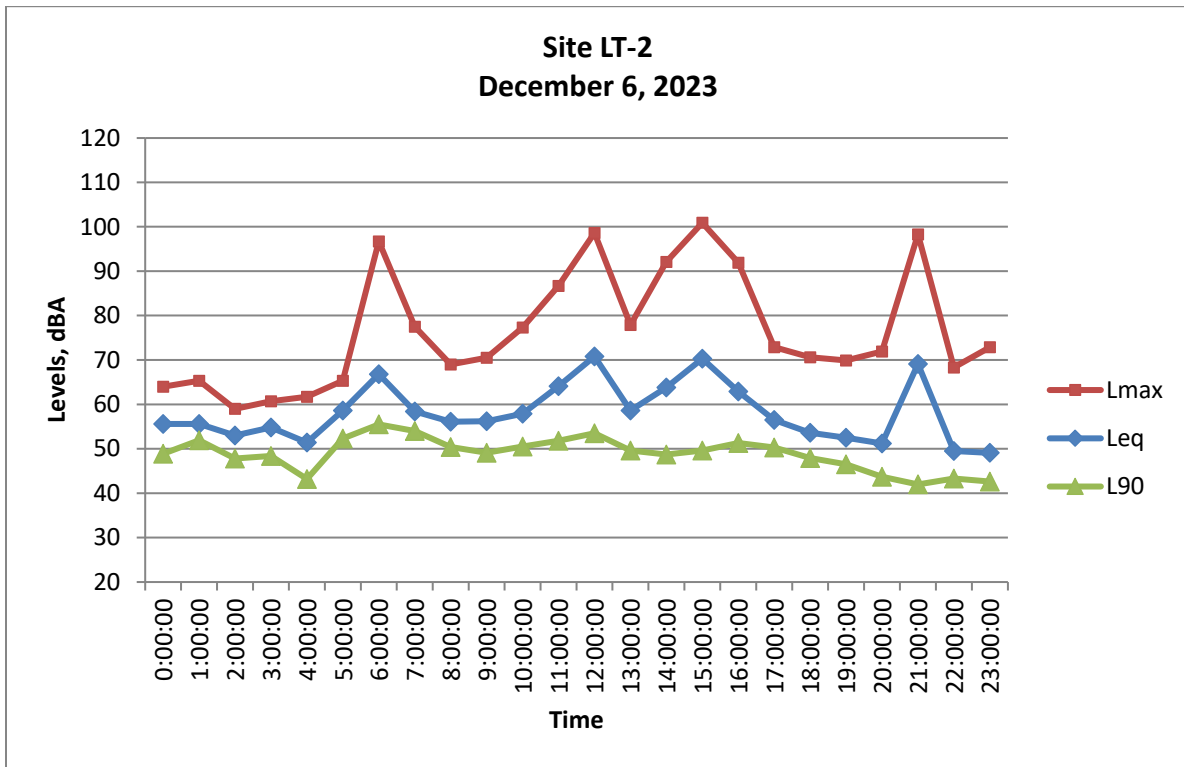
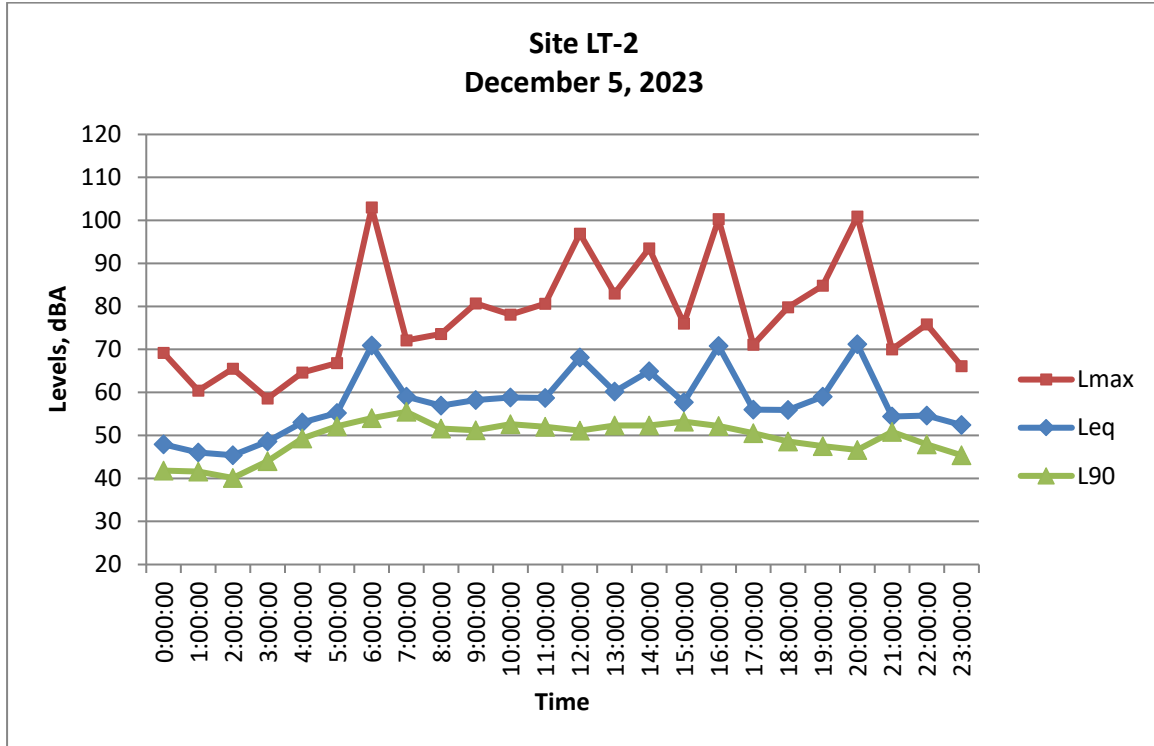


FIGURE 6: NOISE MONITORING SITE LT-2



APPENDIX A

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL:	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
CNEL:	Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.
DECIBEL, dB:	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
DNL/L_{dn}:	Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.
L_{eq}:	Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L _{eq} is typically computed over 1, 8 and 24-hour sample periods.
NOTE:	The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L _{eq} represents the average noise exposure for a shorter time period, typically one hour.
L_{max}:	The maximum noise level recorded during a noise event.
L_n:	The sound level exceeded "n" percent of the time during a sample interval (L ₉₀ , L ₅₀ , L ₁₀ , etc.). For example, L ₁₀ equals the level exceeded 10 percent of the time.

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS:

Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

NOISE LEVEL REDUCTION (NLR):

The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Noise level reduction@ combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL:

Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL:

The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC):

The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX C

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD) BALCONY POLICY



OFFICE OF COMMUNITY PLANNING
AND DEVELOPMENT

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-7000

Special Attention of:

Regional Directors
Field Office Directors
CPD Division Directors
ONAP Administrators
Regional and Field Environmental Officers
Responsible Entities
CPD, Housing, and PIH Staff
Public Housing Agencies
Tribes
Tribally Designated Housing Entities
Indian Housing Authorities
Department of Hawaiian Homelands
Program Environmental Clearance Officers
Multifamily Office Directors
Multifamily Regional Center Directors
Multifamily Satellite Office Directors

Notice: CPD-16-19

Issued: December 22, 2016

Expires: This Notice is effective until
amended, superseded, or rescinded.

**SUBJECT: Balcony Policy under 24 CFR 51, Subpart B as it Applies to Parts 50 and 58
Regarding Building Facades Exposed to Noise**

I. Purpose and Background

This Notice reconciles the approach to balconies within the Department's regulatory constraints in 24 CFR Part 51 Subpart B, Noise Abatement and Control, and clarifies compliance.

The noise regulation requires grantees and HUD program staff to consider noise when HUD assistance is proposed. HUD's noise regulation established minimum national standards applicable to HUD programs to protect citizens' health and properties' value from excessive noise in communities. "It is a HUD goal that the interior auditory environment shall not exceed a day-night average sound level of 45 decibels...Emphasis shall be given to noise sensitive interior spaces such as bedrooms" (§51.101(a)(9)). The exterior standard for acceptability is 65 decibels (dB) or below. Noise exposure between that acceptable threshold and 75 dB is normally unacceptable, and noise above 75 dB is unacceptable (§51.103(c)).

HUD assistance for new construction of noise sensitive uses is generally prohibited for projects with unacceptable noise exposure and is discouraged for projects with normally unacceptable noise exposure (§51.100(a)(4) and (§51.101(a)(3)). The regulation further states that "particular emphasis

shall be placed on the importance of compatible land use planning...” (§51.101(a)(1)(i)). “The standards shall also apply at other locations where it is determined that quiet outdoor space is required in an area ancillary to the principal use on the site” (§51.103(c)(1)).

II. Applicability

This Notice applies to HUD activities that are subject to the noise regulation. Those activities include activities subject to environmental reviews at the Categorically Excluded Subject To the related federal laws and authorities (24 CFR 50.20 and 24 CFR 58.35(a)), Environmental Assessment, and Environmental Impact Statement (24 CFR 50.42 and 24 CFR 58.37) levels of review in accordance with both Part 50 for HUD projects and Part 58 for grantees serving as Responsible Entities. Consult Program Environmental Clearance Officers (PECOs)¹ for information on which program activities do not require environmental review.

24 CFR Part 51, Subpart B further defines the activities that are subject to noise regulation requirements. Support for existing construction requires consideration of marketability (24 CFR 51.101(a)(4)). Activities short of new construction (such as modernization or rehabilitation) require actions ranging from encouragement of noise attenuation features to strongly encouraging conversion of a site to a land use that is compatible with high noise levels, depending on the extent of rehabilitation and the level of noise exposure (24 CFR 51.101(a)(5)). New construction requires actions ranging from requiring noise attenuation to denying HUD assistance, depending on the level of noise exposure (24 CFR 51.101(a)(3)).

III. Discussion

Balconies are platforms extending outward from a building façade. For purpose of this Notice, a balcony is a private outdoor space associated with individual dwelling units accessible solely from a single unit and located on an upper-level in a building. This Notice also applies to patios, the equivalent ground-level space, and similar spaces such as porches, decks, and terraces constructed integrally to a building. Such private spaces extend the interior living space, but are ancillary to indoor environments.

Balconies are amenities. Balconies are not required for the full functioning of dwelling units that have reliable, alternative spaces within the structure; therefore, they are ancillary to the principal land use—housing. Because their use is optional, the negative effects of noise exposure are not an important determinant of overall project viability.

A balcony’s usefulness and availability can be limited by weather and manmade environmental conditions such as temperature, precipitation, wind, odors, smoke, and air quality. Noise is such a condition and is a marketability factor. Vulnerability to such conditions can negate its use in extreme circumstances. The inherent sensitivity of such outdoor spaces makes their availability

¹ Contact information for PECO is available on the [HUD Environmental Review](#) website

unreliable. In this context, the construction costs associated with balconies may not support the Department's affordable housing goals.

In addition, balconies can pose a risk to long-term project viability if not properly designed or maintained. Sleep is the most noise-sensitive activity in a HUD-assisted project, and therefore, bedrooms are the most noise-sensitive interior spaces. Excessive interior noise levels (over 45 dB) can impair this most basic use of the dwelling unit. Even with proper mitigation built into a structure, poor or deferred maintenance can impair the effectiveness of some noise attenuation, and maintenance schedules can be vulnerable to budget shortfalls. Inexpensive or low-quality building components combined with deferred maintenance can lead to infiltration of noise into dwelling units. Based on these concerns, it has been an informal Departmental policy for several years to not allow bedrooms or studio apartments in noise-impacted areas that directly access balconies. Through consultation with the Office of Housing and industry representatives concerned about accommodating areas with high market demand for balconies, it has become clear that the risk may be better managed through periodic inspection of door and window seals as an explicit requirement in Operation and Maintenance plans with the provision for repair or replacement as needed.

If the fenestration is designed to be noise mitigation, it must be allowed to function in that role. The dwelling units must not rely on opening windows or doors for ventilation. Mechanical ventilation systems must be provided, and the design of those systems must be such that they do not transmit exterior noise to the interior of the units. Solutions that provide ventilation and quiet are the goal.

IV. Determinations

Balconies are not "locations where it is determined that quiet outdoor space is required in an area ancillary to the principal use on the site" (24 CFR 51.103(c)). Furthermore, balconies are not indicative of an "outdoor noise sensitive activity" for the purpose of eligibility for the discretionary waiver of the Environmental Impact Statement offered in 24 CFR 51.104(b)(2) since spaces inside the dwelling unit can accommodate activities that may occur on balconies.

For new construction projects in Unacceptable and Normally Unacceptable noise areas (in accordance with 24 CFR 51.101(a)(3)) and major or substantial rehabilitation that results in a change of land use, bedrooms and studio apartments may have direct access to balconies if:

1. The interior noise levels have been mitigated to not exceed a day-night average noise level of 45 decibels as documented by the Sound Transmission Classification of the dwelling unit's exterior walls factoring in fenestration.
2. Appropriate ventilation is provided by a mechanical ventilation system and not by opening doors or windows, and
3. An Operations and Maintenance plan is in place that requires periodically inspecting seals and repairing or replacing building components when their performance diminishes.

Bedrooms and studio apartments may not have direct access to balconies if there is no mechanical ventilation and there is no Operations and Maintenance plan requiring periodic inspection and repair or replacement of all window and door seals as needed.

This Notice does not limit the ability of HUD Approving Officials or Part 58 Certifying Officers to require additional mitigation measures not articulated in this Notice, or to deny approval of balconies based on noise or other concerns. In addition, Environmental Assessment or Environmental Impact Statement levels of environmental review must consider potential health effects stemming from issues related to noise sources, such as air quality (24 CFR 50.4(h) and 24 CFR 58.5(g)) and toxic hazard exposure near transportation (24 CFR 50.3(i) and 24 CFR 58.5(i)(2)).

Direct questions about this Notice to your [Regional Environmental Officer](#) or James Potter at 202.402.4610 or james.m.potter@hud.gov.

By: _____
Danielle Schopp, Departmental Environmental Clearance Officer

APPENDIX B
EXAMPLES OF SOUND LEVELS

