

ROSSMOOR WALNUT CREEK EVENT CENTER PICKLEBALL NOISE STUDY

AUGUST 24, 2022

PREPARED FOR:
ROSSMOOR WALNUT CREEK

PREPARED BY:
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EXECUTIVE SUMMARY

Acoustics Group, Inc., (AGI) was retained by Rossmoor Walnut Creek to evaluate the pickleball noise levels associated with adding six (6) pickleball courts at their facility located at 1021 Stanley Dollar Drive in Walnut Creek, CA. AGI has reviewed the City of Walnut Creek's Municipal Code Noise Standard, conducted ambient and pickleball noise level measurements, analyzed pickleball noise, assessed the impact of the pickleball courts, and evaluated noise control measures for reducing the noise from the proposed pickleball courts at the nearby residential homes.

The predicted noise level from the proposed pickleball activity with project design was 40.7, 46.5, 56.4, 44.8, and 44.7 dBA at receivers NM1 through NM5, respectively. At NM3 and NM4, the pickleball noise level would exceed ambient noise levels by greater than 3 dB throughout many of the operating hours. Although the noise level directly at NM5 does not exceed ambient levels by greater than 3 dB, the project design west barrier only provides a shielding effect for the residences directly west of the courts. Residences northwest and southwest of the courts do not experience any shielding and would experience noise levels as high as 50.8 dB. Pickleball would be considered an impact at those residences. Additionally, the impulsive character of the pickleball noise could be audible at receptors NM3, NM4 and NM5 and could be a source of annoyance to sensitive individuals, especially when the ambient background noise level is lower or when there are lulls in traffic noise.

Noise control is recommended to reduce the pickleball noise at the nearby noise-sensitive receptors. With the implementation of noise control options, pickleball noise would be reduced. However, the impulsive character of the noise could remain audible and may still be a source of annoyance to sensitive individuals.

This report has been organized into multiple sections for ease of reference. Section 1 introduces the Project and provides a general discussion on the Project Components. Section 2 discusses Noise Fundamentals. Section 3 presents the City of Walnut Creek Noise Standards. Section 4 discusses the Ambient Noise Survey, Section 5 discusses the Impact Assessment. Section 6 presents the Noise Control Analysis, including Recommendations. Section 7 discusses the Conclusion.

INTRODUCTION

Acoustics Group, Inc., (AGI) was retained by Rossmoor Walnut Creek to evaluate the noise levels associated with the pickleball court project at 1021 Stanley Dollar Drive in Walnut Creek, CA. The club is proposing adding six pickleball courts near the event center. The Rossmoor Walnut Creek Board of Directors and some of the community's residents are concerned about the increase in noise from the future pickleball operations. Figure 1 shows the location of the future pickleball courts with respect to the surrounding residential homes.



Figure 1. Location of Proposed Pickleball Courts

NOISE FUNDAMENTALS

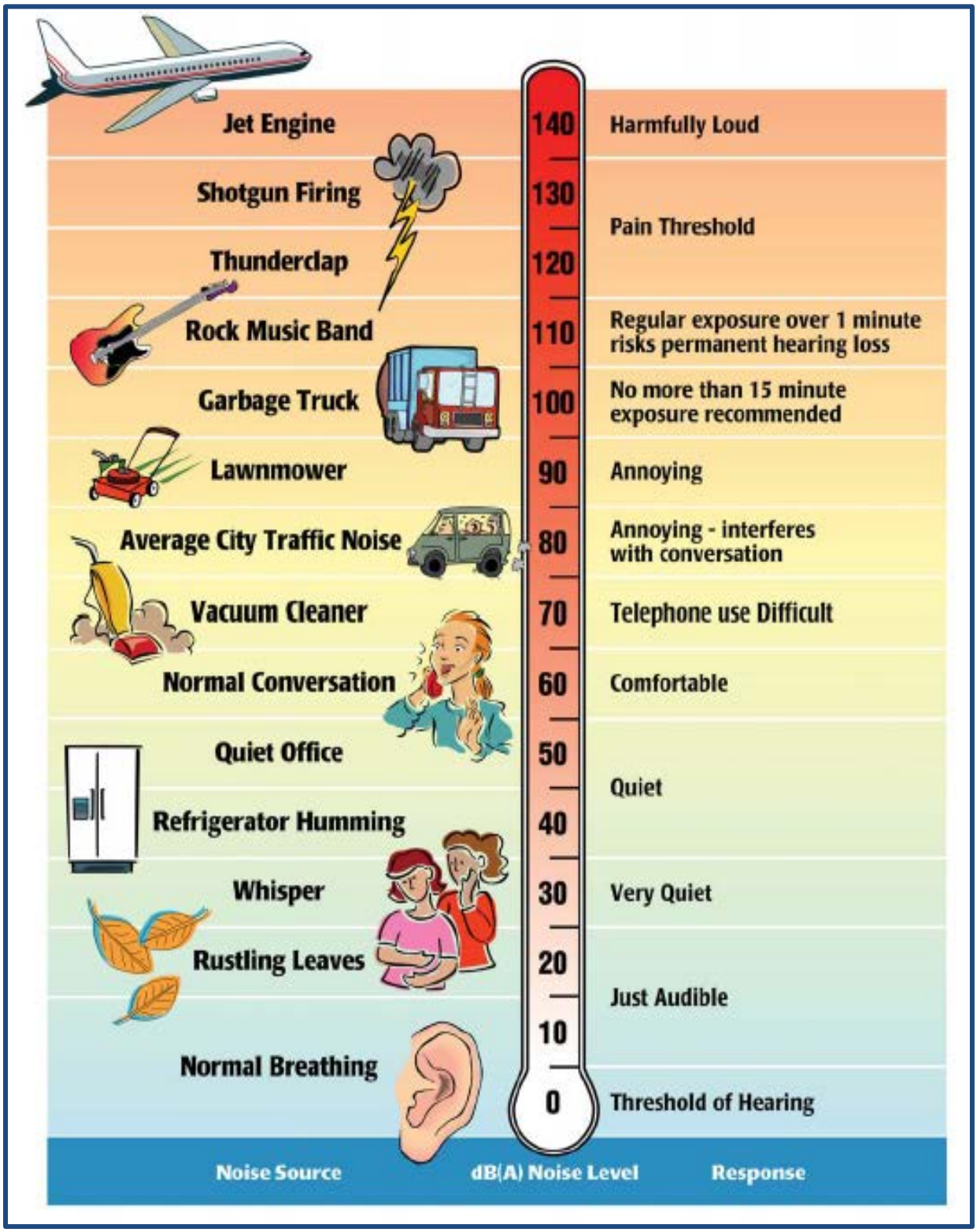
Noise is most often defined as unwanted sound. Although sound can be easily measured, the perceptibility is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.” Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB).

The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human, frequency-dependent response, the A-weighting filter system is used to adjust measured sound levels. The A-weighted sound level is expressed in "dBA" or "dB(A)". Figure 2 provides typical A-weighted sound levels measured for various sources, as well as people’s responses to these levels.

When sound is measured for distinct time intervals, the statistical distribution of the overall sound level can be obtained during that period. The energy-equivalent sound level (Leq) is the most common parameter associated with such measurements. The Leq metric is a single-number noise descriptor which represents the average sound level over a given period of time, where the actual sound level varies with time. Lmax, Lmin, and Lxx are also common noise descriptors. Lmax and Lmin are the maximum and minimum noise levels, respectively, and Lxx, known as a statistical sound level, is the time-varying noise level which would be exceeded xx percent of the time. For example, L50 is the average noise level that is exceeded 50% of the measurement duration or for 30-minutes in a 60-minute period.

NOISE STANDARDS

The City of Walnut Creek Municipal Code (Section 4-6.204) does not specifically adopt noise standards or limits to regulate intrusive noise. However, as per CEQA Guidelines, an appropriate noise level increase of greater than 3 dB above measured ambient noise levels would be considered the threshold of significance for determining noise impact. The acceptance of any noise guideline would be subject to the approval of the board; however, the greater than 3 dB increase criteria is suggested for this project to determine project noise impacts. Due to a logarithmic nature of decibels, pickleball noise levels should not exceed ambient noise levels which is reflective of a 3 dB increase from the project when added to the ambient background. Refer to the Appendix for the City of Walnut Creek Municipal Code.



Source: Melville Branch and R. Beland, 1970. EPA/ONAC 550/9-74-004, March 1974.

Figure 2. Typical A-weighted Noise Levels

AMBIENT NOISE SURVEY

AGI conducted an ambient noise survey on July 12 through 13, 2022, to document baseline ambient noise levels. Refer to Figure 3 for the locations of the noise monitors.



Figure 3. Long-Term Noise Monitoring Locations

Methodology

Five (5) Brüel & Kjær Model 2270 Acoustical Analyzers were used to conduct the noise measurements. The analyzers are precision Type 1 instruments that were calibrated to laboratory standards. The instrument systems were field calibrated before and after the measurements to ensure accuracy and were operated per manufacturer's recommendations.

Ambient Survey

At NM1, the measured ambient Leq ranged from 41.9 to 54.2 dBA. At NM2, the measured ambient Leq ranged from 35.5 to 58.8 dBA. At NM3, the measured ambient Leq ranged from 39.6 to 59.6 dBA. At NM4, the measured ambient Leq ranged from 32.7 to 61.9 dBA. At NM5, the measured ambient Leq ranged from 35.1 to 68.6 dBA. Noise sources from vehicular traffic (including backup beepers), aircraft, wildlife (birds), and typical community noises (including gardener and sprinklers) contributed to the noise measurement data. Table 1 summarizes the ambient noise measurement data. During the 8AM to 9AM and 1PM to 2PM hours, noise levels were higher due to typical gardening at locations NM3, NM4, and NM5.

Table 1. Existing Ambient Noise Levels

Receiver		Existing Ambient Noise Levels, dBA				Description
		Time	Leq	Lmin	Lmax	
NM1	Nearest Residence to the North or Northwest	7/12/22 2:00 PM – 7/13/22 2:00 PM	41.9 – 54.2	26.7	73.6	Vehicular Traffic, Birds Chirping, Gardeners, Sprinklers
NM2	Nearest Residence to the East	7/12/22 2:00 PM – 7/13/22 2:00 PM	35.5 – 58.8	32.3	77.0	Vehicular Traffic, Sprinklers,
NM3	Clubhouse	7/12/22 2:00 PM – 7/13/22 2:00 PM	39.6 - 59.6	38.7	76.7	Community Noise, Sprinklers, Gardeners
NM4	Nearest Residence to the South or Southwest	7/12/22 2:00 PM – 7/13/22 2:00 PM	32.7 – 61.9	28.8	87.5	Birds Chirping, Aircraft, Sprinklers, Backup Alarm, Gardeners
NM5	Nearest Residences to the West	7/12/22 2:00 PM – 7/13/22 2:00 PM	35.1 – 68.6	30.8	90.0	Vehicular traffic, aircraft, community noise, squirrels, gardeners

IMPACT ASSESSMENT

Methodology

The methodology used to analyze and predict operations noise involved the use of the CadnaA computer noise model. CadnaA can simulate the physical environment by factoring in x, y, and z geometrics of a particular site to simulate the buildings, obstacles, and typography. The model uses industry recognized algorithms (ISO 9613) to perform acoustical analyses. The noise generated by future pickleball courts was calculated by inputting acoustical sources at the project site. AGI's measurement data from the pickleball noise measurements at other locations at Rossmoor Walnut Creek were used for the modeling inputs and calibration. The CadnaA Noise Model was also used to evaluate noise control options.

Project Design Pickleball Noise

The predicted noise level from the proposed pickleball activity will be 40.7, 46.5, 56.4, 44.8, and 44.7 dBA at receivers NM1 through NM5, respectively. At NM3 and NM4, the pickleball noise level would exceed ambient noise levels by greater than 3 dB throughout many of the operating hours. Although the noise level directly at NM5 does not exceed ambient levels by greater than 3 dB, the project design west barrier only provides a shielding effect for the residences directly west of the courts. Residences northwest and southwest of the courts do not experience any shielding and would experience noise levels as high as 50.8 dB. Pickleball would be considered an impact at those residences. Additionally, the impulsive character of the pickleball noise could be audible at receptors NM3, NM4 and NM5 and could be a source of annoyance to sensitive individuals, especially when the ambient background noise level is lower or when there are lulls in traffic noise. Noise control was evaluated to reduce pickleball noise at the nearest residences. Table 4 summarizes the assessment of the future pickleball noise levels from Project Design with the ambient background and the recommended noise guideline. Tables 5 through 9 summarize the assessment of the pickleball noise levels from Project Design with the ambient background and the recommended noise guideline at NM1 through NM5, respectively. Figures 4 to 8 show a comparison of the pickleball noise levels from Project Design with the ambient noise level and recommended noise guideline.

Table 2. Summary of Impact Assessment of Pickleball Noise- Project Design

Receptor		Range in Ambient Noise Level during Pickleball Operating Hours, dBA[1]	Range in Recommended Noise Guideline, dBA[2]	Project Design Pickleball Noise Level, dBA	Assessment
NM1	Nearest Residence to the North or Northwest	46.8 - 52.2	49.8 - 55.2	40.7	Compliance
NM2	Nearest Residence to the East	52.0 - 58.8	55.0 - 61.8	46.5	Compliance
NM3	Clubhouse	44.4 - 55.6	47.4 - 58.6	56.4	Exceedance[3]
NM4	Nearest Residence to the South or Southwest	40.2 - 61.9	43.2 - 64.9	44.8	Exceedance
NM5	Nearest Residences to the West	43.5 - 68.6	46.5 - 71.6	50.8[4]	Exceedance[4]

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.
[3]Although there is an exceedance at NM3, the receptor is a clubhouse and does not need to be held to the same noise standards as residences.
[4]Although the noise level directly at NM5 does not exceed ambient levels by greater than 3 dB, the project design west barrier only provides a shielding effect for the residences directly west of the courts. Residences northwest and southwest of the courts do not experience any shielding and would experience noise levels as high as 50.8 dB. Pickleball would be considered an impact at those residences.

Table 3. Impact Assessment of Pickleball Noise from Project Design at NM1

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	40.7	52.2	52.5	55.2	Compliance
9:00:00 AM	40.7	51.4	51.8	54.4	Compliance
10:00:00 AM	40.7	50.8	51.2	53.8	Compliance
11:00:00 AM	40.7	51.8	52.1	54.8	Compliance
12:00:00 PM	40.7	51.4	51.7	54.4	Compliance
1:00:00 PM	40.7	48.8	49.4	51.8	Compliance
2:00:00 PM	40.7	49.3	49.9	52.3	Compliance
3:00:00 PM	40.7	49.2	49.8	52.2	Compliance
4:00:00 PM	40.7	48.4	49.1	51.4	Compliance
5:00:00 PM	40.7	49.0	49.6	52.0	Compliance
6:00:00 PM	40.7	47.1	48.0	50.1	Compliance
7:00:00 PM	40.7	46.8	47.8	49.8	Compliance
8:00:00 PM	40.7	48.5	49.2	51.5	Compliance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

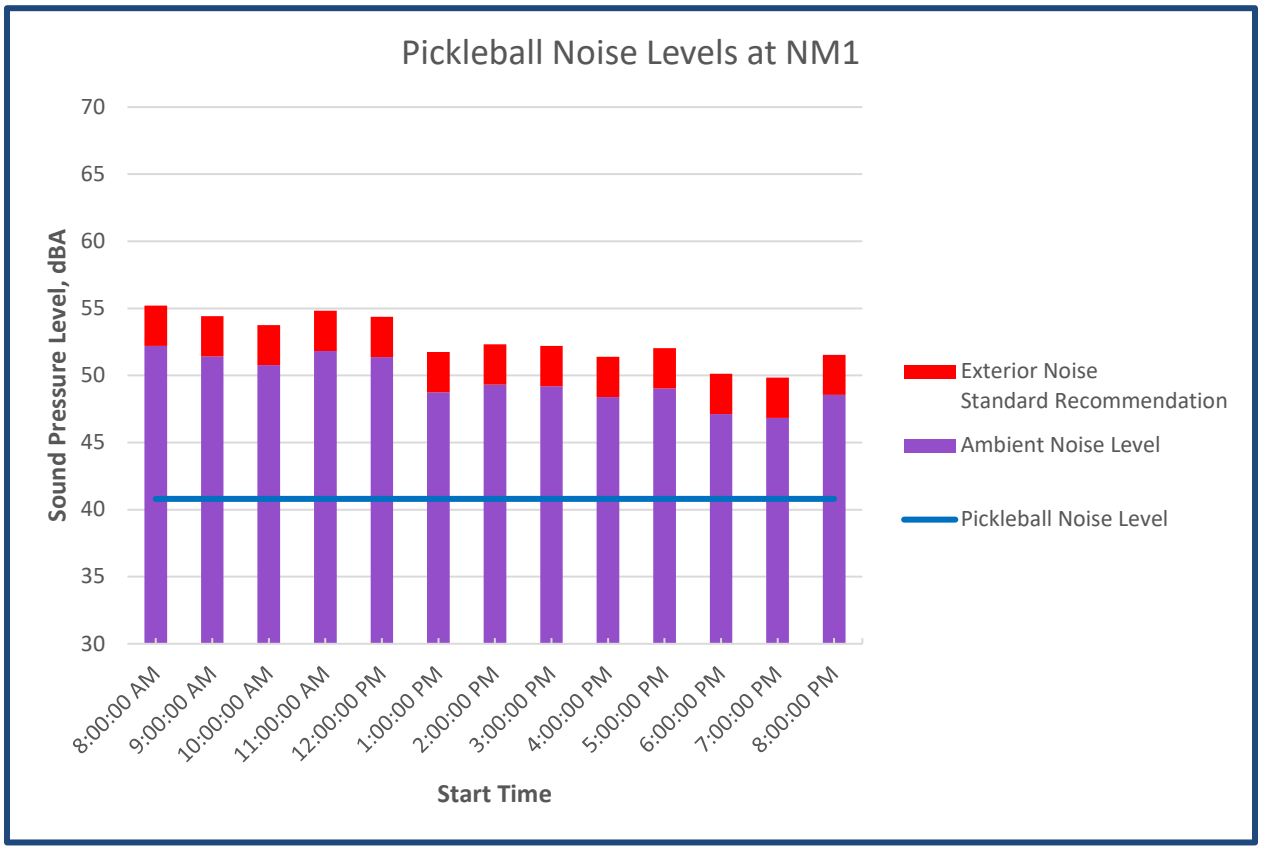


Figure 4. Comparison of Pickleball Noise from Project Design with Ambient Noise and Noise Guideline at NM1

Table 4. Impact Assessment of Pickleball Noise from Project Design at NM2

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	46.5	56.3	56.7	59.3	Compliance
9:00:00 AM	46.5	57.3	57.7	60.3	Compliance
10:00:00 AM	46.5	57.2	57.5	60.2	Compliance
11:00:00 AM	46.5	57.0	57.4	60.0	Compliance
12:00:00 PM	46.5	57.3	57.6	60.3	Compliance
1:00:00 PM	46.5	58.3	58.5	61.3	Compliance
2:00:00 PM	46.5	58.8	59.0	61.8	Compliance
3:00:00 PM	46.5	57.5	57.8	60.5	Compliance
4:00:00 PM	46.5	57.1	57.4	60.1	Compliance
5:00:00 PM	46.5	56.8	57.2	59.8	Compliance
6:00:00 PM	46.5	55.2	55.7	58.2	Compliance
7:00:00 PM	46.5	52.4	53.4	55.4	Compliance
8:00:00 PM	46.5	52.0	53.1	55.0	Compliance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

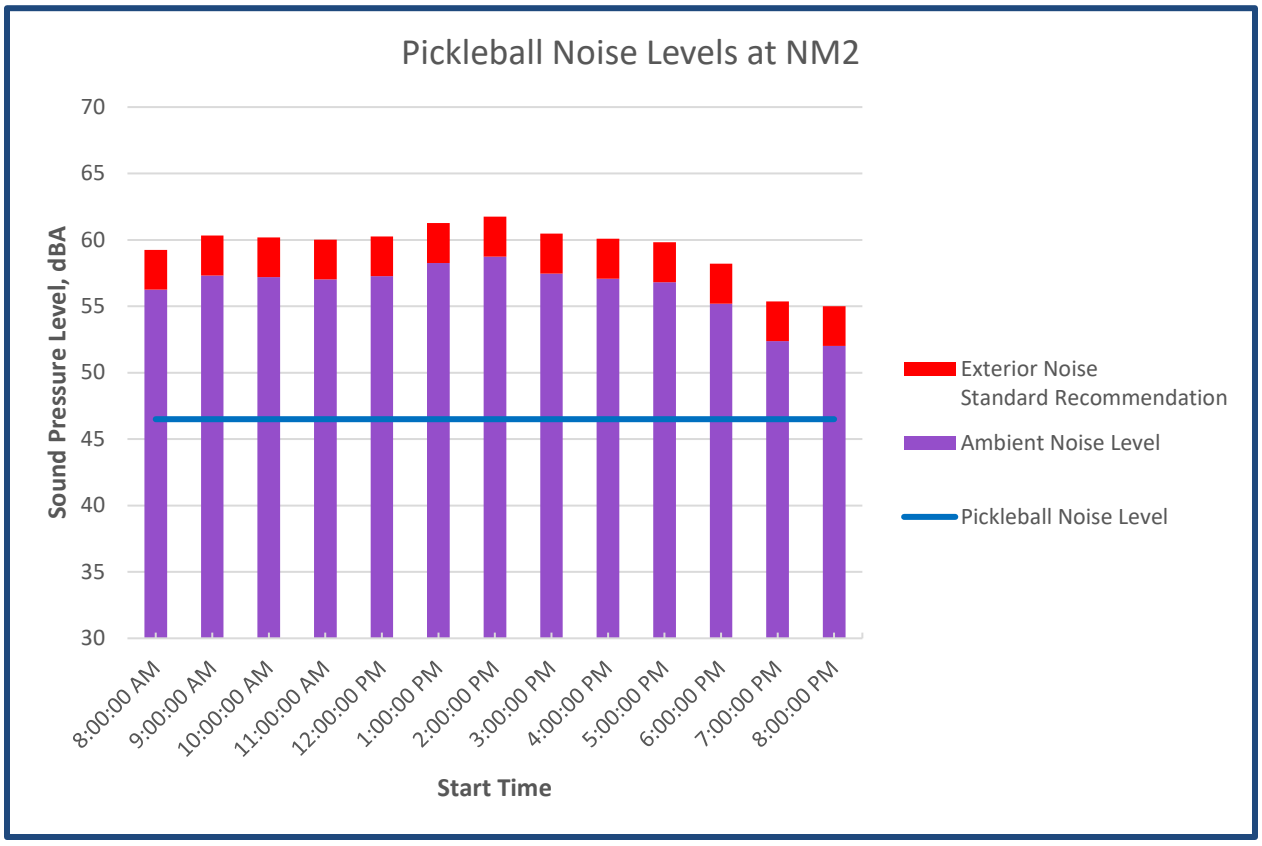


Figure 5. Comparison of Pickleball Noise from Project Design with Ambient Noise and Noise Guideline at NM2

Table 5. Impact Assessment of Pickleball Noise from Project Design at NM3

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	56.4	55.6	59.0	58.6	Exceedance
9:00:00 AM	56.4	45.7	56.8	48.7	Exceedance
10:00:00 AM	56.4	46.7	56.8	49.7	Exceedance
11:00:00 AM	56.4	46.6	56.8	49.6	Exceedance
12:00:00 PM	56.4	46.7	56.8	49.7	Exceedance
1:00:00 PM	56.4	49.7	57.2	52.7	Exceedance
2:00:00 PM	56.4	47.5	56.9	50.5	Exceedance
3:00:00 PM	56.4	46.9	56.9	49.9	Exceedance
4:00:00 PM	56.4	47.4	56.9	50.4	Exceedance
5:00:00 PM	56.4	44.4	56.7	47.4	Exceedance
6:00:00 PM	56.4	44.9	56.7	47.9	Exceedance
7:00:00 PM	56.4	44.5	56.7	47.5	Exceedance
8:00:00 PM	56.4	46.3	56.8	49.3	Exceedance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

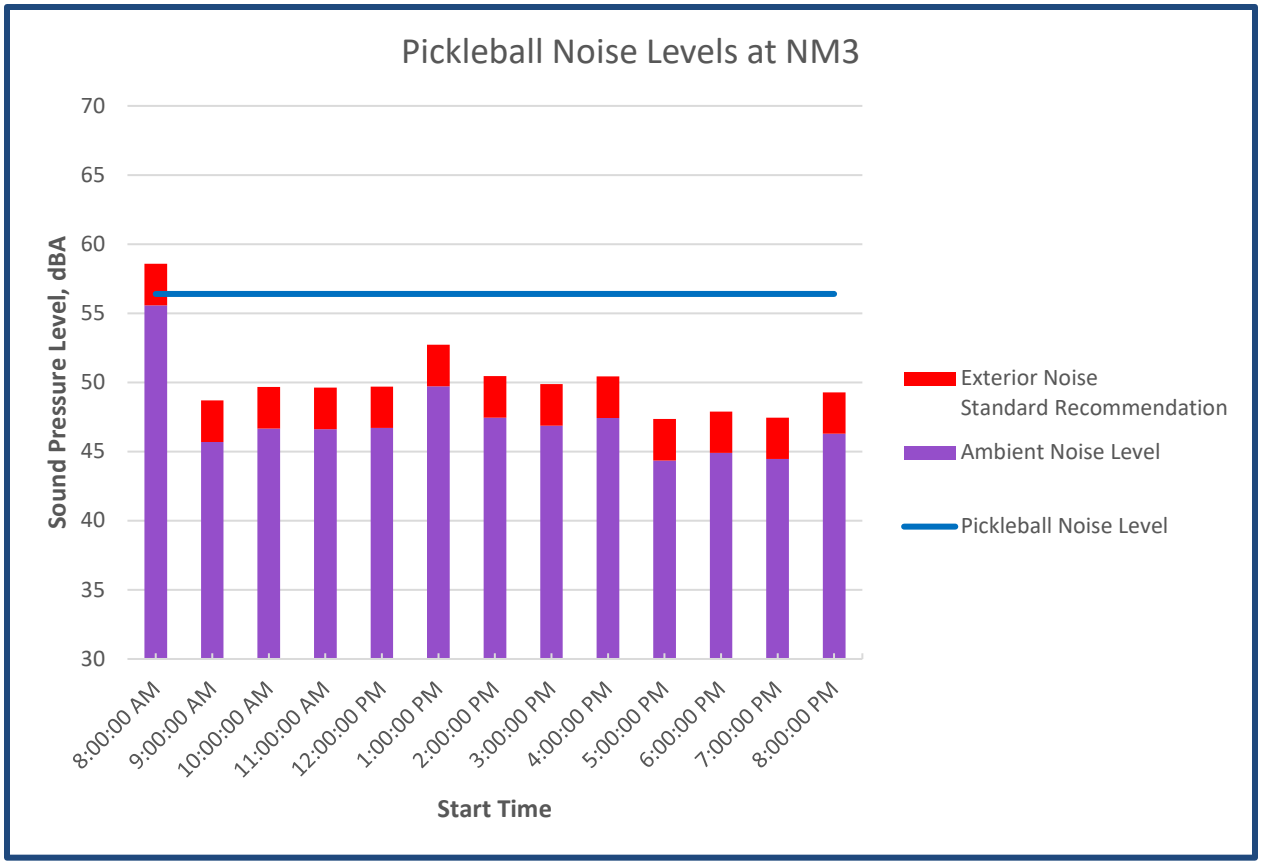


Figure 6. Comparison of Pickleball Noise from Project Design with Ambient Noise and Noise Guideline at NM3

Table 6. Impact Assessment of Pickleball Noise from Project Design at NM4

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	44.8	61.9	62.0	64.9	Compliance
9:00:00 AM	44.8	52.1	52.8	55.1	Compliance
10:00:00 AM	44.8	46.1	48.5	49.1	Compliance
11:00:00 AM	44.8	46.8	48.9	49.8	Compliance
12:00:00 PM	44.8	49.2	50.5	52.2	Compliance
1:00:00 PM	44.8	60.4	60.5	63.4	Compliance
2:00:00 PM	44.8	49.1	50.5	52.1	Compliance
3:00:00 PM	44.8	44.3	47.6	47.3	Exceedance
4:00:00 PM	44.8	44.0	47.4	47.0	Exceedance
5:00:00 PM	44.8	40.2	46.1	43.2	Exceedance
6:00:00 PM	44.8	40.6	46.2	43.6	Exceedance
7:00:00 PM	44.8	42.2	46.7	45.2	Exceedance
8:00:00 PM	44.8	42.2	46.7	45.2	Exceedance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

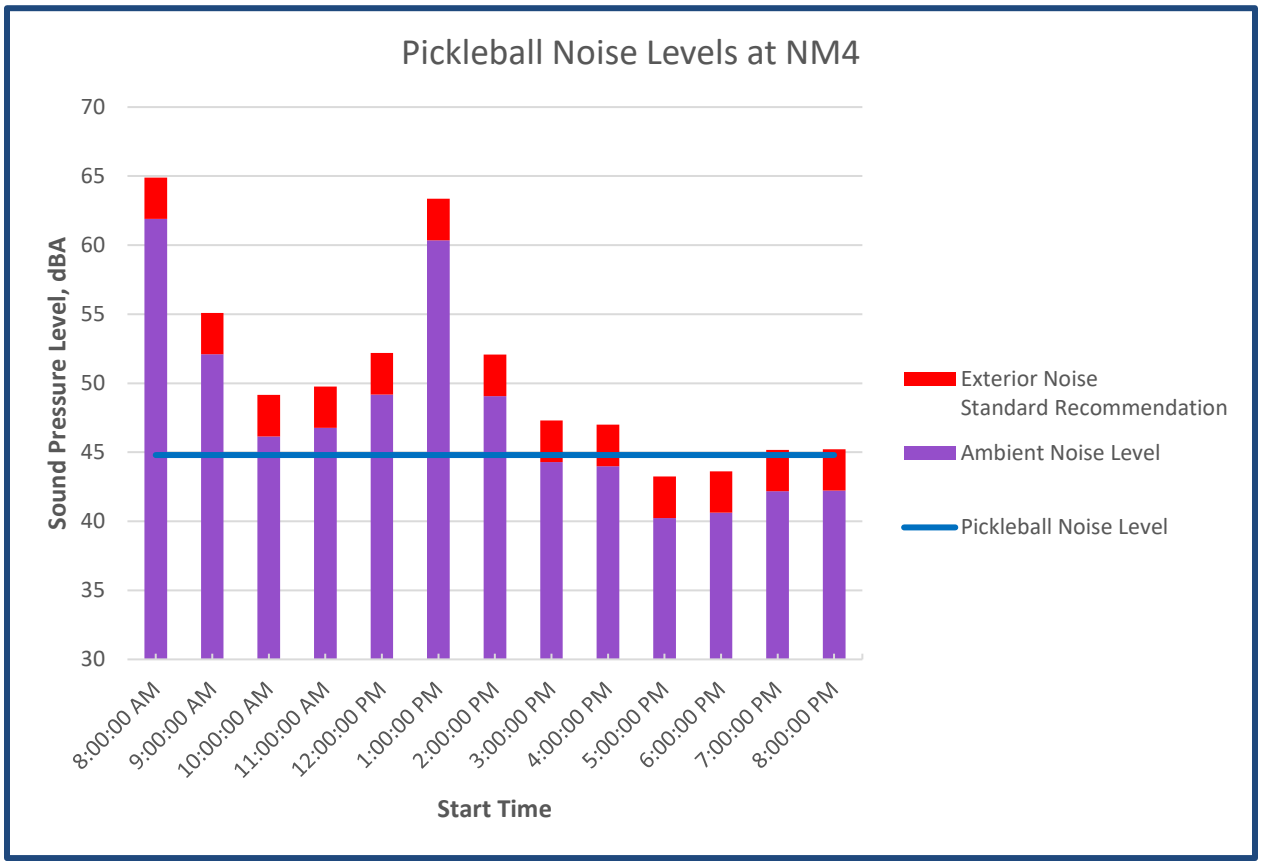


Figure 7. Comparison of Pickleball Noise from Project Design with Ambient Noise and Noise Guideline at NM4

Table 7. Impact Assessment of Pickleball Noise from Project Design at NM5

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	50.8[3]	68.6	68.7	71.6	Compliance
9:00:00 AM	50.8[3]	47.2	52.4	50.2	Exceedance
10:00:00 AM	50.8[3]	46.8	52.2	49.8	Exceedance
11:00:00 AM	50.8[3]	47.8	52.6	50.8	Exceedance
12:00:00 PM	50.8[3]	50.0	53.5	53.0	Exceedance
1:00:00 PM	50.8[3]	58.2	58.9	61.2	Compliance
2:00:00 PM	50.8[3]	46.9	52.3	49.9	Exceedance
3:00:00 PM	50.8[3]	47.0	52.3	50.0	Exceedance
4:00:00 PM	50.8[3]	47.3	52.4	50.3	Exceedance
5:00:00 PM	50.8[3]	46.2	52.1	49.2	Exceedance
6:00:00 PM	50.8[3]	44.8	51.8	47.8	Exceedance
7:00:00 PM	50.8[3]	43.5	51.5	46.5	Exceedance
8:00:00 PM	50.8[3]	44.5	51.7	47.5	Exceedance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.
[3]Residences northwest and southwest of the courts do not experience any shielding and would experience noise levels as high as 50.8 dB. Pickleball would be considered an impact at those residences.

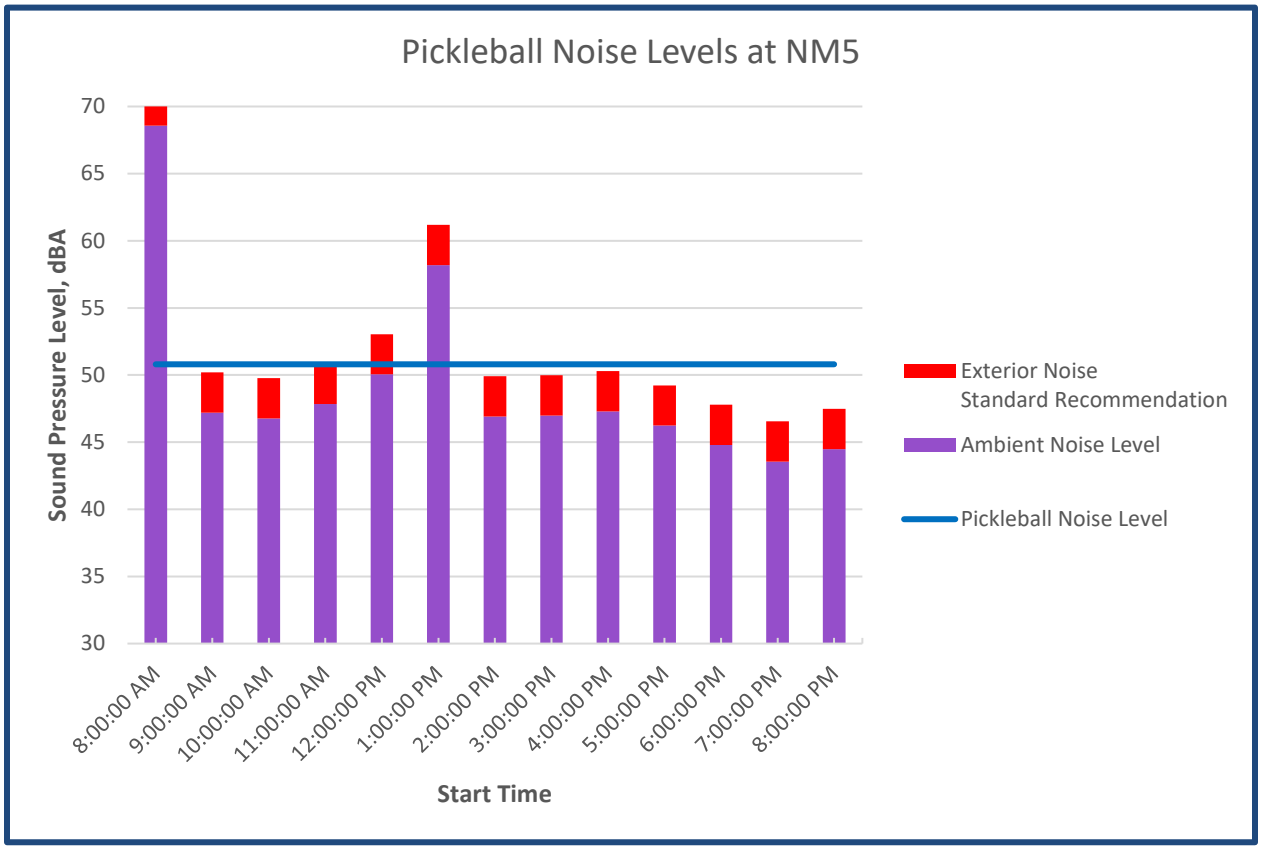


Figure 8. Comparison of Pickleball Noise from Project Design with Ambient Noise and Noise Guideline at NM5

NOISE CONTROL ANALYSIS

The methodology used to analyze and predict operations noise involved the use of the CadnaA computer noise model. CadnaA can simulate the physical environment by factoring in x, y, and z geometrics of a particular site to simulate the buildings, obstacles, and typography. The model uses industry recognized algorithms (ISO 9613) to perform acoustical analyses. The noise generated by future pickleball courts was calculated by inputting acoustical sources at the project site. AGI's measurement data from pickleball noise measurements were used for the modeling inputs and calibration. The CadnaA Noise Model was also used to evaluate noise control options. The following measures were evaluated to reduce pickleball noise at the nearest homes from the Pickleball Courts:

Additional Noise Control

In addition to the above solar panels and acoustical blanket wall spanning the entire height and length of the west side of the pickleball courts, a 18-ft foot high continuous solid noise barrier on south side and a 10-ft high continuous solid noise barrier on the north side of the pickleball courts as per Figure 9 was evaluated. Materials such as concrete block, plexiglass, or acoustical blanket (e.g., Acoustical Solutions Noise S.T.O.P Soundproof Blanket STC 33) should be used to provide the sound transmission needed. As summarized in Table 10, pickleball noise levels with this configuration will be reduced to 38.6, 46.5, 50.2, 37.1, and 42.9 dBA at NM1 through NM5. With the implementation of the additional noise control, pickleball noise would be reduced by approximately 2 to 7 dB, depending on location, which would be a noticeable improvement in noise reduction. The impulsive character of the pickleball noise could remain audible and may still be a source of annoyance to sensitive individuals, especially when the ambient background noise level is lower or when there are lulls in traffic noise. Table 8 summarizes the pickleball noise with the noise control recommendations. Tables 9 through 13 summarize the assessment of the pickleball noise levels from noise control recommendations with the ambient background and the recommended noise guideline at NM1 through NM5, respectively. Figures 10 to 14 show a comparison of the pickleball noise levels with full noise control recommendations with the ambient noise level and recommended noise guideline.

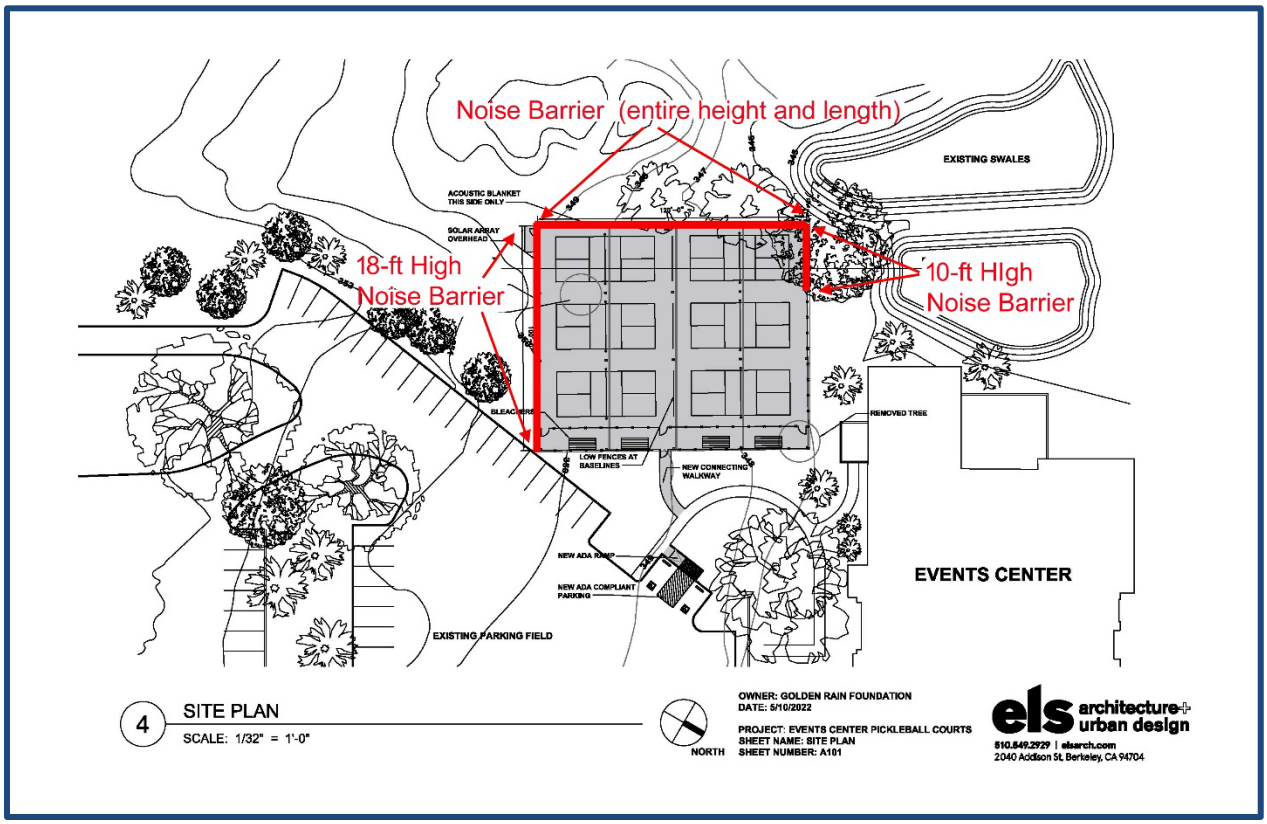


Figure 9. Location of Noise Barriers

Table 8. Summary of Noise Control for Future Pickleball - Project Design

Receptor		Range in Ambient Noise Level during Pickleball Operating Hours, dBA	Range in Recommended Noise Guideline, dBA	Future Pickleball Noise Level, dBA	
				Project Design	Project Design + additional North and South Barrier
NM1	Nearest Residence to the North or Northwest	46.8 - 52.2	49.8 - 55.2	40.7	38.6
NM2	Nearest Residence to the East	52.0 - 58.8	55.0 - 61.8	46.5	46.5
NM3	Clubhouse	44.4 - 55.6	47.4 - 58.6	56.4	50.2
NM4	Nearest Residence to the South or Southwest	40.2 - 61.9	43.2 - 64.9	44.8	37.1
NM5	Nearest Residences to the West	43.5 - 68.6	46.5 - 71.6	50.8	42.9

Table 9. Impact Assessment of Pickleball Noise from Noise Control Recommendations at NM1

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	38.6	52.2	52.4	55.2	Compliance
9:00:00 AM	38.6	51.4	51.6	54.4	Compliance
10:00:00 AM	38.6	50.8	51.0	53.8	Compliance
11:00:00 AM	38.6	51.8	52.0	54.8	Compliance
12:00:00 PM	38.6	51.4	51.6	54.4	Compliance
1:00:00 PM	38.6	48.8	49.2	51.8	Compliance
2:00:00 PM	38.6	49.3	49.7	52.3	Compliance
3:00:00 PM	38.6	49.2	49.6	52.2	Compliance
4:00:00 PM	38.6	48.4	48.8	51.4	Compliance
5:00:00 PM	38.6	49.0	49.4	52.0	Compliance
6:00:00 PM	38.6	47.1	47.7	50.1	Compliance
7:00:00 PM	38.6	46.8	47.4	49.8	Compliance
8:00:00 PM	38.6	48.5	49.0	51.5	Compliance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

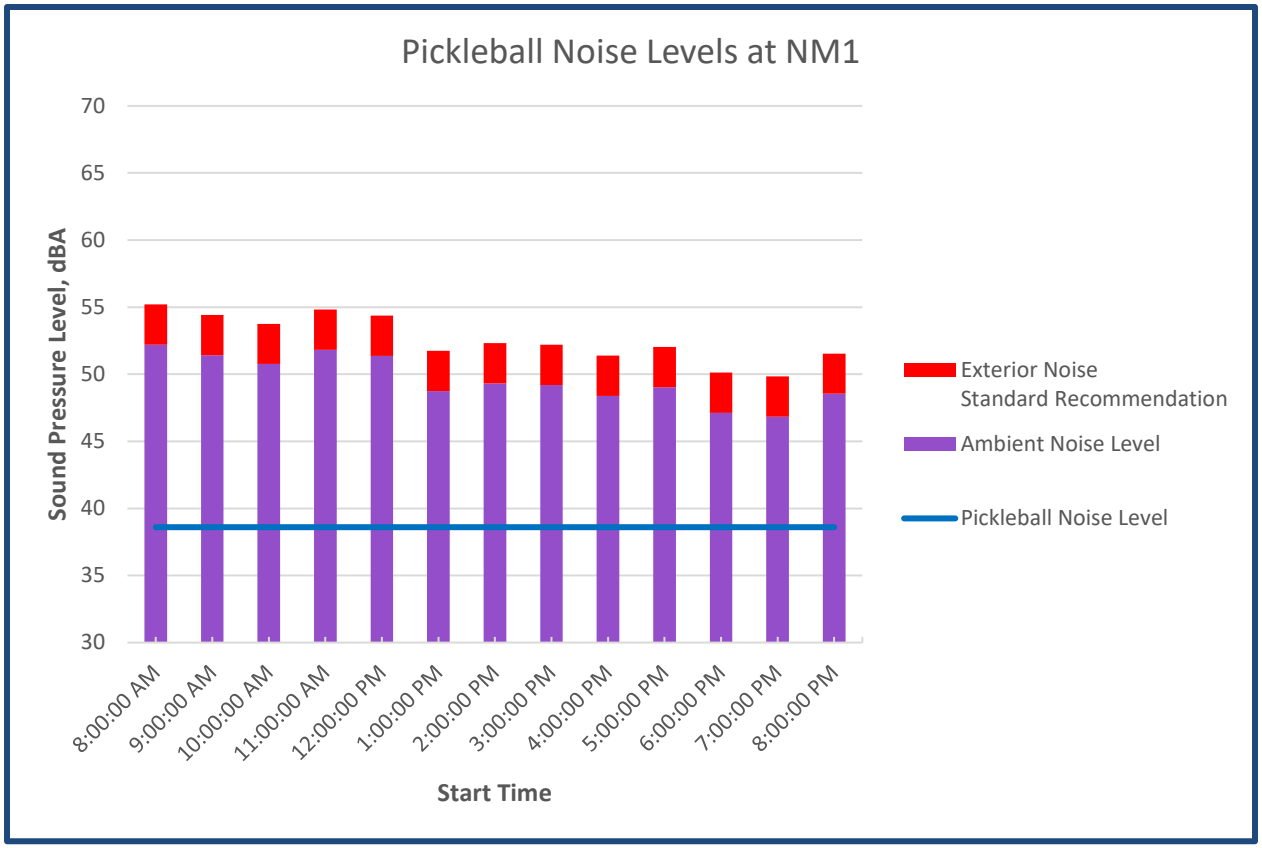


Figure 10. Comparison of Pickleball Noise with Noise Control Recommendations with Ambient Noise and Noise Guideline at NM1

Table 10. Impact Assessment of Pickleball Noise from Noise Control Recommendations at NM2

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	46.5	56.3	56.7	59.3	Compliance
9:00:00 AM	46.5	57.3	57.7	60.3	Compliance
10:00:00 AM	46.5	57.2	57.5	60.2	Compliance
11:00:00 AM	46.5	57.0	57.4	60.0	Compliance
12:00:00 PM	46.5	57.3	57.6	60.3	Compliance
1:00:00 PM	46.5	58.3	58.5	61.3	Compliance
2:00:00 PM	46.5	58.8	59.0	61.8	Compliance
3:00:00 PM	46.5	57.5	57.8	60.5	Compliance
4:00:00 PM	46.5	57.1	57.4	60.1	Compliance
5:00:00 PM	46.5	56.8	57.2	59.8	Compliance
6:00:00 PM	46.5	55.2	55.7	58.2	Compliance
7:00:00 PM	46.5	52.4	53.4	55.4	Compliance
8:00:00 PM	46.5	52.0	53.1	55.0	Compliance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

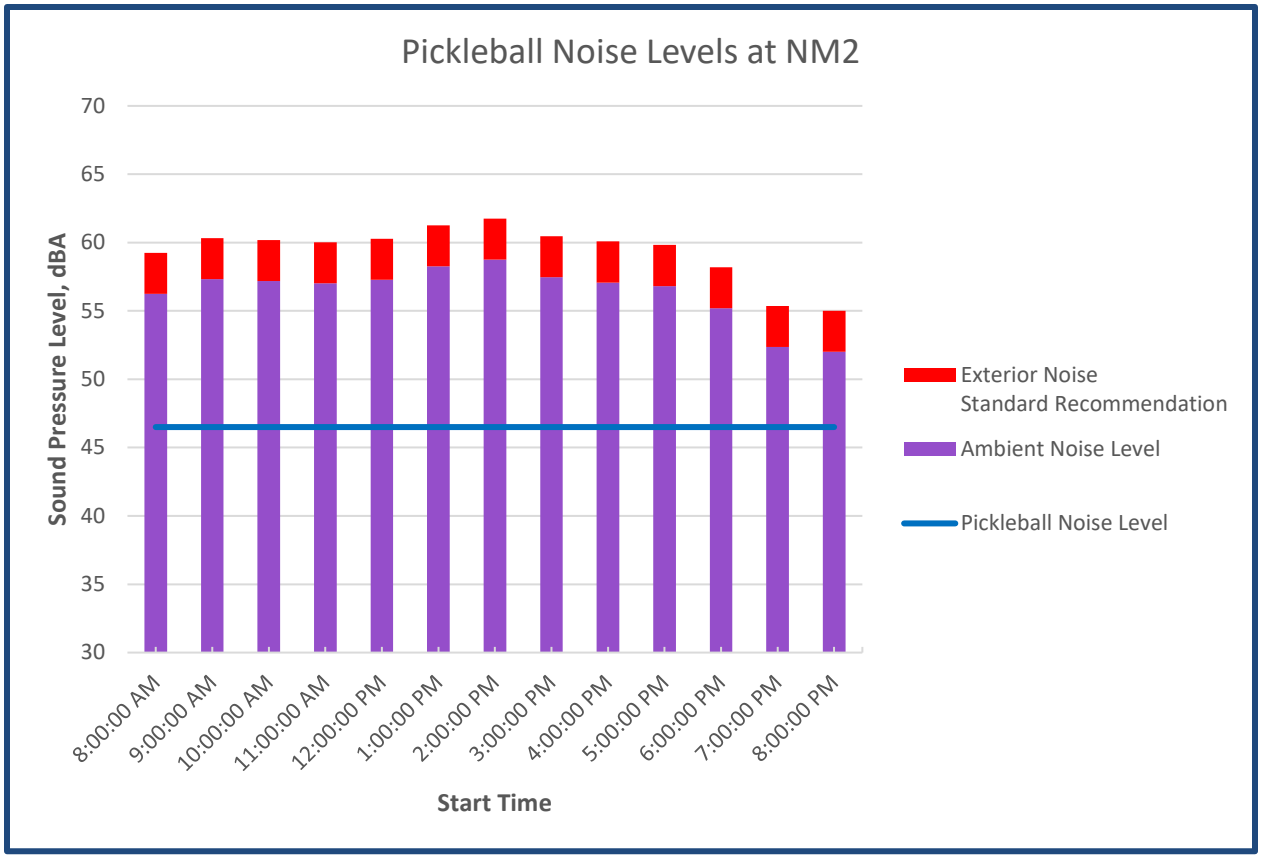


Figure 11. Comparison of Pickleball Noise from Noise Control Recommendations with Ambient Noise and Noise Guideline at NM2

Table 11. Impact Assessment of Pickleball Noise from Noise Control Recommendations at NM3

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	50.2	55.6	56.7	58.6	Compliance
9:00:00 AM	50.2	45.7	51.5	48.7	Exceedance
10:00:00 AM	50.2	46.7	51.8	49.7	Exceedance
11:00:00 AM	50.2	46.6	51.8	49.6	Exceedance
12:00:00 PM	50.2	46.7	51.8	49.7	Exceedance
1:00:00 PM	50.2	49.7	53.0	52.7	Exceedance
2:00:00 PM	50.2	47.5	52.0	50.5	Exceedance
3:00:00 PM	50.2	46.9	51.9	49.9	Exceedance
4:00:00 PM	50.2	47.4	52.0	50.4	Exceedance
5:00:00 PM	50.2	44.4	51.2	47.4	Exceedance
6:00:00 PM	50.2	44.9	51.3	47.9	Exceedance
7:00:00 PM	50.2	44.5	51.2	47.5	Exceedance
8:00:00 PM	50.2	46.3	51.7	49.3	Exceedance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

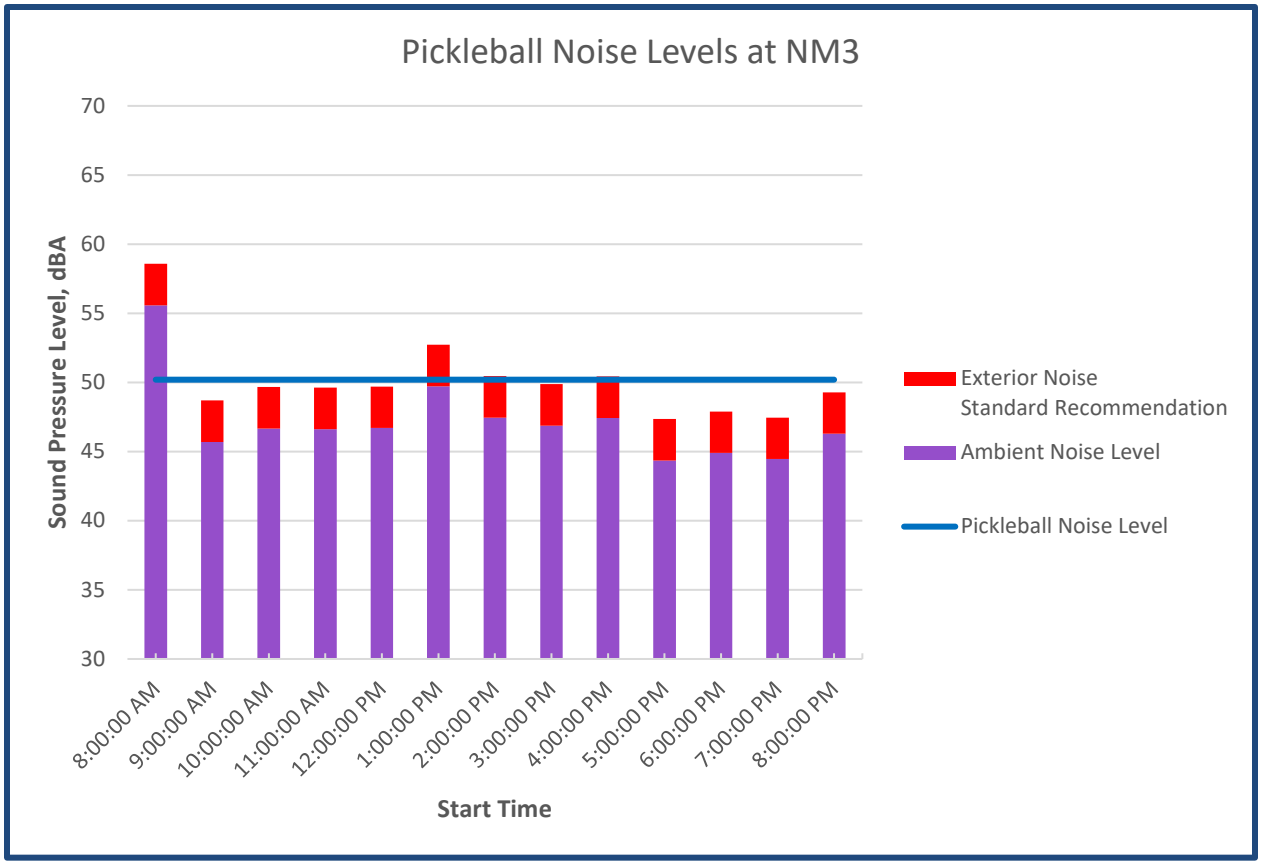


Figure 12. Comparison of Pickleball Noise from Noise Control Recommendations with Ambient Noise and Noise Guideline at NM3

Table 12. Impact Assessment of Pickleball Noise from Noise Control Recommendations at NM4

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	37.1	61.9	61.9	64.9	Compliance
9:00:00 AM	37.1	52.1	52.2	55.1	Compliance
10:00:00 AM	37.1	46.1	46.7	49.1	Compliance
11:00:00 AM	37.1	46.8	47.2	49.8	Compliance
12:00:00 PM	37.1	49.2	49.4	52.2	Compliance
1:00:00 PM	37.1	60.4	60.4	63.4	Compliance
2:00:00 PM	37.1	49.1	49.3	52.1	Compliance
3:00:00 PM	37.1	44.3	45.1	47.3	Compliance
4:00:00 PM	37.1	44.0	44.8	47.0	Compliance
5:00:00 PM	37.1	40.2	42.0	43.2	Compliance
6:00:00 PM	37.1	40.6	42.2	43.6	Compliance
7:00:00 PM	37.1	42.2	43.4	45.2	Compliance
8:00:00 PM	37.1	42.2	43.4	45.2	Compliance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

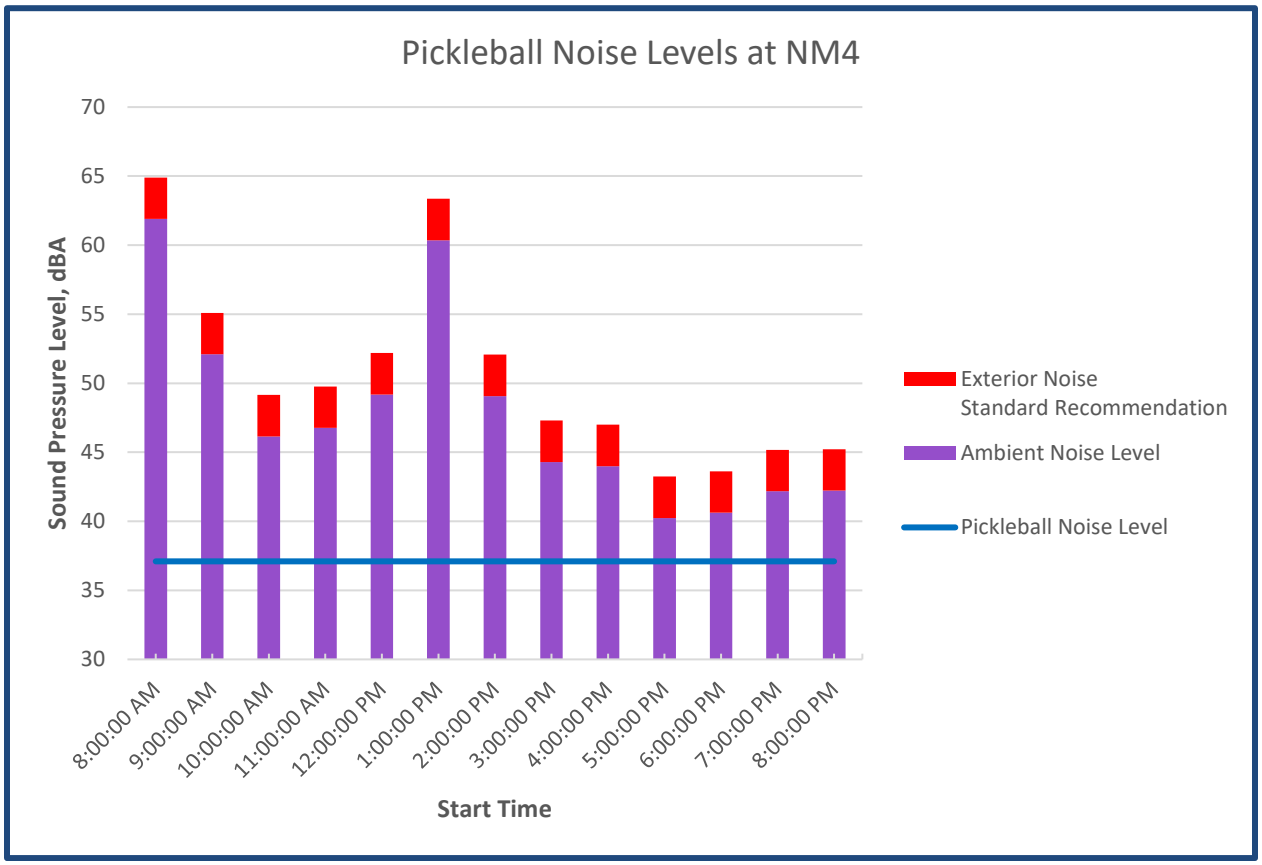


Figure 13. Comparison of Pickleball Noise from Noise Control Recommendations with Ambient Noise and Noise Guideline at NM4

Table 13. Impact Assessment of Pickleball Noise from Noise Control Recommendations at NM5

Hour Start Time	Pickleball Noise Level, Leq, dBA	Ambient Noise, Leq, dBA[1]	Pickleball + Ambient Noise, dBA	Recommended Noise Guideline, Leq, dBA[2]	Assessment
8:00:00 AM	42.9	68.6	68.6	71.6	Compliance
9:00:00 AM	42.9	47.2	48.6	50.2	Compliance
10:00:00 AM	42.9	46.8	48.3	49.8	Compliance
11:00:00 AM	42.9	47.8	49.0	50.8	Compliance
12:00:00 PM	42.9	50.0	50.8	53.0	Compliance
1:00:00 PM	42.9	58.2	58.3	61.2	Compliance
2:00:00 PM	42.9	46.9	48.4	49.9	Compliance
3:00:00 PM	42.9	47.0	48.4	50.0	Compliance
4:00:00 PM	42.9	47.3	48.6	50.3	Compliance
5:00:00 PM	42.9	46.2	47.9	49.2	Compliance
6:00:00 PM	42.9	44.8	47.0	47.8	Compliance
7:00:00 PM	42.9	43.5	46.2	46.5	Compliance
8:00:00 PM	42.9	44.5	46.8	47.5	Compliance

Note: [1]Pickleball will operate during the daytime hours of 8AM to Dusk. Dusk was assumed to be as late as 9PM
[2]The Recommended Noise Guideline is a greater than 3 dB increase above the ambient noise level.

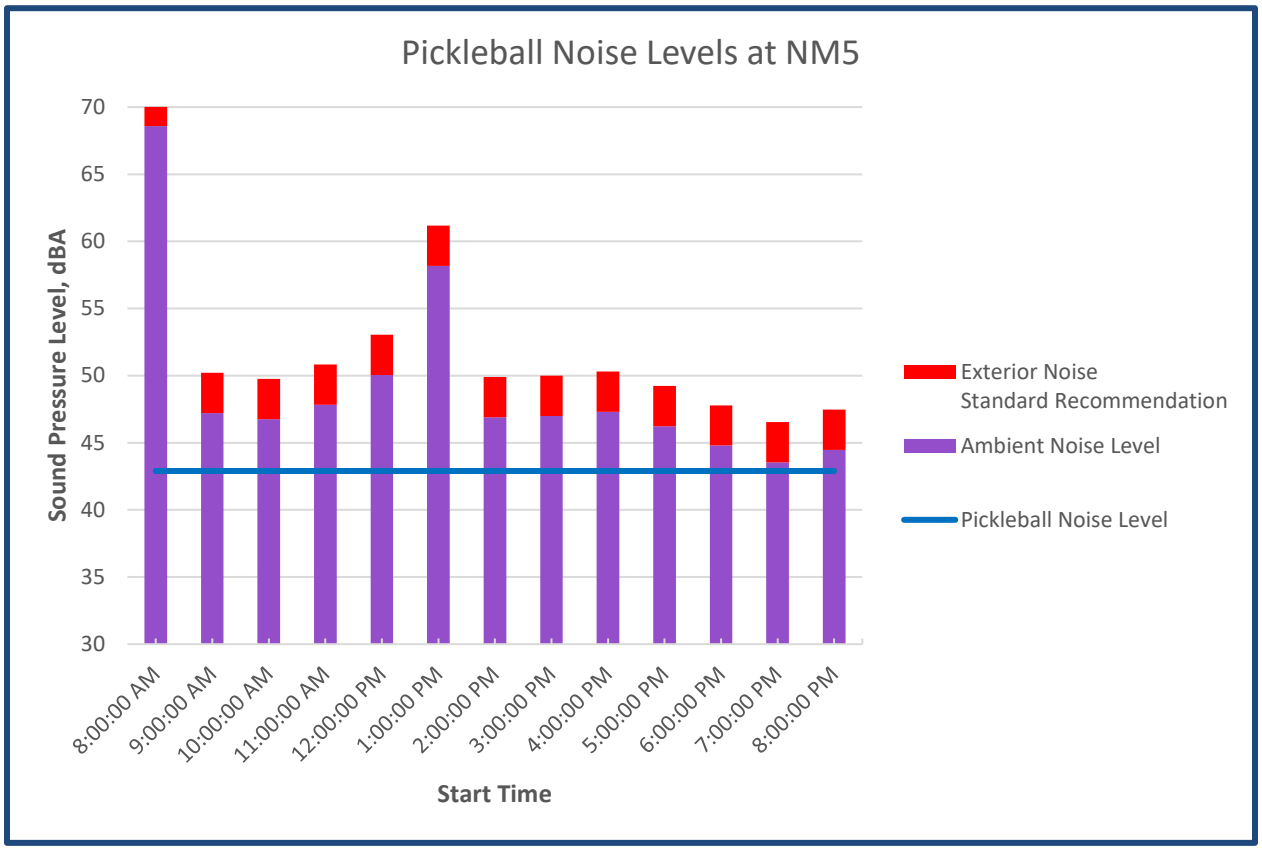


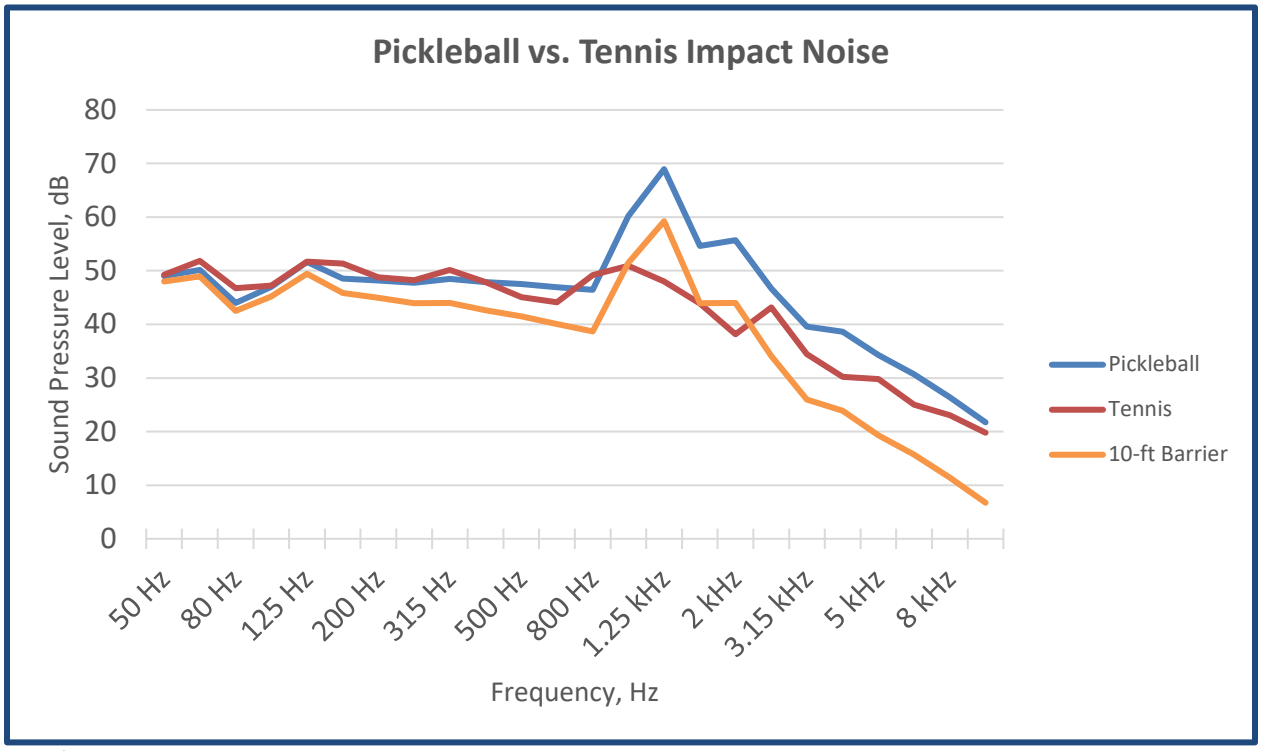
Figure 14. Comparison of Pickleball Noise from Noise Control Recommendations with Ambient Noise and Noise Guideline at NM5

General Noise Control Options

1. Require the use of newer low noise padded neoprene paddles at all times. Each player's paddle should be inspected by club personnel prior to access to the courts. Players using old high noise paddles would not be allowed court time. The Club could offer a loaner low noise paddle for players with non-conforming equipment.
2. The Club should maintain a list of acceptable quieter pickleball paddles and balls to minimize noise disturbances. The list shall be updated as necessary to reflect the current technology for paddles and balls.
3. Encourage the use of low noise pickleball equipment whenever possible.
4. Consider quiet days or hours.
5. Consider the use of quiet foam balls during the nighttime hours.

FREQUENCY CONTENT OF TENNIS AND PICKLEBALL NOISE

The sound produced by the impact between a pickleball and paddle is characterized by a sudden onset and brief duration. The spectral content of the paddle impact is narrowband with a center frequency typically between 800 and 2,000 Hertz. Due to the frequency content of a pickleball strike, and the quantity of impact events, the impulsive character of the noise could remain audible and may still be a source of annoyance to sensitive individuals. Figure 15 displays the frequency plot of tennis, pickleball noise (no noise control), and pickleball noise with a 10-ft barrier at approximatley 50-ft from the court. The impact sound of pickleball and its frequency characteristics can be reduced with the use of padded paddles and to a greater extent foam balls.



Note: [1]Taken from noise measurement location at approximately 50-ft from court.

Figure 15. Frequency Content of Pickleball vs Tennis Strike

CONCLUSION

Acoustics Group, Inc., (AGI) was retained by Rossmoor Walnut Creek to evaluate the pickleball noise levels associated with adding six (6) pickleball courts at their facility located at 1021 Stanley Dollar Drive in Walnut Creek, CA. AGI has reviewed the City of Walnut Creek's Municipal Code Noise Standard, conducted ambient and pickleball noise level measurements, analyzed pickleball noise, assessed the impact of the pickleball courts, and evaluated noise control measures for reducing the noise from the proposed pickleball courts at the nearby residential homes.

The predicted noise level from the proposed pickleball activity with project design was 40.7, 46.5, 56.4, 44.8, and 44.7 dBA at receivers NM1 through NM5, respectively. At NM3 and NM4, the pickleball noise level would exceed ambient noise levels by greater than 3 dB throughout many of the operating hours. Although the noise level directly at NM5 does not exceed ambient levels by greater than 3 dB, the project design west barrier only provides a shielding effect for the residences directly west of the courts. Residences northwest and southwest of the courts do not experience any shielding and would experience noise levels as high as 50.8 dB. Pickleball would be considered an impact at those residences. Additionally, the impulsive character of the pickleball noise could be audible at receptors NM3, NM4 and NM5 and could be a source of annoyance to sensitive individuals, especially when the ambient background noise level is lower or when there are lulls in traffic noise.

Noise control is recommended to reduce the pickleball noise at the nearby noise-sensitive receptors. With the implementation of noise control options, pickleball noise would be reduced. However, the impulsive character of the noise could remain audible and may still be a source of annoyance to sensitive individuals.

APPENDIX

FIELD DATA SHEETS

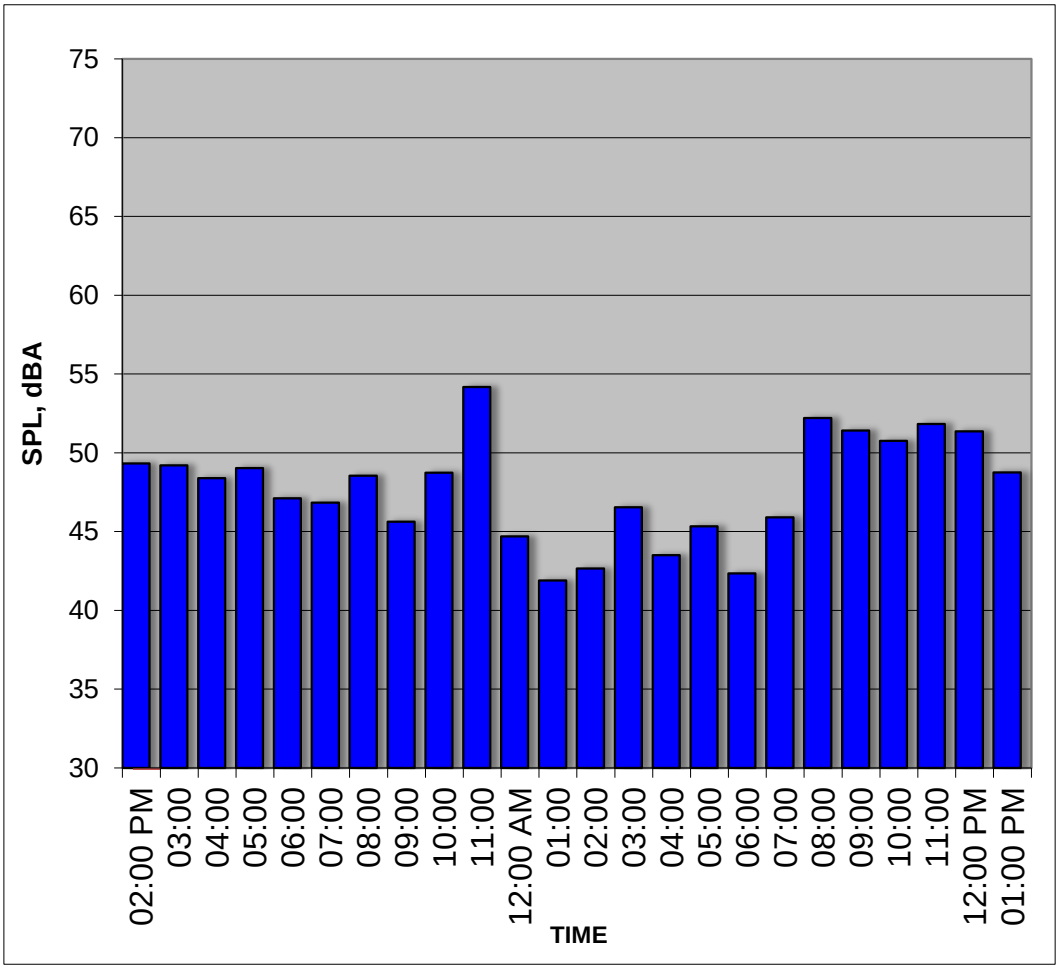
CITY OF WALNUT CREEK MUNICIPAL CODE

NOISE MODELING INPUT/OUTPUT

FIELD DATA SHEETS

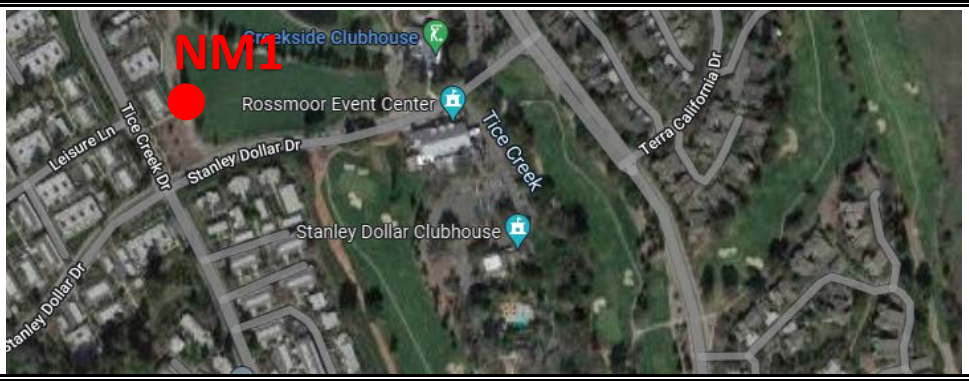
MEASUREMENT DATA - HOURLY NOISE LEVELS

Project:	**Rossmoor Event Center Ambient Survey**		
Address:	**2600 Tice Creek Dr, Walnut Creek, CA 94595**	**Date:**	**7/12/2022**
Location:	East Side of Building		**- 7/13/2022**
Noise		**Position:**	**NM1**
Sources:	**Vehicular Traffic, Birds Chirping, Gardeners, Sprinklers**		



TIME	HNL, dB(A)
02:00 - 03:00 PM	49.3
03:00 - 04:00 PM	49.2
04:00 - 05:00 PM	48.4
05:00 - 06:00 PM	49.0
06:00 - 07:00 PM	47.1
07:00 - 08:00 PM	46.8
08:00 - 09:00 PM	48.5
09:00 - 10:00 PM	45.6
10:00 - 11:00 PM	48.7
11:00 - 12:00 AM	54.2
12:00 - 01:00 AM	44.7
01:00 - 02:00 AM	41.9
02:00 - 03:00 AM	42.7
03:00 - 04:00 AM	46.6
04:00 - 05:00 AM	43.5
05:00 - 06:00 AM	45.3
06:00 - 07:00 AM	42.3
07:00 - 08:00 AM	45.9
08:00 - 09:00 AM	52.2
09:00 - 10:00 AM	51.4
10:00 - 11:00 AM	50.8
11:00 - 12:00 PM	51.8
12:00 - 01:00 PM	51.4
01:00 - 02:00 PM	48.8
CNEL:	54.6

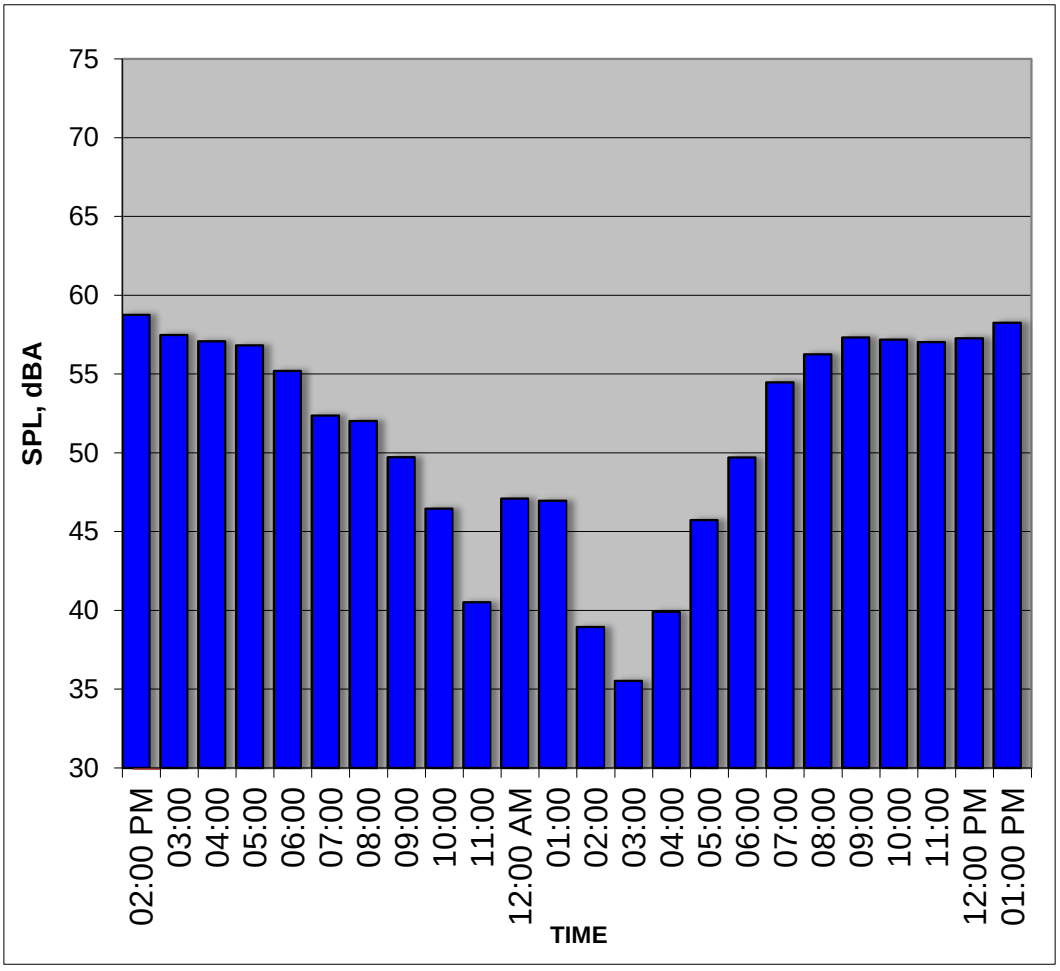
Notes:



Source: Acoustics Group, Inc.

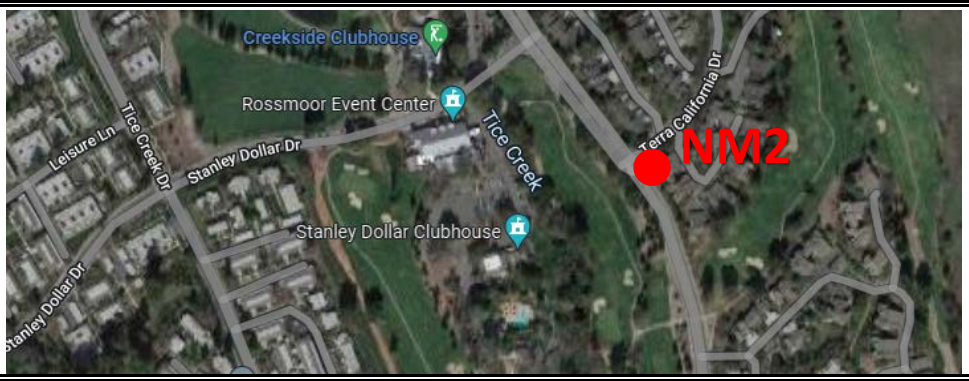
MEASUREMENT DATA - HOURLY NOISE LEVELS

Project:	**Rossmoor Event Center Ambient Survey**		
Address:	**600 Terra California Dr, Walnut Creek, CA 94595**	**Date:**	**7/12/2022**
Location:	West Side of Building		**- 7/13/2022**
Noise		**Position:**	**NM2**
Sources:	**Vehicular Traffic, Sprinklers,**		



TIME	HNL, dB(A)
02:00 - 03:00 PM	58.8
03:00 - 04:00 PM	57.5
04:00 - 05:00 PM	57.1
05:00 - 06:00 PM	56.8
06:00 - 07:00 PM	55.2
07:00 - 08:00 PM	52.4
08:00 - 09:00 PM	52.0
09:00 - 10:00 PM	49.7
10:00 - 11:00 PM	46.5
11:00 - 12:00 AM	40.5
12:00 - 01:00 AM	47.1
01:00 - 02:00 AM	47.0
02:00 - 03:00 AM	39.0
03:00 - 04:00 AM	35.5
04:00 - 05:00 AM	39.9
05:00 - 06:00 AM	45.7
06:00 - 07:00 AM	49.7
07:00 - 08:00 AM	54.5
08:00 - 09:00 AM	56.3
09:00 - 10:00 AM	57.3
10:00 - 11:00 AM	57.2
11:00 - 12:00 PM	57.0
12:00 - 01:00 PM	57.3
01:00 - 02:00 PM	58.3
CNEL:	56.4

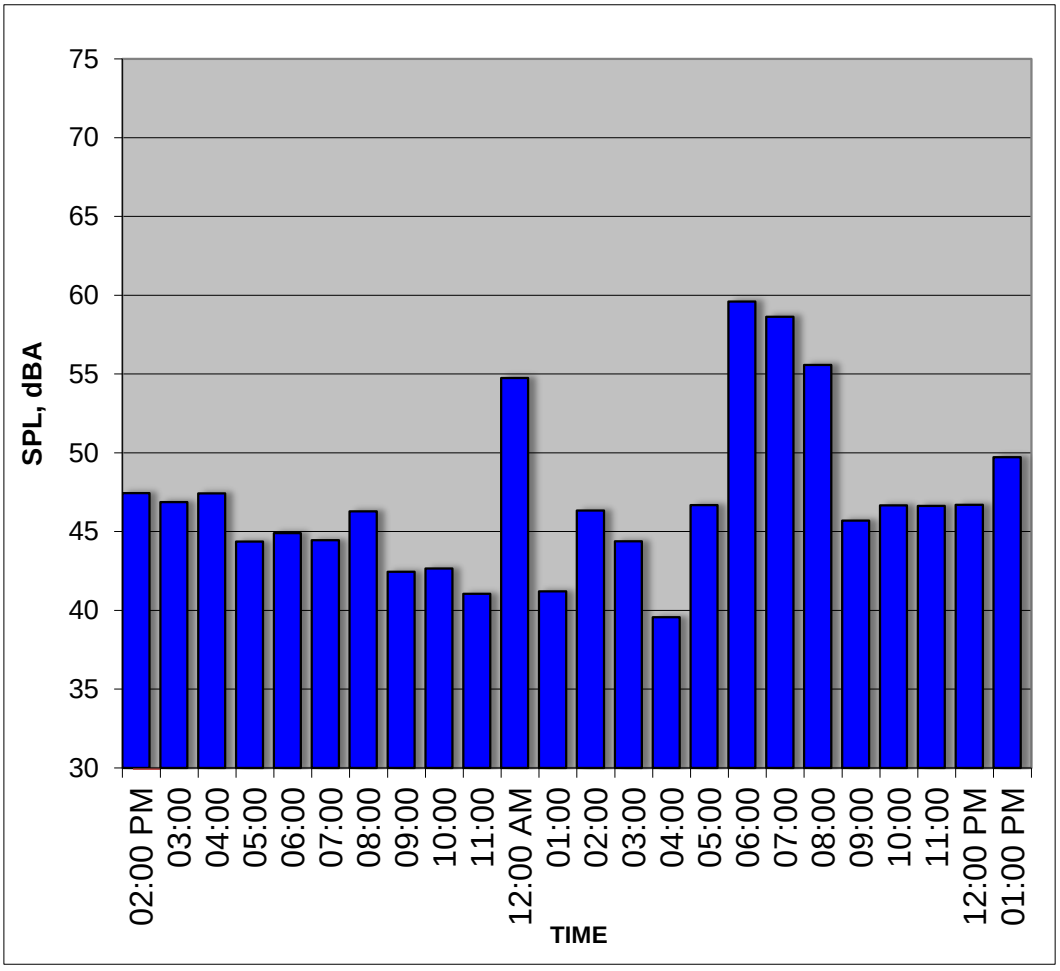
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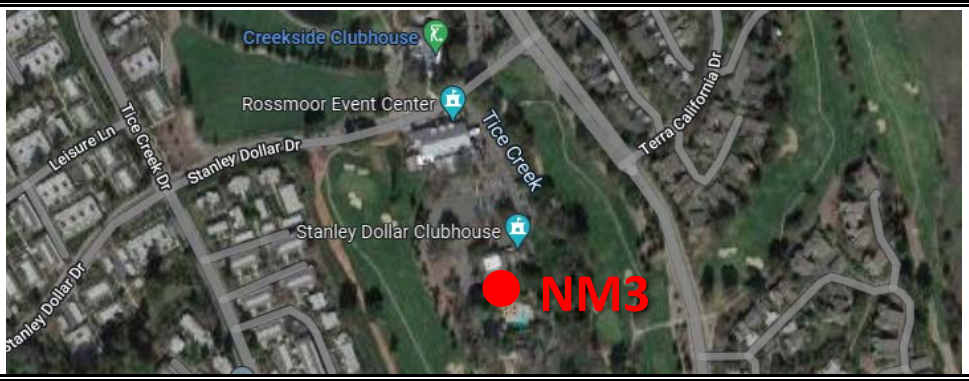
MEASUREMENT DATA - HOURLY NOISE LEVELS

Project:	**Rossmoor Event Center Ambient Survey**		
Address:	**Stanley Dollar Clubhouse, Walnut Creek, CA 94595**	**Date:**	**7/12/2022**
Location:	Between Clubhouse and Pool Area		**- 7/13/2022**
Noise		**Position:**	**NM3**
Sources:	**Community Noise, Sprinklers, Gardeners**		



TIME	HNL, dB(A)
02:00 - 03:00 PM	47.5
03:00 - 04:00 PM	46.9
04:00 - 05:00 PM	47.4
05:00 - 06:00 PM	44.4
06:00 - 07:00 PM	44.9
07:00 - 08:00 PM	44.5
08:00 - 09:00 PM	46.3
09:00 - 10:00 PM	42.5
10:00 - 11:00 PM	42.7
11:00 - 12:00 AM	41.1
12:00 - 01:00 AM	54.7
01:00 - 02:00 AM	41.2
02:00 - 03:00 AM	46.3
03:00 - 04:00 AM	44.4
04:00 - 05:00 AM	39.6
05:00 - 06:00 AM	46.7
06:00 - 07:00 AM	59.6
07:00 - 08:00 AM	58.6
08:00 - 09:00 AM	55.6
09:00 - 10:00 AM	45.7
10:00 - 11:00 AM	46.7
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12:00 - 01:00 PM	46.7
01:00 - 02:00 PM	49.7
CNEL:	58.1

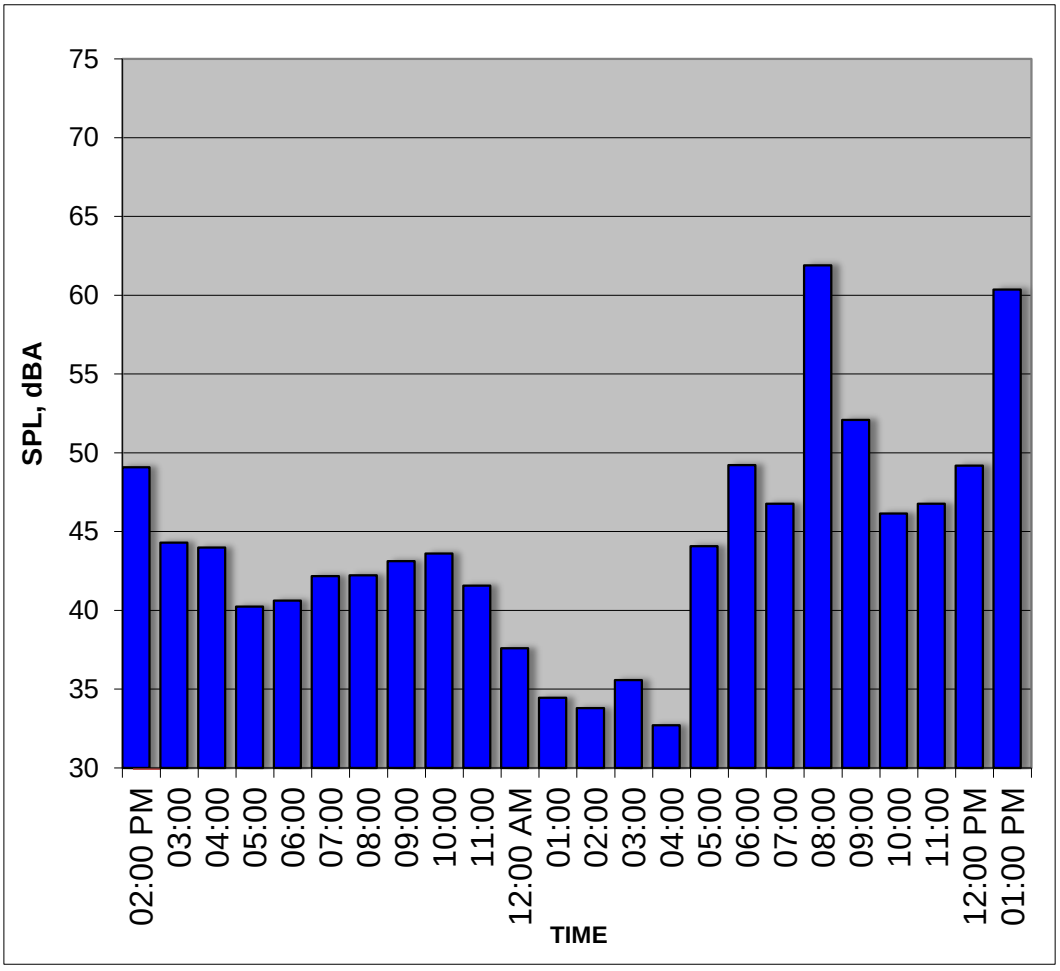
Notes:



Source: Acoustics Group, Inc.

MEASUREMENT DATA - HOURLY NOISE LEVELS

Project:	**Rossmoor Event Center Ambient Survey**		
Address:	**2864 Tice Creek Dr, Walnut Creek, CA 94595**	**Date:**	**7/12/2022**
Location:	East Side of Building		**- 7/13/2022**
Noise		**Position:**	**NM4**
Sources:	**Birds Chirping, Aircrafts, Sprinklers, Backup Alarm, Gardeners**		



TIME	HNL, dB(A)
02:00 - 03:00 PM	49.1
03:00 - 04:00 PM	44.3
04:00 - 05:00 PM	44.0
05:00 - 06:00 PM	40.2
06:00 - 07:00 PM	40.6
07:00 - 08:00 PM	42.2
08:00 - 09:00 PM	42.2
09:00 - 10:00 PM	43.1
10:00 - 11:00 PM	43.6
11:00 - 12:00 AM	41.6
12:00 - 01:00 AM	37.6
01:00 - 02:00 AM	34.4
02:00 - 03:00 AM	33.8
03:00 - 04:00 AM	35.6
04:00 - 05:00 AM	32.7
05:00 - 06:00 AM	44.1
06:00 - 07:00 AM	49.2
07:00 - 08:00 AM	46.8
08:00 - 09:00 AM	61.9
09:00 - 10:00 AM	52.1
10:00 - 11:00 AM	46.1
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12:00 - 01:00 PM	49.2
01:00 - 02:00 PM	60.4
CNEL:	53.2

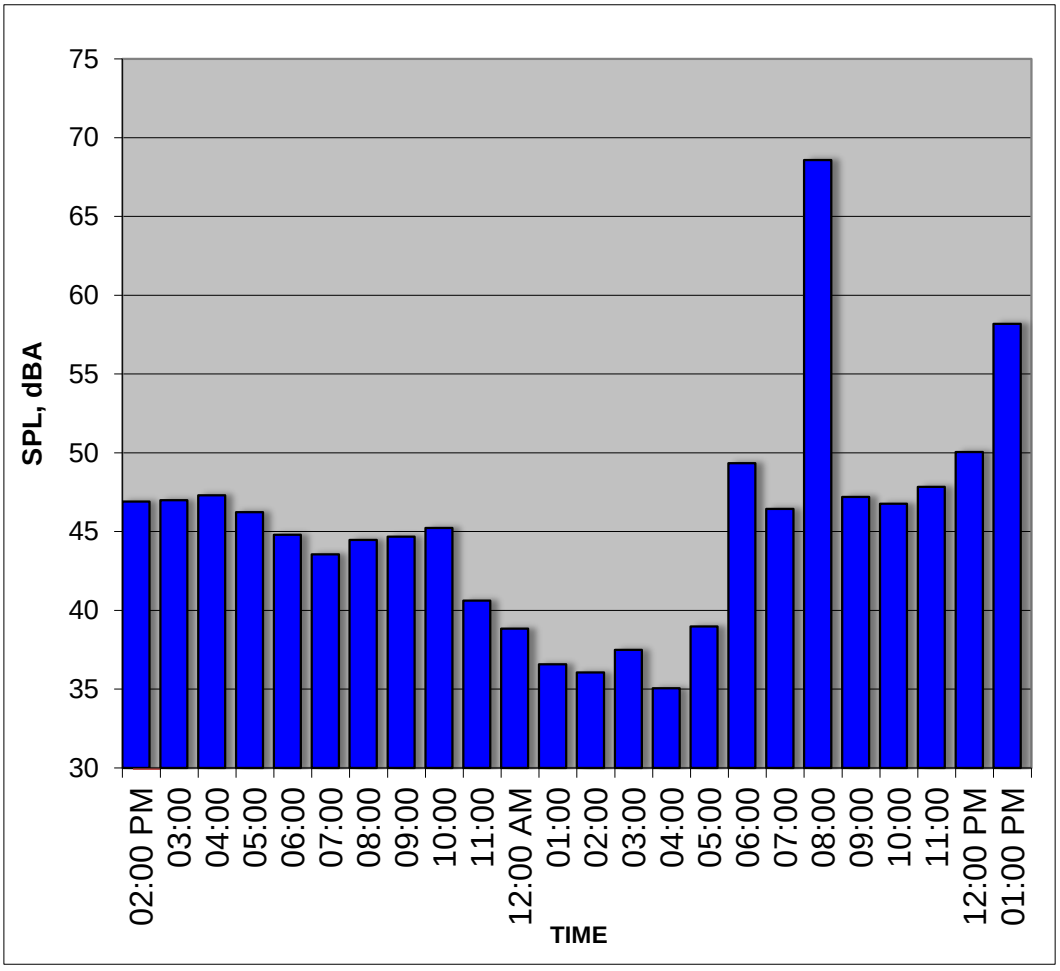
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Source: Acoustics Group, Inc.

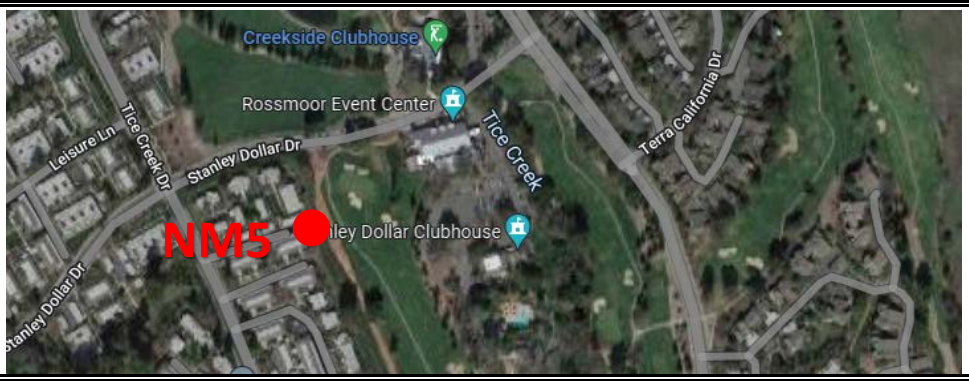
MEASUREMENT DATA - HOURLY NOISE LEVELS

Project:	**Rossmoor Event Center Ambient Survey**		
Address:	**2772 Tice Creek Dr, Walnut Creek, CA 94595**	**Date:**	**7/12/2022**
Location:	East Side of Building		**- 7/13/2022**
Noise		**Position:**	**NM5**
Sources:	**Vehicular traffic, aircraft, community noise, squirrels, gardeners**		



TIME	HNL, dB(A)
02:00 - 03:00 PM	46.9
03:00 - 04:00 PM	47.0
04:00 - 05:00 PM	47.3
05:00 - 06:00 PM	46.2
06:00 - 07:00 PM	44.8
07:00 - 08:00 PM	43.5
08:00 - 09:00 PM	44.5
09:00 - 10:00 PM	44.7
10:00 - 11:00 PM	45.2
11:00 - 12:00 AM	40.6
12:00 - 01:00 AM	38.8
01:00 - 02:00 AM	36.6
02:00 - 03:00 AM	36.1
03:00 - 04:00 AM	37.5
04:00 - 05:00 AM	35.1
05:00 - 06:00 AM	39.0
06:00 - 07:00 AM	49.3
07:00 - 08:00 AM	46.4
08:00 - 09:00 AM	68.6
09:00 - 10:00 AM	47.2
10:00 - 11:00 AM	46.8
11:00 - 12:00 PM	47.8
12:00 - 01:00 PM	50.0
01:00 - 02:00 PM	58.2
CNEL:	56.3

Notes:



Source: Acoustics Group, Inc.

CITY OF WALNUT CREEK MUNICIPAL CODE

(21 hits)

CHAPTER 6. NUISANCES

Article 1. Handbill Distribution.

4-6.101 Definitions.
For the purposes of this Article, the following terms shall have the following meanings:

a. Handbill means any unsolicited dodger, circular, leaflet, pamphlet, paper, booklet or other printed or written material regardless of whether the text, if any, of the material is commercial or non-commercial.

b. Person means any individual, firm partnership, or association, corporation company or organization of any kind. (5400, as amended by §1, Ord. 1785, eff. April 9, 1992, and by §1, Ord. 1885, eff. April, 4, 1996)

4-6.102 Deposit on Vehicles.
No person shall place or deposit any handbill in or upon any vehicle. (5401, as amended by §4, Ord. 1712, eff. December 1, 1988, by §1, Ord. 1785, eff. April 9, 1992 and by §1, Ord. 1885, eff. April 4, 1996)

4-6.103 Violations.
Any person who violates any provision of §4-6.102 shall be deemed guilty of a misdemeanor or an infraction. Each deposit of a handbill in violation of this Article shall be deemed a separate violation.

a. If charged as an infraction the penalty upon conviction of such person shall be a fine as set forth in §1-2.01 of this Code.

b. If charged as a misdemeanor, the penalty upon conviction of such person shall be imprisonment in the county jail for a period not to exceed six months, or by a fine not exceeding $1,000, or by both such fine and imprisonment. (§1, Ord. 1785, eff. April 9, 1992, as amended by §1, Ord. 1885, eff. April 4, 1996)

Article 2. Noise

4-6.201 Purpose of Provision.
It is hereby found and declared that:

a. The creation or maintenance of excessive noise or vibration which is prolonged or unreasonable in its time, place and use is deemed to be a serious detriment to the public health, safety and quality of life of the residents of the City; and

b. Therefore, it is the intent of the City to control and, in some instances, prohibit noise and vibration which may impact the health, safety or welfare of the citizens of Walnut Creek. (5410 and by §1, Ord. 1753, eff. 11/8/90)

4-6.202 Definitions.
Loud Noise is defined as excessive or unreasonable noise, sound or vibration which endangers the comfort, repose, health, peace or safety of others within the limits of the City. The determination of whether a noise is unreasonable shall be based on, among other things, consideration of the hour, place, nature, and circumstances of the emission or transmission of any loud noise.

Holidays are those days enumerated in the resolution of the City Council entitled "Resolution Enumerating Holidays" on file in the office of the City Clerk. (5411 and by §1, Ord. 1753, eff. November 8, 1990)

4-6.203 Prohibited Noises Enumerated.
As used in this article, loud, excessive or unreasonable noise shall include, but not be limited to, the following:

a. Radios, Phonographs, etc. The use, operation or maintenance of sound, from any radio, musical instrument, phonograph or other device designed for the production or reproduction of sound in such a manner as to disturb the peace, quiet and comfort of individuals on a public street, or in or near a residence, business or other such occupied structure. The creation or maintenance of such noise in such a manner so as to be plainly audible at a distance of fifty feet (50') from the source of such noise shall be prima facie evidence of a violation of this Section.

b. Loudspeakers and Amplifiers for Advertising. The use, operation, or maintenance of any loudspeaker, sound amplifier or other machine or device used for the production or reproduction of sound which is directed toward, or cast upon or across, a residential or commercial property line for the purposes of commercial advertising unless a permit for such sound is secured from the Chief of Police. The Chief of Police may issue a permit, subject to reasonable restrictions.

Such restrictions shall be based upon the area in which the proposed broadcast is to occur, the hours of the proposed broadcast, and the method by which such amplification or broadcast shall occur. In residential zones, a permit shall be granted only for broadcast during the hours of 8 a.m. and 6 p.m. on weekdays which are not holidays and between the hours of 9 a.m. and 5 p.m. on weekends and holidays but such amplification shall not be plainly audible from a distance of more than 50' (fifty feet) from the source of such amplification. In all other zones, a permit shall be granted only for broadcast during the hours of 8 a.m. and 9 p.m. on weekdays, weekends and holidays but such amplification shall not be plainly audible from a distance of more than 50' (fifty feet) from the source of such amplification.

The applicant for such a permit, if the same is denied for cause, may appeal this denial to the City Manager. The City Manager shall thereupon issue or deny the permit. Any permit issued by the Chief of Police may be revoked by either the City Manager or the Chief of Police if the applicant violates any of the conditions set forth in the permit.

c. Distraction of Drivers of Motor Vehicles. The use, operation, or maintenance of any horn, radio, machine or device used for the production or reproduction of sound which is directed to, or cast upon, public streets or highways which distracts, or is intended to distract, the attention of drivers of motor vehicles, unless operated to request assistance or warn of a hazardous situation. This section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications, water, or other such public utilities.

d. Yelling, Shouting, etc. Yelling, shouting, hooting, whistling, or singing on a public street at any time or place with the intent to annoy or disturb the quiet, comfort or repose of a person or persons in any dwelling, office, building or structure, or of any person or persons in the vicinity.

e. Animals, Birds, etc. The keeping of any animal or bird, as pet or livestock, which, by causing frequent or continuous noise disturbs the comfort or repose of any persons in the vicinity. The creation or maintenance of noise by animals in such a manner as to be plainly audible at a distance of 50' (fifty feet) from the source of such noise shall be prima facie evidence of a violation of this Section.

f. Construction or Repair of Buildings. The erection, construction, demolition, alteration or repair of any building, structure or residence that requires a permit, or the excavation of any earth, fill, streets or highways that requires a grading permit, other than between the hours of 7:00 a.m. and 6:00 p.m. on weekdays which are not holidays, or those precise hours of operation enumerated in individual building and grading permits.

If the Chief of Code Enforcement determines that the public health, safety and welfare will not be impaired by the erection, construction, demolition, alteration or repair of any building, structure or residence during hours other than permitted in the preceding paragraph, and if he or she further determines that loss or inconvenience would result to any person in interest, he or she may grant permission for such work to be done, the specific hours and days of operation to be enumerated in the permit.

If the City Engineer determines that the public health, safety and welfare will not be impaired by the excavation of any earth, fill, streets or highways during the hours of the first paragraph of this subsection and if he or she further determines that loss or inconvenience would result to any person in interest, he or she may grant permission for such work to be done, the specific hours and days of operation to be enumerated in the permit.

In case of urgent necessity in the interest of public health and safety, the Chief of Code Enforcement or the City Engineer may issue a permit to conduct such emergency work for a period not to exceed three (3) days or less while the emergency continues. Such permit may be renewed for periods of three (3) days or less while the emergency continues.

This Section shall not be construed to require a permit for a public utility engaged in any of the aforementioned activities provided reasonable effort is made to minimize noise disturbance while such work is in progress.

g. Maintenance Equipment. The use and operation of any noise-creating commercial or residential landscaping or home maintenance equipment or tools including, but not limited to, hammers, blowers, trimmers, mowers, chainsaws, power fans or any engine, the operation of which causes noise due to the explosion of operating gases or fluids, other than between the hours of 8:00 a.m. and 7:00 p.m. on weekdays and 9:00 a.m. and 7:00 p.m. on weekends and holidays. (§1, Ord. 1753, eff. November 8, 1990)

4-6.204 Loud Noises Prohibited.
No person shall make, continue or cause to be made or continued, any loud, excessive or unreasonable noise or sound within the limits of the City. (§1, Ord. 1753, eff. November 8, 1990)

4-6.205 Exemptions.
a. The provisions of this article shall not apply in actual or threatened emergency situations such as those caused by natural or man-made disasters.

b. Businesses and individuals using maintenance equipment in the Core Area and in business parks may commence at 7:00 a.m. on weekdays which are not holidays but are otherwise subject to the limitations set forth above.

c. Schools within the City’s limits using maintenance equipment may commence at 7:00 a.m. on weekdays which are not holidays but are otherwise subject to the limitations set forth above. (§1, Ord. 1753, eff. November 8, 1990)

d. If the Community Development Director determines that the public health, safety and welfare will not be impaired by the operation of golf course maintenance equipment, expressly for the purpose of preparing greens and sand trap areas prior to a course being opened for play, he or she may allow such operations to occur prior to the normal operating hour limitations as set forth in Section 4-6.203 (g) of the Municipal Code, but in no instance prior to 30 minutes before sunrise or 6:00 A.M., whichever is later. In granting such an exemption, the Community Development Director may impose any conditions as deemed necessary to ensure that the operation of golf course maintenance equipment prior to the normally permitted operating hours will not unreasonably disturb the occupants of residences located adjacent to the golf course requesting the exemption. Exemptions granted by the Community Development Director can be revoked at any time. Decisions by the Community Development Director shall be final. (§1, Ord. 1920, eff. 2/19/98.)

4-6.207 Penalty; Misdemeanor or Infraction.
Any person who violates any provision of §§4-6.203 through 4-6.204 shall be deemed guilty of a misdemeanor or an infraction.

a. If charged as an infraction, the penalty upon conviction of such person shall be a fine as set forth in §1-2.01 of this Code.

b. If charged as a misdemeanor, the penalty upon conviction of such person shall be imprisonment in the county jail for a period not to exceed six months, or by a fine not exceeding $1000.00, or by both fine and imprisonment. (§1, Ord. 1753, eff. November 8, 1990)

4-6.208 Abatement of Noise as Nuisance.
Any noise maintained in violation of any provision of this article shall additionally be deemed a public nuisance. Such public nuisance may be abated by the Chief of Police, the Community Development Director, or his or her designees, in accordance with the procedures authorized by this Code. (§1, Ord. 1753, eff. November 8, 1990)

Article 3. Parking on Private Property

4-6.301 Private Parking Signing.
a. No person shall drive or park a motor vehicle upon land or premises where the owner or the person occupying or having possession, or the agents thereof, have posted on such property or premises a notice in substantially the following form, and where the permission therein referred to shall not have been granted:

1. A statement that parking is restricted and to whom it applies:

Examples: "Parking for XXX customers only";
"This space reserved for XXX";
"Parking for tenants only";
"No parking in this area";
"Parking by permit holders only";

2. A statement that violators may or will be cited:

Examples: "Violators will be cited by Walnut Creek Police";
"Unauthorized vehicles will be cited or towed at owner's expense";

3. A reference to this Municipal Code section:

Examples: "Sec. 4-6.301 Walnut Creek Muni. Code";
"Section 4-6.301 W.C.M.C."

Lettering shall be on a contrasting background and of such size and so placed as to be reasonably visible to all persons entering the private parking area. If the parking area is shared by more than one business or firm, those stalls for the private use by each shall be clearly identified.

Nothing in this section shall be construed as placing a requirement upon the Police Department to patrol such private property for violations and no enforcement action shall be taken except upon specific request by an authorized agent, owner or person in lawful possession or control thereof.

b. Where parking meters are used, signs on the parking meters that are consistent with the signs on the parking meters placed on the public streets or public parking lots shall be deemed to meet the requirements of subsection (a). (5420, as amended by §1, Ord. 1270, eff. April 7, 1976, and by §1, Ord. 1965, eff 8/10/00.)

4-6.302 Interference With Use of Property.
No person, without permission of the owner or person entitled to the possession thereof, shall park any motor vehicle in or upon any private property so as to interfere with the use thereof. (5421)

4-6.303 Unlawful Parking.
It is unlawful for any person to operate, drive or leave any vehicle in, over or upon any private property without the express or implied permission of the owner thereof, the person entitled to the possession thereof for the time being, or the authorized agent of either. The provisions of this section shall not apply to public or private parking lots. (5422)

4-6.304 Removal of Vehicles.
Any regularly employed and salaried officer of the police department, the owner of any private property, the person entitled to the possession thereof for the time being, or the authorized agent of either may remove or cause to be removed any vehicle parked or left standing on any private property in violation of the provisions of §4-6.303 of this article. (5423, as amended by §1, Ord. 1143, eff. August 30, 1972)

4-6.305 Liability For Wrongful Removal of Vehicles.
If a vehicle removed from such private property was rightfully there, the person who complained of the presence of such vehicle and/or the person (other than the employees of the Police Department) who caused such vehicle to be removed shall be liable for any and all charges for towing and for caring for and keeping safe such vehicle. (5424, as amended by §1, Ord. 1143, eff. August 30, 1972)

4-6.306 Removal of Vehicles to Places of Safety.
Any person referred to in Section 4-6.304 of this article who removes any vehicle from any private property in the City is hereby authorized to remove such vehicle to the nearest garage or other place of safety or to a garage designated or maintained by the City. (5425)

4-6.307 Notice to Owner of Removed Vehicle.
Any person referred to in Section 4-6.304 of this article who removes a vehicle from private property shall give notice to the owner of the vehicle as provided in the Vehicle Code of the State. (5426)

4-6.308 Garage Keeper's Lien.
The keeper of any garage in which any vehicle is stored in accordance with the provisions of this article shall have a lien thereon for his compensation for towing and for caring for and keeping safe such vehicle and may satisfy such lien upon compliance with and under the conditions stated in the Vehicle Code of the State. (5427)

4-6.309 Notification to Police Department.
Any person, including any tow truck operator or driver, as defined under the provisions of this article, who removes or causes to be removed a vehicle, shall notify the Police Department of the location from which the vehicle was towed, the vehicle license number and description and the place of storage within two (2) hours of removal. (§1, Ord. 1212, eff. May 29, 1974)

4-6.310 Business Records.
Any person, as defined under the provisions of this article, who removes or causes to be removed a vehicle shall keep appropriate records of the removal, including the name, address and telephone number of the person authorizing the removal from private property. (§1, Ord. 1212, eff. May 29, 1974)

Article 4. Weed Abatement (Repealed)

Article 4 of Chapter 6, Title IV (Weed Abatement) repealed in its entirety by §1, Ord. 1480, eff. August 14, 1980.

Article 4. Trespass

4-6.401 Business Premises Trespass.
a. No person shall remain upon the outdoor portion of any business premises after being notified by the owner, the person in lawful possession, or their agent, or by a peace officer at the request of the owner, the person in lawful possession, or their agent, to leave the premises.

b. No person, without permission of the owner, the person in lawful possession, or their agent shall enter upon the outdoor portion of any business premises after having been notified by the owner, the person in lawful possession, or their agent to keep off the business premises. After complying with such order, no person shall return within 72 hours of leaving.

c. This section shall not apply in any of the following instances:

1. Where its application results in an act prohibited by the Unruh Civil Rights Act or any other provision of law relating to prohibited discrimination against any person on account of color, race, religion, creed, ancestry or national origin;

2. Where its application would result in interfering with lawful labor picketing;

3. Where its application would result in interfering with any other exercise of a constitutionally protected right such as peaceful expressions of political or religious opinions. (§1, Ord.1832, eff. 2/3/94)

4-6.402 Penalty; Misdemeanor or Infraction.
Any person who violates any provision of sections 4-6.401 shall be deemed guilty of a misdemeanor or an infraction.

a. If charged as an infraction the penalty upon conviction of such person shall be a fine as set forth in section 1-2.01 of this Code.

b. If charged as a misdemeanor, the penalty upon conviction of such person shall be imprisonment in the county jail for a period not to exceed six months or by a fine not exceeding $1,000, or by both such fine and imprisonment. (§1, Ord.1832, eff. 2/3/94)

Article 5. Maintenance of Private Streets

4-6.501 Definitions.

a. As used in this article, private street shall mean a street as set forth in §10-2.1.303 of this Code, which has not been offered to or accepted by the City of Walnut Creek as a public street, although said street might meet the standard specifications for City streets.

b. Street maintenance shall mean all actions necessary to inspect, clean, repair or replace a street in order to conform to Walnut Creek street maintenance standards.

c. Development, as used in this article, refers to the property set forth in Ordinance No. 859 (known as Diablo Hills), and Ordinance No. 1050 (known as Rossmoor Leisure World) which are on file in the office of the City Clerk. (§1, Ord. 1054, eff. March 31, 1971)

4-6.502 Maintenance of Streets.

It shall be unlawful for the owner or developer, their successors or assigns, to allow the streets within their development encompassed by Section 4-6.501(a) to fall into a state of disrepair which would render said street or streets unacceptable if offered for public use. The Chief of Code Enforcement shall determine that there is a violation of this section if he finds the existence of (1) base failure, (2) extensive alligatorization and cracking of the surface of the pavement, or (3) dangerous chuck holes having a diameter greater than six (6) inches. (§1, Ord. 1054, eff. March 31, 1971, as amended by §19, Ord. 1143, eff. August 30, 1972)

4-6.503 Abatement of Nuisance.

A violation of §4-6.502 shall be a nuisance and the Chief of Code Enforcement shall abate said nuisance as follows:

a. Notice to Repair. The Chief of Code Enforcement is authorized by this article and empowered to notify the owner, developer, their successors or assigns of a violation of Section 4-6.502 and order immediate repair to any defective street or streets which is sufficient to return said street or streets to the condition required by this article. Written notice shall be by registered mail addressed to the owner, developer, their successors or assigns at the last known address.

b. Action upon Noncompliance. Upon the failure, neglect or refusal by the aforementioned party or parties to make the required repairs within a reasonable time after receipt of said notice, the Chief of Code Enforcement is authorized and empowered to cause the required repairs to be made. In the event the written notice is returned to the post office because of its inability to make delivery thereof, the Chief of Code Enforcement shall immediately cause a notice to be posted on the property concerned, and upon failure, neglect or refusal of the owner, developer, successors or their assigns of the property in question to properly restore the defective road or roads within thirty (30) days after the return of the notice to the post office, the Chief of Code Enforcement is hereby authorized and empowered to order the repairs to be made.

c. Charge Included in Tax Bill. When the City has effected the repair of the defective road or roads or has paid for their repair, the actual cost thereof, plus accrued interest at the rate of seven percent (7%) per annum from the date of completion of the work, if not paid by such owner prior thereto, shall be charged to the owner, developer, their successors or assigns on the next regular tax bill forwarded to such owner by the City and such charge shall be due and payable at the time of payment of such bill.

d. Recorded Statement Constitutes Lien. Where the full amount due the City is not paid within sixty (60) days after the repairs are made, the Chief of Code Enforcement shall cause to be recorded in the office of the City Clerk a sworn statement showing the cost and expense incurred for the work, the date the work was done and the location of the property on which the work was done. The recordation of such sworn statement shall constitute a lien and privilege on the property and shall remain in full force and effect for the amount due in principal and interest, plus costs of court, if any, for collection until final payment has been made. Such costs and expenses shall be collected in the manner fixed by law for the collection of taxes and shall be subject to a delinquent penalty of $5.00 in the event the same is not paid in full on or before the date the tax bill upon which such charge appears becomes delinquent. Such sworn statements shall be prima facie evidence that all legal formalities have been complied with and that the work has been done properly and satisfactorily and shall be full notice to every person concerned that the amount of the statement, plus interest at the rate of seven percent (7%) per annum from the date of completion of the work, constitutes a charge against the property designated or described in the statement and that the same is due and collectible as provided by law. (§1, Ord. 1054, eff. March 31, 1971, as amended by §19, Ord. 1143, eff. August 30, 1972)

Article 6. Graffiti Nuisance and Abatement

4-6.601 Purpose.

The City Council of the City of Walnut Creek finds that graffiti is offensive to the senses and interferes with the comfortable enjoyment of one’s property and, therefore, constitutes a nuisance.

The Council also finds that graffiti decreases property values in the community and may lead to an increase in crime or juvenile delinquency. Graffiti is also visually obnoxious and inconsistent with the City’s goals for property maintenance and maintenance of the City’s development

standards. Unless graffiti is quickly removed from private property, it results in other properties becoming the target of graffiti, thereby diminishing their value and reducing the ability of the City to meet the health, safety and welfare needs of its citizens.

Accordingly, the City will provide for the removal of graffiti from privately owned permanent structures located on privately owned real property within the City as authorized by California Government Code Section 38773.5. (§1, Ord. 1844, eff. 10/13/94)

4-6.602. Definitions.

a. Graffiti shall mean the drawing, defacing, writing, marring, inscribing, scratching, painting, spraying or affixing of any word, figure or design on any structural component of privately owned property of another without the owner's consent.

b. Property Owner shall mean any natural person, corporation, firm or other association or person whether the owner, lessee, sublessor, sublessee or occupant of any premises whereon such graffiti is being maintained, permitted or continued.

c. Removal shall mean to repair, replace, remove, destroy or otherwise eliminate the graffiti by such means and in such manner and to such an extent that the graffiti is no longer visible. (§1, Ord. 1844, eff. 10/13/94)

4-6.603 Prohibition of Graffiti.

It is hereby declared a nuisance for any person owning, leasing, renting, occupying, managing or having charge or possession of any property in the City to maintain or allow to be maintained, graffiti on such property if the graffiti, or any portion of it, is visible to the public from a public or private street, sidewalk or from other properties, public or private. (§1, Ord. 1844, eff. 10/13/94)

4-6.604 Enforcement.

a. The City Council authorizes the Chief of Police to declare that graffiti which exists on a particular piece of property constitutes a nuisance. The Chief of Police shall provide notice to the property owner that graffiti present on the property constitutes a nuisance.

b. Notice will be provided to property owners and shall be addressed to the name and address as it appears on the latest equalized tax roll or in other records maintained by public agencies with a copy addressed to the subject property. Said notice shall be effected by depositing a copy of the notice in the U.S. Mail, Certified with postage fully affixed, or personally delivering a copy of the notice to the owner of the property. The service is complete at the time of deposit in the mail or when personal service is effectuated. The failure of any person to receive such notice shall not effect the validity of any legal proceedings regarding removal of the graffiti.

c. Unless an appeal is filed pursuant to Sec. 4-6.05, property owners shall remove graffiti from their property within fifteen (15) calendar days after notification by the Chief of Police to remove such graffiti. Extensions of the removal period may be granted in writing by the Chief of Police.

d. In the event the owner fails to remove the graffiti within 15 (fifteen) days after notice has been sent, the City may at its option abate the graffiti.

e. In the event the City abates the graffiti, the Director of Public Services shall prepare a report setting forth an accounting of the cost of abatement for each parcel of property where the work was performed. Such report shall be presented by the Director of Public Services to the City Council which may, after notice and an opportunity for the property owner to be heard, accept the report and overrule any objections by the property owners liable to be assessed for the abatement. The Council has the authority to modify the report if necessary. The Council may then confirm the report and such amount shall become a special assessment and lien against the property pursuant to Government Code Section 38773.5.

f. The cost of the abatement to be billed to the property owner shall be the cost for City crews or contractors to remove the graffiti plus the costs incurred by City in enforcing the abatement including investigation, boundary determination, repainting, measurement, clerical and other related costs.

g. After the assessment is made and confirmed by the Council, a lien attaches on the parcel upon recordation of the order with the County Recorder. The Director of Public Services shall also cause a copy of the report to be filed with the County Auditor on or before August 10th of every year so that the amount of the assessment may be collected at the time and in the manner as other municipal taxes. In the event payment of such taxes is delinquent, the amount is subject to the same penalties provided for ordinary municipal taxes. (§1, Ord. 1844, eff. 10/13/94)

4-6.605 Appeal of Decision.

a. The property owner may request a hearing with respect to the Chief of Police's determination that graffiti on a particular parcel constitutes a nuisance within ten (10) calendar days after mailing or personal delivery of the notice to remove graffiti. Such appeal shall only be effective if made in writing and received in the office of the Chief of Police prior to expiration of the ten days.

b. The Director of Public Services shall expeditiously hear and determine any appeal made pursuant to this section.

c. The decision of the Director of Public Services shall be final. (§1, Ord. 1844, eff. 10/13/94)

4-6.606 Authority to Abate.

The Director of Public Services may enter upon private property to abate the graffiti. (§1, Ord. 1844, eff. 10/13/94)

4-6.607 Recovery of Removal Costs.

The City or property owner may seek restitution for the entire cost of removal, including administrative fees, to reimburse City or property owner for any damage caused by the graffiti or the removal. Said recovery may be pursued in a separate civil action, or as part of a criminal proceeding against the responsible party. Parental liability shall lie from damage or costs incurred by a minor who defaces or otherwise damages property pursuant to this section and California Civil Code Section 1714.1(b). (§1, Ord. 1844, eff. 10/13/94)

Home < >

The Walnut Creek Municipal Code is current through Ordinance 2208, passed December 15, 2020.

Disclaimer: The City Clerk's Office has the official version of the Walnut Creek Municipal Code. Users should contact the City Clerk's Office for ordinances passed subsequent to the ordinance cited above.

City Website: https://www.walnut-creek.org/
City Telephone: (925) 943-5800

Code Publishing Company

NOISE MODELING INPUT/OUTPUT

CadnaA Input Output
Project: Rossmoor Walnut Creek Event Center

Receiver

Name	M.	ID	Level Lr Day (dBA)	Level Lr Night (dBA)	Limit. Value Day (dBA)	Limit. Value Night (dBA)	Land Use Type	Land Use Auto	Noise Type	Height (m)		Coordinates X (m)	Y (m)	Z (m)
NM1			40.7	40.7	0	0	x		Total	1.5	r	390.1	401.4	108.57
NM2			46.5	46.5	0	0	x		Total	1.5	r	808.61	347.6	114.16
NM3			56.4	56.4	0	0	x		Total	1.5	r	669.12	235.08	115.93
NM4			44.8	44.8	0	0	x		Total	1.5	r	580.81	118.08	123.11
NM5			43.1	43.1	0	0	x		Total	1.5	r	504.95	304.57	115.49
NM5			50.8	50.8	0	0	x		Total	1.5	r	527.41	234.22	121.5

Area Source

Name	M.	ID	Result. PWL Day (dBA)	Result. PWL Evening (dBA)	Result. PWL Night (dBA)	Result. PWL'' Day (dBA)	Result. PWL'' Evening (dBA)	Result. PWL'' Night (dBA)	Lw / Li Type	Value	norm.	Correction Day dB(A)	Correction Evening dB(A)	Correction Night dB(A)	Sound Reduction R	Area (m^2)	Attenuatio	Operating Time Day (min)	Special (min)	Night (min)	K0 (dB)	Freq. (Hz)	Direct.	Moving Pt. Src Number Day	Evening	Night
	1		102.2	102.2	102.2	80.5	80.5	80.5	Lw''	P		0	0	0								0	(none)			
	2		102.2	102.2	102.2	80.5	80.5	80.5	Lw''	P		0	0	0								0	(none)			
	3		102.2	102.2	102.2	80.5	80.5	80.5	Lw''	P		0	0	0								0	(none)			
	4		102.2	102.2	102.2	80.5	80.5	80.5	Lw''	P		0	0	0								0	(none)			
	5		102.2	102.2	102.2	80.5	80.5	80.5	Lw''	P		0	0	0								0	(none)			
	6		102.2	102.2	102.2	80.5	80.5	80.5	Lw''	P		0	0	0								0	(none)			

Barrier

Name	M.	ID	Absorption left	Absorption right	Z-Ext. (m)	Cantilever horz. (m)	Cantilever vert. (m)	Height Begin (m)	Height End (m)
					1.29	9	1.29		
					1.29	9	1.29		
					1.29	9	1.29		
					1.29	9	1.29		

W

Sound Level

Name	ID	Type	Oktave Spectrum (dB) Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	Source
Pickleball	P	Lw		85.4	80.4	76.5	75.1	76.1	77.6	72.1	67.4	62.4	80.5	88.2	

Result Table

Receiver Name	ID	Land Use	Limiting Value Day dB(A)	Limiting Value Night dB(A)	rel. Axis Station m	Distance m	Height m	Lr w/o Noise Control Day dB(A)	Lr w/o Noise Control Night dB(A)	dL req. Day dB(A)	dL req. Night dB(A)	Lr w/ Noise Control Day dB(A)	Lr w/ Noise Control Night dB(A)	Exceeding Day dB(A)	Exceeding Night dB(A)	passive NC dB(A)
NM1			0	0				40.7	40.7	40.7	40.7	0	0	-	-	-
NM2			0	0				46.5	46.5	46.5	46.5	0	0	-	-	-
NM3			0	0				56.4	56.4	56.4	56.4	0	0	-	-	-
NM4			0	0				44.8	44.8	44.8	44.8	0	0	-	-	-
NM5			0	0				43.1	43.1	43.1	43.1	0	0	-	-	-
NM5			0	0				50.8	50.8	50.8	50.8	0	0	-	-	-

Acoustical Surfaces, Inc.

SOUNDPROOFING, ACOUSTICS, NOISE & VIBRATION CONTROL SPECIALISTS

123 Columbia Court North • Suite 201 • Chaska, MN 55318

(952) 448-5300 • Fax (952) 448-2613 • (800) 448-0121

Email: sales@acousticalsurfaces.com

Visit our Website: www.acousticalsurfaces.com

We Identify and S.T.O.P. Your Noise Problem



NOISE S.T.O.P.™ Sound Blankets – Reinforced

BBC – EX-R-2 Noise Barrier/Sound Absorber Sound Blankets

BBC- EXT-R- 2 offers the benefits of both a noise barrier and a sound absorber composite in one product. This BBC product consists of an exterior grade, UV resistant heavy-duty faced quilted fiberglass absorber bonded to a one-pound per sq. ft. reinforced loaded vinyl barrier. The heavy-duty facing is a 10 oz per sq yd vinyl-coated-polyester (VCP) quilted to the sound absorber rather than the standard 4.5 oz facing. Curtain panels are constructed with grommets across the top and bottom and exterior grade Velcro seals along the vertical edges.

- STC 33 Rating, NRC .75
- Available facing colors on quilt: gray, tan, black, white
- Available barrier colors: gray, tan, or blue

MATERIAL: Vinyl coated polyester facing on 2" quilted fiberglass/ 1 lb-psf reinforced loaded vinyl barrier.

FEATURES: Effective and durable absorber with mass loaded vinyl barrier option.

APPLICATIONS: Typically used as modular curtain panels in outdoor applications where high abuse resistance or excellent durability as well as maximum longevity and noise reduction is required. Also used as sliding acoustical doors, durable acoustical jacket on fans or valves, as well as a temporary noise barrier on outdoor construction projects.

WEIGHT: 1.45 lb psf.

THICKNESS Nominal 2".

SIZES: 54" wide, lengths as required up to 25' high.

COLORS: Available facing colors on quilt: gray, tan, black, white.

Available barrier colors: gray, tan, or blue.

TEMPERATURE RANGE: -20° to +180° F.

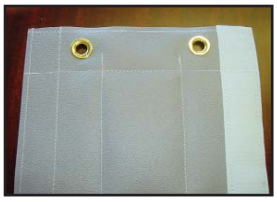


Facing Color Options



Barrier Color Options


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Sound Blanket: Sound Transmission Loss - ASTM E90 & E413							
Frequency	**125Hz**	**250Hz**	**500Hz**	**1KHz**	**2KHz**	**4KHz**	**STC**
BBC-EXT-R-2	14	20	32	41	42	41	33

Sound Blanket: Sound Absorption Performance - ASTM C423							
Frequency	**125Hz**	**250Hz**	**500Hz**	**1KHz**	**2KHz**	**4KHz**	**NRC**
BBC-EXT-R-2	.45	.96	.87	.66	.47	.28	.75