March 18, 2024

Monet Sheikhali | Senior Planner
Planning and Economic Development
100 Santa Rosa Avenue, Room 3
Santa Rosa, CA 95404
Tel. (707) 543- 4698

c/o: Mr. Steven Boswell, Laura Krohn, and Nick Russillon

VIA E-MAIL: steven.boswell@pyramidglobal.com:
laura.krohn@pyramidglobal.com:
nick.russillon@pyramidglobal.com

SUBJECT: Flamingo Resort & Spa Court Reuse Permit for Pickleball, Santa Rosa, CA – Environmental Noise Mitigation with JMC Lighting Sound Blocking Curtains

Dear Ms. Sheikhali,

This letter is to support the attached study conducted on our Acoustic Sound Barrier Curtains and presented to the City of Walnut Creek, CA, as it pertains to reducing the decibel (dB), to within the City Code, 55 db, during the outlined daytime hours, when attached to Courts 1 & 2 at the Flamingo Resort & Spa. See Exhibit A attached for the area of demarcation closest to the property line where decimal number reading was higher than city code regulates, pre- installation of our Acoustic Sound Barrier Curtains.

The updated narrative and supplied documents presented to the City of Santa Rosa via email to Monet Skeikhali, regarding the Flamingo Resort & Spa's application for a new Minor Use Permit included the JMC Lighting study that is also posted on their website at Pickle Noise Block (jmclightingllc.com) and included here for ease reference.

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations

nearest residential land uses. An 11.1.-foot high noise barrier, constructed at the northern boundary of the pickleball courts is calculated to provide approximately 15 dBA noise reduction at the nearest residential land use (the receptor's ear height is assumed to be 5-feet above ground to represent a person standing in their backyard) resulting in mitigated noise levels of 70 to 55 dBA Leq. Operational noise levels assuming the attenuation provided by the 11.1-foot high noise barrier would comply with the Santa Rosa City Code noise limit of 55 dBA Leq.

Conclusion

The operation of the proposed pickleball courts would generate noise levels exceeding the Santa Rosa City Code noise limits and ambient noise conditions at the nearest sensitive receptors. The incorporation of noise barriers ranging from 11.1-feet in height to protect residential would reduce noise levels below the standards established by the Santa Rosa City Code.

Sincerely yours,

Joshua M. Conlin
Owner
JMC Lighting, LLC


Sound Measurements (10/14/2023)
41-48
42-56
41-68
55-70
Montecito Heights
Health Club

To: Walnut Creek PROS Commission

From: Eric Benson
Tony Parisi

Re: Sound Measurements and Play Days at Rudgear Park

Executive Summary:

1. Using Pickleball Sound Mitigation, LLC's recommended and calibrated sound meter, decibel readings were recorded at locations around the pickleball courts and tennis courts and throughout the neighborhood and it can be concluded that the sound absorbing acoustical panels remove on average 16 - 20 dbA's from the sound of pickleball play at the source with a decibel reduction range of 10 dBA's to 22 dBA's.

2. The actual measured sound levels with pickleball play differ very little from background park noise levels that were measured on February 26th and March 1, 2023 when no pickleball play was in session at the Stewart Ave Tennis Courts.

3. The Pickleball Sound Mitigation LLC Sound Assessment and Recommendations Report prepared by Dale H. Van Scoyk of Pickleball Sound Mitigation LLC of March 3, 2023 is corroborated by this sound measurement study.

Background:

On Friday March 31 and Saturday April 1st sound mitigation curtains were hung on the west and south facing fences of the Stewart Avenue Tennis Courts. These Nine foot, by three foot, by one inch thick panels weighed approximately 40 pounds covered the entire two sides of the tennis court fence.

Eight temporary pickleball courts with nets were created on the tennis courts with 4 on the north side of the tennis nets and 4 on the south side of the tennis nets. Courts were oriented side by side beginning 10 feet from the west facing fence. Players staged themselves for next to play outside of the north fence closest to the baseball field where the sign-in board was located. Players entered the courts through the gate nearest the bathroom and exited the courts at the opposite end.

Number of Players: Sunday play began at 10:00 am and concluded at 1:00 PM. During this 3 hour window there were 94 players that signed in and played games. There were typically 20 –30 players waiting to play and all eight courts will fully utilized. There were 84 players on Monday over the 5 hours of open play (8:00 am - 1:00 pm). At any given time there were roughly 4-10 players waiting in queue to play. Like Sunday, all 8 courts were in full use throughout the 5 hours.

Parking: Players parked in the parking lot and along the park side of the street along Dapplegray Lane and Stewart Avenue. At no time were cars park on the neighbor side of either street. On Sunday the parking lot was full and parking overflowed along Stewart Ave and around the corner onto Dapplegray. On Monday, with slightly less players spread over longer hours of play there were always a few open parking paces in the lot while others parked along the park street side. Art Oller commented during his site visit that the parking lot looked like a normal weekday and both he and Kevin Will thought the parking was tolerable and acceptable and to be expected for a busy park. Art said he played in the men's softball league here often and when they play here, the number of cars in the lot and on the street is similar to what we had during the play days.

Sound Readings and Measurements:

This report represents a summary of measurements taken on Feb 26th, March 1st, April 2nd and April 3rd, 2023 to measure both background park noise as well as sound from pickleball play. The purpose was to record and report the noise effects of pickleball play at various locations around the proposed Stewart Ave tennis courts.

The following equipment and certifications were used.

A SPER sound instrument model 840018C, serial number 098769 as recommended by Bob Unitech of Pickleball Sound Mitigation https://pickleballsound.com/ was used to take all sound measurements. This instrument was set and used in LaF mode as recommended in such applications https://www.nti-audio.com/en/support/know-how/what-are-laeq-and-lafmax

As this instrument is a display only instrument (no substantial memory) an iphone in video mode was used to record the ambient noises, as well as the video of the instrument in real time. The complete video files have been uploaded to a cloud account and are available at the following address: https://www.icloud.com/sharedalbum/#B0s5Uzl7VachIl. Every effort has been taken to objectively evaluate the measurements, but it should be disclosed Eric is a member of the WCPC.

On Feb 26th and March 1st, sound measurements were taken at various locations at street level on Stewart Ave, as well as on the tennis courts, and in the parking lot to determine the ambient sound level without pickleball play. Care was taken to exclude readings (passing cars, loud motorcycle) that might be distorted by unusual, non-standard sources. The meter is designed to update readings twice per second and measure maximum sound pressure with A weighting, simulating the human ear response, also known a dBA.

The following average ambient (background) readings were recorded and reported in the Pickleball Sound Solutions Report to the city dated March 3, 2023.

Ambient Sound Readings with no Pickleball Play (and no sound barriers)

	Stewart Ave Street Level	Tennis Courts	Parking Lot
Average dBA	50.4	48.9	51.8
dBA Range	39.1 - 59.3	45.2 - 54.6	46.2 - 59.4

The average ambient dBA range of 48.9 - 51.8 dBA (measured with no pickleball play) measured on Feb 26th at the tennis courts, parking lot and Stewart Ave in front of the tennis courts is extremely consistent with quiet suburban areas throughout the US which typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60+ dBA range.

	Loc A - Inside Tennis Courts	Loc B - Stewart Ave Street in front of tennis courts	Loc C - Upper Cul-de-Sac	Loc D - 2nd Closest Home to Tennis Courts (159 Feet)	Loc E - Closest Home to Tennis Courts (99 Feet)
dBA Sound - No Pickleball Play	45 - 55	45 - 47	52 - 54	45 - 47	45 - 47

On March 1, 2023 an additionally series of ambient (background) sound measurements with no pickleball play were taken at locations inside the tennis courts and on the sidewalk in front of neighbor homes in and around Kenton Court cul-de-sac as noted in the map below (see locations A,B,C,D, & E). These sound readings are reported in the table below (the video file for these readings are included in the cloud account referenced above).

Location A - Inside Stewart Ave Tennis Courts
Location B - On sidewalk in front of 2117 Kenton Court
Location C - On the sidewalk in-between homes 2213 & 2209 Kenton Court
Location D - On the sidewalk at the 2nd Closest Home to Tennis Court (2201 Kenton Court - 159 Feet away)
Location E - On the street immediately in front of the driveway of the closest Home to Tennis Courts (2182 Stewart Avenue - 99 Feet Away)

It should be noted that the sound readings spiked to 70+ dBA when a car or motorcycle passed by and 55+ dBA if people were talking

On Sunday, April 2nd and Monday April 3rd Eric Benson once again using the sound measurement equipment noted above set to the same measurement specifications recorded the following sound readings while pickleball play occurred. Eight courts were in use and 32 players were playing with anywhere from 4-30 people were waiting to play. The south and west facing fences of the tennis courts were wrapped with sound mitigating panels.

Result of pickleball play: Pickleball sound measured on April 1st and 2nd during the play days was approximately 2 dBA's louder than ambient sound as measured on Feb 26th and Mar 1st (without any pickleball play)

Sound Reading with Pickleball Play With Sound Mitigating Barriers

	Loc A - Inside Tennis Courts	Loc B - Stewart Ave Street in front of tennis courts	Loc C - Upper Cul-de-Sac	Loc D - 2nd Closest Home to Tennis Courts (159 Feet)	Loc E - Closest Home to Tennis Courts (99 Feet)
dBA Range With Sound Curtains	65 - 68	47 - 49	47 - 52	48 - 50	47 - 49

Location A - Inside the Tennis Courts: Sound readings taken while Pickleball was being played averaged about 65-68 dbA as measured on Apr 2nd & 3rd.

Location B - On sidewalk in front of 2117 Kenton Court Stewart. Sound readings taken while Pickleball was being played measured 47 - 49 dbA on Play Days and 45 - 47 dbA on Feb 26th/Mar 1st. This is ~20dbA lower sound levels than inside the courts.

Location C - On the sidewalk in-between homes 2213 & 2209 Kenton Court. Sound readings taken while Pickleball was being played measured 47 - 52 dBA on Play Days and 52 - 54 dBA on 26th/Mar 1st. This is a reduction of ~16dbA from sound levels inside the courts at location A.

Location D - On the sidewalk at the 2nd Closest Home to Tennis Court (2201 Kenton Court - 159 Feet away): Sound readings taken while Pickleball was being played measured 48 - 50 dBA on Play Days and and 45-47 dBA on 26th/Mar 1st. This is a reduction of ~20dbA from sound levels at location A (This location compares to the "Pink Line" on the PSM report).

Location E - On the street immediately in front of the driveway of the closest Home to Tennis Courts (2182 Stewart Avenue - 99 Feet Away): Sound readings taken while Pickleball was being played measured 47-49 dBA on Play Days and 45 - 47 dBA on 26th/Mar 1st. This is a reduction of ~19dbA from sound levels inside the courts at Location A. (This Location compares to the "Green Line" on the PSM report)

General Conclusion:
It can be concluded the sound absorbing acoustical panels remove on average 16 - 20 dbA's from the sound of pickleball play at the source with a decibel reduction range of 10 dBA's to 22 dBA's. The ambient park background noise was measured at approximately 49-52 dBA. Thirty Two players (32)

utilizing 8 courts generated sound averaging 47 - 52 dBA. The Play Days substantiated the summary and detail findings by Pickleball Sound Solutions, LLC that with sound mitigating panels the predictive sound will result in noise levels that now meet the governmental guidelines. Plus, in their experience, the sound levels are “NOT LIKELY” to create noise complaints from neighbors.

Respectively submitted,

Eric Benson
Ebenson01@gmail.com
209-988-0400

Tony Parisi
Tonyparisi9@gmail.com
925-895-4376

JMC Lighting, LLC

JMCLighting LLC is a reputable and reliable lighting company that has been providing high-quality lighting solutions to various businesses and organizations since its inception. Our company is committed to providing our clients with superior lighting products that are not only energy-efficient but also cost-effective.

Company Profile

At JMCLighting LLC, we are always looking for ways to innovate and improve our product offerings to meet the ever-changing needs of our clients. That is why we are excited to introduce our new product, sound-blocking curtains for pickleball courts.



These curtains are designed to block sound from traveling outside the court, providing a more comfortable playing experience for players and reducing noise pollution in surrounding areas. The curtains are made of high-quality materials that are durable and long-lasting, making them an excellent investment for any pickleball court.


In addition to our new sound-blocking curtains, we offer a wide range of lighting products, including LED high bay lights, parking lot lights, street lights, and more. All of our products are designed to provide energy-efficient lighting solutions that help our clients save money on their energy bills while also reducing their carbon footprint.

At JMCLighting LLC, we are committed to providing exceptional customer service to all of our clients. Our team of experienced professionals is always ready to assist with any questions or concerns you may have about our products or services. Contact us today to learn more about our sound-blocking curtains and how they can benefit your pickleball court.

Acoustic Sound Barrier Curtains

Our Acoustic Sound Barrier Curtains are designed to reduce noise pollution in industrial, commercial, and residential settings. The curtains are made of high-quality sound-absorbing materials that block and absorb sound waves, making them perfect for use in areas where noise reduction is required.

Product name	Acoustic Noise Reduction
Brand	JMC Lighting LLC
Material	PVC coated mesh tarpaulin, sound insulation felt, and sound insulation wool,Non-woven fabric,PVC net,Velcro, Auminum/galvanized /stainless steel eyelet
Weight	7kg/square meter
Thickness	2.5cm. The tarpaulin thickness is 0.45mm 560gsm
Color	Blue, white, gray, black, orange, green and customized
Warranty:	6-9 years
Features:	Noise reduction,noise control, Eco-friendly, waterproof/flame-retardant
Application:	Construction site,school,bar, supermarket,music room, recording room, cinema, railway,road noise barrier, etc

Key Features:

- High-quality sound-absorbing materials
- Blocks and absorbs sound waves
- Easy to install and remove
- Durable and long-lasting
- Fire-resistant
- Available in a variety of sizes and colors
- Technical Specifications:

Sound Absorption Coefficient

Our Acoustic Sound Barrier Curtains have a high sound absorption coefficient of up to 0.8. This means that they can absorb up to 80% of the sound waves that come into contact with them.

Fire Resistance

Our curtains are made of fire-resistant materials that meet industry standards. They have been tested and certified to be flame retardant to reduce the risk of fire accidents.

Size and Colors

Our curtains come in a variety of sizes and colors to suit your needs. They can be custom made to fit any space and can be easily installed using our hanging system.

Durability

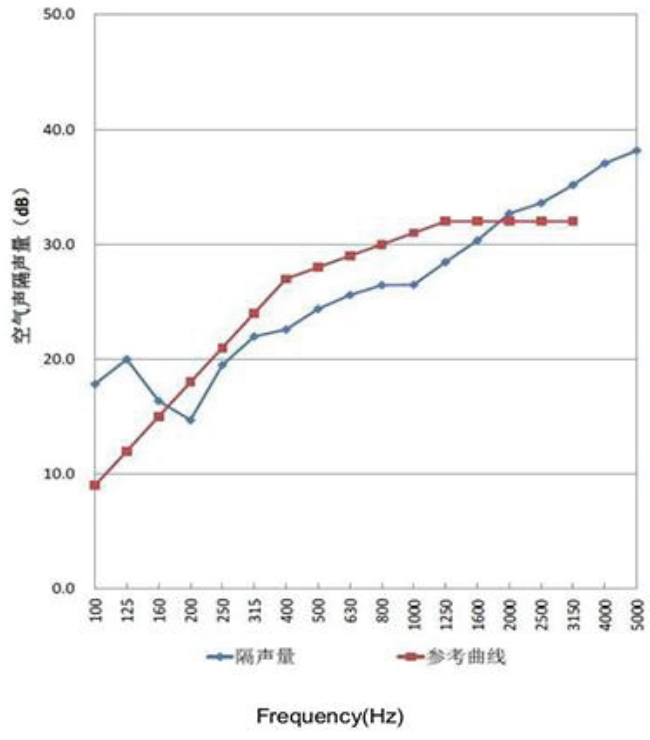
Our Acoustic Sound Barrier Curtains are made of high-quality materials that are designed to last for years. They are resistant to wear and tear, water, and UV radiation, making them suitable for use in harsh environments.

IV. Test Results

Specifications	PVC SOUND BARRIER, with an area of 6.2m², is installed in the opening of sound insulation laboratory and is sealed with 500mm thick composite sound insulation wall around it. (Composite wall sound insulation Rw = 65dB).
Test project	Airborne Sound Insulation

Test results

f（Hz）	R（dB）
100	17.8
125	**20**
160	16.4
200	14.7
250	**19.5**
315	22
400	22.6
500	**24.4**
630	25.6
800	26.4
1000	**26.5**
1250	28.5
1600	30.3
2000	**32.7**
2500	33.6
3150	35.2
4000	**37.1**
5000	38.2
Rw(C;Ctr)	**28 (-1;-4)**



Installation

Our curtains can be easily installed using our hanging system. The curtains come with grommets, hooks, and other hardware needed for installation. They can be easily removed and reinstalled as needed.

Applications

Our Acoustic Sound Barrier Curtains are ideal for use in a variety of applications, including:

Industrial settings: factories, warehouses, and workshops
Commercial settings: offices, conference rooms, and restaurants
Residential settings: bedrooms, home theaters, and recording studios

Conclusion

Our Acoustic Sound Barrier Curtains are an effective and affordable solution for reducing noise pollution in any environment. They are easy to install, durable, and available in a variety of sizes and colors. Contact us today to learn more about how our curtains can help you reduce noise levels in your space.

TEST REPORT

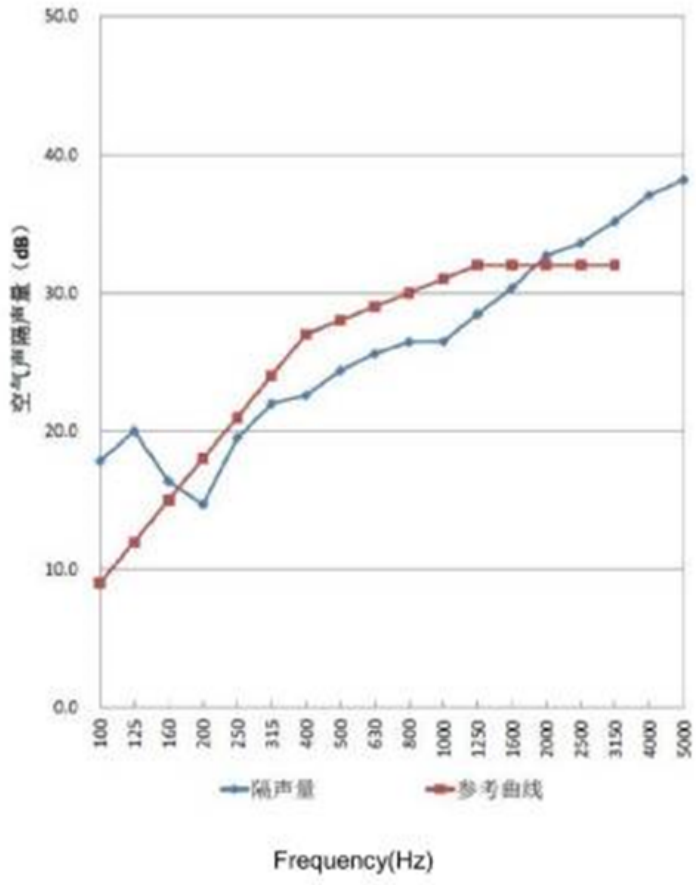
IV. Test Results

Specifications	PVC SOUND BARRIER, with an area of 6.2m², is installed in the opening of sound insulation laboratory and is sealed with 500mm thick composite sound insulation wall around it. (Composite wall sound insulation Rw = 65dB).
Test project	Airborne Sound Insulation

Test results

f（Hz）	R（dB）
100	17.8
125	**20**
160	16.4
200	14.7
250	**19.5**
315	22
400	22.6
500	**24.4**
630	25.6
800	26.4
1000	**26.5**
1250	28.5
1600	30.3
2000	**32.7**
2500	33.6
3150	35.2
4000	**37.1**
5000	38.2
Rw(C;Ctr)	**28 (-1;-4)**

Frequency Characteristic Curve of Air Acoustic Insulation



Now we are ready to use the numbers for comparison purposes. Here are some points of reference from the website, https://noiseawarness.org:

0 dBA – The softest sound a person can hear with normal hearing

10 dBA – normal breathing

20 dBA – whispering at 5 feet

30 dBA – soft whisper

40 dBA – quiet residential area on a calm day

50 dBA – steady rainfall

60 dBA – normal conversation

70 dBA – freeway traffic

85 dBA – noisy restaurant

90 dBA – shouted conversation

100 dBA – nearby snowmobile

110 dBA – shouting into an ear

120 dBA – nearby thunder

As you know, at some level our hearing can be damaged. It is recommended that we avoid extended periods of exposure to levels above 80 dBa. Above 90 dBa is considered dangerous according to the Occupational Safety and Health Association (OSHA) standards. Loud music fans beware!

Frequent pickleball sounds are typically about 70 dBa at about 100 feet away from the strike of the ball. Residents in homes located in a quiet residential area, that are within 100 feet from pickleball courts are used to noise levels of 40 dBa, therefore the level of pickleball noise is 30 decibels louder. And, remember, each time you increase a sound level by 10 decibels, it will sound twice as loud. So, an increase of 30

decibels is (10dB+10dB+10dB) or 2x as loud x 2x as loud x 2x as loud, or 8 times as loud. That's a significant increase in loudness. Would that be annoying? Probably.

Making sound level measurements requires calibrated accurate equipment. Do not rely upon sound level apps downloaded to your phone, except for simple relative readings. A good sound level meter, like the Sper840015, costs about $500 with calibration and it needs to have its calibration checked yearly or so.

So, what can you do?

What can be done to reduce complaints? First of all, courts that are expected to get lots of use should not be located close to homes! When we increase the distance to homes, things get better. Doubling the distance drops sound levels by 6 decibels in open areas and even more when there are obstructions to sound propagation, like hills and shrubs. Barriers can help as well. A 10 ft high wall can provide about 10 decibels of reduction, cutting the perceived sound level in half. Higher barriers help even more.

Using the quietest balls and paddles available can cut the sound as much as 10 more decibels or in half again, but many players will resist using other gear. Restricting play hours can also help reduce complaints.

Barriers can be absorbing or reflecting. Sound reflecting barriers, like that known as Acoustifence, are less expensive, but they will send pickleball sound back towards the courts or perhaps towards other homes. Absorbing barriers, like the sound blankets made by eNoise Control, are thicker, heavier and more expensive but they may be the best choice in some cases.

The reality is that most residential neighborhoods have background sound levels, known as ambient noise, close to 50 dBa. If all homes are 200 or more feet away from courts, the expected sound level will be about 64 dBa. If a sound barrier and quieter balls and paddles are used, we soon approach the typical sound level of average neighborhoods, under 50 dBa. To do more is difficult since sound will travel over a sound barrier. The solution to that problem might be a roof, basically making the courts an indoor facility and adding greatly to the cost, and an unrealistic option.

Determining what sound level is acceptable is not simple. Local ordinances can be consulted and sometimes this will set the specific sound level limits that apply, but other times an ordinance will simply state that any repetitive sound must not be “annoying”, and becomes a difficult goal to achieve. Sound level predictions and neighbor tolerance predictions must be part of designing a pickleball facility.

Summary:

Pickleball sound levels within 100 feet of courts will usually be around 70 dBa with no sound reduction efforts applied. This is as loud as freeway traffic sound.

At 200 feet, (using the 6 dB drop for doubling the distance) the level will be about 64 dBa. That’s louder than normal conversation.

At 400 feet it will be about 58 dBa. That’s quieter than normal conversation levels. By limiting use of paddles and ball brands based on sound testing, you can achieve below 50 dBa, and usually below local background level at that distance.

Adding a 10 ft. high barrier can drop that to below 40 dBa, a level below normal library sound levels.

Even at 100 feet, with consideration for equipment and sound barriers, the level could be about 52 dBa, and may be an acceptable sound level in many neighborhoods. This means that barriers and distance are the most effective tools. It also means that sound levels can be predicted in advance of having complaints, so consider your location and work with your pickleball community to make the sport a welcome addition to your neighborhood.

I hope the above will be helpful to those of you with current or potential sound problems. I am available to help with making sound levels estimates so send me an email if you have questions and I invite you to join the Facebook group Pickleball Noise (Mitigation) for much more pickleball sound information.