



**PSM LLC**  
Pickleball Sound  
Mitigation

**Pickleball Sound Assessment Report with Recommendations**  
**For Brooks CDD and Brooks II CDD**  
**PLAYGROUND ADDENDUM**

by  
**Dale H. Van Scoyk**  
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I. Overview of the Playground Area

Pickleball Sound Mitigation LLC has been requested to analyze the effects of pickleball play on individuals in the playground area due to sound coming from the closest court in the planned Phase I expansion.



It is assumed there will be a sound curtain barrier on the fence between the court and the playground; however, we researched what the maximum sound pressure levels would be:

- Without a barrier,
- With a 10 ft high barrier, and
- With a 12 ft high barrier.

Recall that the **Village of Estero limits maximum sound levels to 76 dBA** from 7:00 a.m. to 10:00 p.m., after correcting +10 dB for impulse sound characteristics.

## II. Predicted Sound Levels with Multiple Barrier Heights

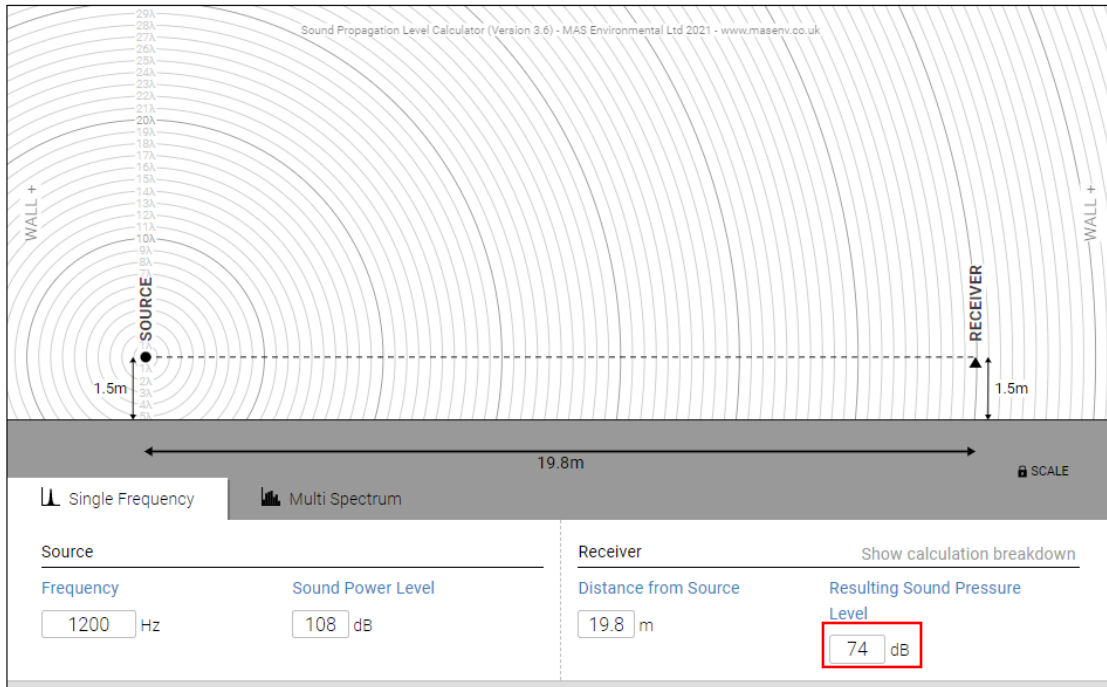
### Assumptions:

- The maximum sound power of a hit is 108 dB
- The frequency at the loudest hit is 1200 Hz
- The height of both the source (pickleball strikes) and receiver are 5 ft (**1,5m**)
- The source point is the intersection of the center line and non-volley zone line
- The receiver point is the center of the playground area
- The distance from source to fence is 18 ft (**5,6m**)
- The distance from source to the receiver is 65 ft (**19,8m**)

**Without a sound barrier, the Predicted Sound Pressure at the Playground due to the pickleball play at the proposed new court is 74.0 dB.**

### Sound Propagation Level Calculator

[Interactive noise source-to-receiver diagram with barrier calculations](#)



**With a 10 ft (3,0m) sound barrier, the predicted Sound Pressure Level at the Playground due to pickleball play at the proposed new court is 57.5 dB.**

Sound Propagation Level Calculator

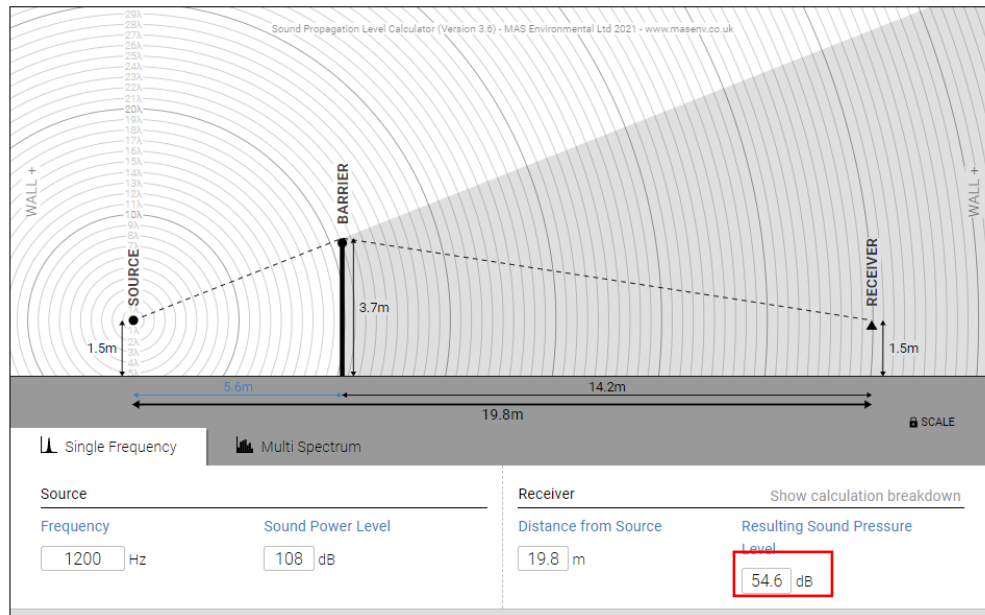
Interactive noise source-to-receiver diagram with barrier calculations



**With a 12 ft (3,7m) sound barrier, the predicted Sound Pressure Level at the Playground due to pickleball play at the proposed new court is 54.6 dB.**

Sound Propagation Level Calculator

Interactive noise source-to-receiver diagram with barrier calculations



## Summary Table of Predicted Sound Levels and Limits

| Receiver Location | Ordinance Limit dBA | Common Residential Goal | Without Barrier dBA | With 10 ft Barrier dBA | With 12 ft Barrier dBA |
|-------------------|---------------------|-------------------------|---------------------|------------------------|------------------------|
| Condominium       | 76.0                | 50.0                    | 49.1                |                        |                        |
| Enrichment Center | 76.0                | 50.0                    | 65.6                | 50.4                   | 47.5                   |
| Gazebo            | 76.0                | 50.0                    | 61.1                | 47.3                   |                        |
| Gazebo            | 76.0                | 50.0                    | 74.0                | 57.5                   | 54.6                   |

As shown, without a barrier the sound levels will be uncomfortably close to the limits established by the Village. With a 10 ft or 12 ft barrier, as planned, the levels are within Noise Ordinance limits, but not quite to levels one would strive for in a residential or “indoor” environment.

There are two other factors we suggest considering:

1. The ambient (background) noise level at the Enrichment Center, next to the Playground, without the fountain running measured average maximum of **73.4 dBA**. With the fountain running, the average maximum reading was **76.6**. The ambient readings from the restroom area on the other side of the playground was **74.5 dBA**.
  - It’s already relatively noisy at the playground due to nearby traffic, as high or higher than the contribution of sound from the new pickleball courts.
  - When the fountain is on, it drowns out the pickleball sounds and practically everything else.
2. THIS IS A PLAYGROUND!
  - One expects noise from children playing...it’s probably a source of noise, if kids are there playing.
  - At play areas, noise can add to excitement, so it is more of a benefit than a burden.

### III. Conclusions and Recommendations

Attention has now been focused on four areas:

- The residential Condominium building in Spring Run,
- The Enrichment Center in The Commons area,
- The Gazebo in The Commons area,
- The Playground area.

Two factors are important:

- Compliance with applicable noise ordinances,
- Acceptance of sound levels by “reasonable persons with normal sensitivities.”

With the recommended changes in the original Report, all areas are in compliance with Village of Estero noise ordinances, including the playground area.

In addition, the existing ambient noise levels, the opportunities for noise masking with the fountain, the nature of a playground as a sound source, versus an area of concern for noise all lead us to conclude “reasonable persons with normal sensitivities” will not be troubled by pickleball play on the other side of the barrier between the courts and the playground.

***There are no recommended changes related to this location.***



## I. Author's Credentials

Dale Van Scoyk is a graduate of Purdue University, awarded a BS degree in Electrical Engineering. He has MBA training from Arizona State University.

He has over 25 years experience with industrial equipment design and manufacturing. He has written white papers and delivered presentations for the Institute of Electrical & Electronic Engineers (IEEE) on electromagnetic noise measurement and suppression, as well as light wave spectrum analysis, perceived light pollution and LED light technology topics.

Dale is a resident of Bonita Springs, FL and a year-round pickleball competitor in Wisconsin and Florida. He is a USA Pickleball Certified Referee, an Ambassador and a PPR Certified Pickleball Instructor. He has worked with multiple municipalities, communities and residential owners in California, the Midwest and Florida on new installations and tennis court conversions for use as pickleball courts in residential areas, where noise abatement techniques were required.

## II. Disclaimer

*The sound levels in this report are as measured or they are estimates of what levels should be expected. Actual levels will vary over time, and they are player and equipment dependent. Sound level is probabilistic, meaning that it has averages and other statistical characteristics including standard deviations and sound level probability distribution curves, but pickleball sound level has no exact single level.*

*This report makes no guarantee of performance of the sound mitigation methods described. In addition, it is not possible to determine what any person believes is an acceptable sound level. The measurements and estimates of background sound levels are also probabilistic in nature; these levels will vary from one neighborhood to another and from one measurement method to another over time.*

*Our recommendations for sound barrier types assume that the site will have proper structural support, designed by others. This should include an analysis of the wind loading limitations of fences and a plan to protect installed sound barriers from flood water.*