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Pickleball

Emerson Fisher <emerson.g.fisher@gmail.com> Sat, Sep 6, 2025 at 1:12 PM
To: Angoleana Torres <planning@cityofgearhart.com>

Is it possible to share this article electronically with all the members of the planning, as well as to Chad and Garett. I think it is interesting background information re size of pickleball courts v tennis courts as well as the popularity of each. The article is from The NY Times.

https://www.nytimes.com/interactive/2025/09/01/upshot/pickleball.html?smid=nytcore-ios-share&referringSource=articleShare

Sent from my iPad

TheUpshot

How Pickleball Took Over Thousands of Tennis Courts, as Seen From the Sky

By Ethan Singer
The reporter grew up playing tennis. He's played pickleball only three times but plans to get back out there again soon.

Sept. 1, 2025

In 2022, the Santa Monica Tennis Center in Southern California had a lone tennis court. Today, that court is gone.

2022

In its place are four pickleball courts, attached to what is now called the Santa Monica Pickleball Center.

In 2019, Cincinnati's Sawyer Point Park had eight worn-down tennis courts.

2019

Today, the park has 24 pickleball courts, six of which are drawn atop the three tennis courts that remain.

The lost tennis courts at the Santa Monica Pickleball Center and Sawyer Point Park are hardly alone.

Novato, Calif.	Mobile, Ala.	Titusville, Fla.	Brenham, Texas	Ronkonkoma, N.Y.	Runnemede, N.J.	DeLand, Fla.	Brooklyn
Long Beach, Calif.	Milton, Ill.	Upper Arlington, Ohio	Oakland, Maine	Austin, Texas	Euclid, Ohio	Blue Springs, Mo.	Concord,
Glendale, Ariz.	Marblehead, Mass.	San Antonio	Plattsburgh, N.Y.	Gold River, Calif.	Bay City, Mich.	Mount Pleasant, S.C.	Miami Be
Haverford, Pa.	East Lake, Fla.	Onondaga, N.Y.	Bakersfield, Calif.	Detroit	New Haven, W.Va.	Rockville, Md.	Marietta,

They are among the thousands of tennis courts identified by The New York Times that have given way to — or now share space with — pickleball.

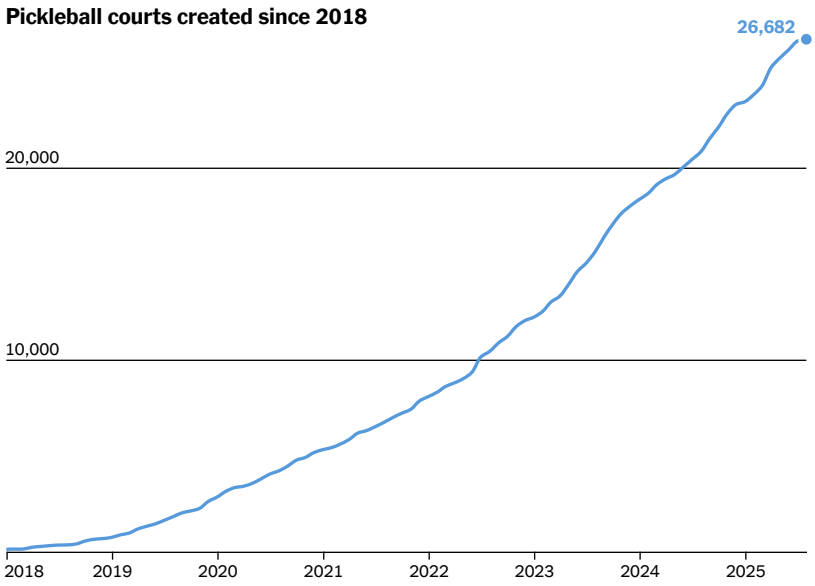
Naples, Fla. Warr Acres, Okla. Hot Springs, Ark. Milton, Ga. Hilton Head Island, S.C. Santa Barbara, Calif. Bristol, Tenn. Mobridge

with — pickleball.

Aerial photography provided by Vexcel.

By analyzing nearly 100,000 aerial photographs, we were able to identify more than 26,000 outdoor pickleball courts made in the last seven years — a majority of them at the expense of once-exclusive tennis spaces and created since the onset of the pandemic in 2020. In total, we found more than 8,000 tennis courts that had been transformed for pickleball.

By 2024, 14 pickleball courts were being built or drawn each day, on average, across the country.



Our analysis is not comprehensive: By trade group estimates, there are more than 270,000 tennis courts — and now 68,000 pickleball courts — in the United States, including indoor courts that we were not able to track. But the photographs are an expansive, bird's-eye view of what has been happening on the ground in all corners of the country: There's only so much ready asphalt to go around, and pickleball can't get enough of it.

'As many courts as possible'

Jon Neeter, the owner of the Santa Monica Pickleball Center, said his former tennis business had been doing very well for a single court with a pro shop. A lifelong tennis player and coach, he wanted his shop to be a home away from home for regular clients. "That was one of the things that made it really tough to take that plunge to go all in" on pickleball, he said.

By 2024, just a year after the pickleball conversion, Mr. Neeter said the business was bringing in seven times as much revenue as it ever did as a tennis-only shop.

One explanation is basic geometry. Using the same square footage, Mr. Neeter can now host four times as many people, across four times as many classes and events. He can schedule different programs simultaneously, like a children's camp on one court and a competitive drill on another, or lessons at two different skill levels.

“When I had a single court, if I had one person in a class that didn’t fit, I couldn’t bump them over to another court where maybe everybody would feel more comfortable,” he said. He’s also now hosting corporate events for big companies, and has seen a big boost in retail sales.

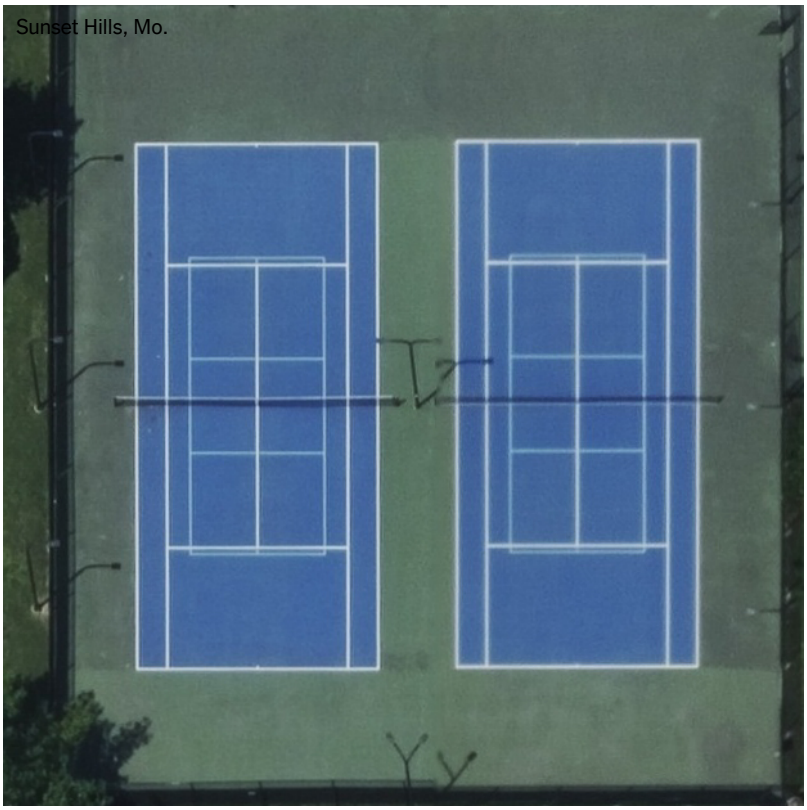
The conversions have been successful at many public spaces, too. At Sawyer Point Park, more than 150 people a day play pickleball during group sessions. And the swarm of visitors has prompted more upgrades across the park, including at a neighboring ice rink and amphitheater.

Alex Mouton in Cayce, S.C. Nora Williams for The New York Times

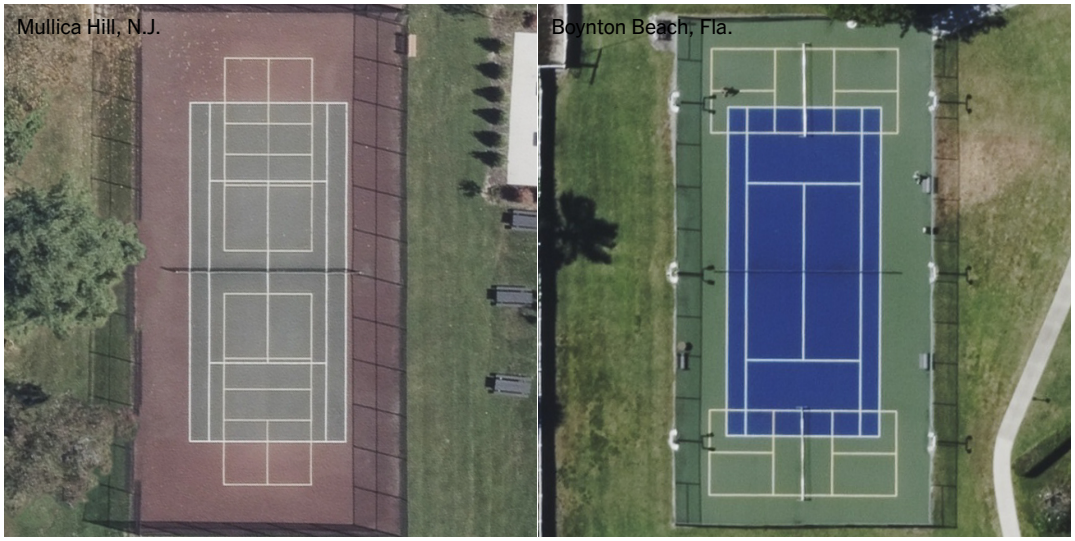
Alex Mouton, the facility coordinator and head instructor at the Cayce Pickleball Complex in South Carolina, said “the amount of traffic coming in and out” had changed the area for the better since the conversion of four tennis courts into 16 bright blue pickleball courts. The complex has hosted five amateur and professional tournaments since the opening of the new courts in March, bringing in revenue for local hotels and businesses, she said.

Not every new pickleball court rises from the ashes of a tennis court, however. Many, like six of the 24 at Sawyer Point, are hybrid courts, where the smaller pickleball outlines overlap with larger tennis borders.

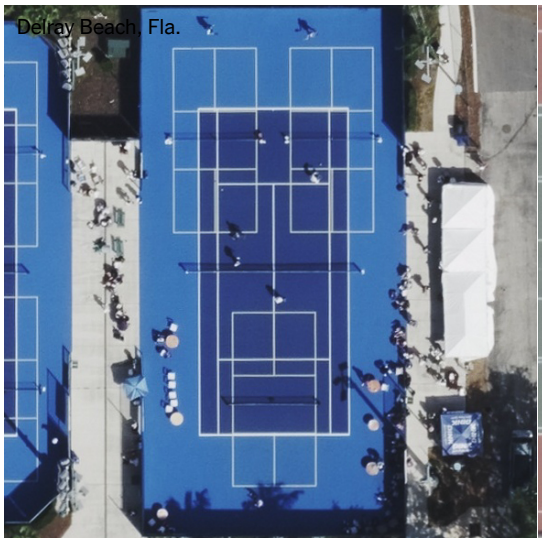
The most common approach, our analysis showed, is to overlay a single pickleball court in the middle of the tennis court, where they share a net (officially, the pickleball net is supposed to be slightly shorter than tennis’s):



But there are far more variations available. A pickleball court is 20 feet wide and 44 feet long — just under a third of the size of a tennis court, even less if you count the out-of-bounds running space afforded to tennis courts. That means there are multiple ways to draw two pickleball courts on a tennis court:



Or three …



Or even four …

(Four is the most we saw crammed into one tennis court.)

One thing common to all these arrangements: At no point can tennis and pickleball players play at the same time.

The United States Tennis Association, unsurprisingly, wants to avoid losing court space to pickleball.

Ted Loehrke, managing director of section partnerships, said the U.S.T.A. relies on relationships across its 17 regions to boost the sport locally. It monitors things like town hall agendas for mentions of tennis and pickleball, then makes sure “somebody is there to speak up on behalf of tennis.”

An email from a U.S.T.A. regional officer in 2022 provided guidance for a coming City Council meeting by saying, “The point must be made that one court given to pickleball temporarily is just the beginning of pickleball’s attempt to take over as many courts as possible.”

Tensions between tennis and pickleball have eased in the last year or so, Mr. Loehrke said, as stand-alone pickleball courts have become more popular. Indeed, our analysis found that the number of new pickleball courts created atop tennis courts declined for the first time last year, even as the number of new stand-alone courts — and pickleball courts overall — continued to rise.

These new courts are frequently built on land near tennis facilities, like open fields of grass or dirt, or parking lots:

Eagle, Idaho	East Norriton, Pa.	Beaufort, S.C.	Orlando, Fla.
Pell City, Ala.	Oconomowoc, Wis.	Boca Raton, Fla.	Lima, Pa.
Lancaster, Ohio	Middletown-Odessa, Del.	Fort Pierce, Fla.	North Plains, Ore.
American Fork, Utah	Pike Creek-Central Kirkwood, Del.	Bolton, Conn.	Crystal River, Fla.
Washington	Palmer Lake, Colo.	Pineville, W.Va.	Austin, Texas

Building new courts isn't cheap. Rich Gallagher, chief executive of the Y.M.C.A. of the Sunbelt, which has two branches in southwestern Georgia, said his organization spent about $150,000 on resurfacing to convert four tennis courts to 12 pickleball courts. He said brand-new courts would have cost roughly $1 million.

But they may be increasingly preferable even to hybrid courts. "A pickleballer wants just their lines," Mr. Gallagher said. "A tennis player just wants their lines."

At Jaquith Park in Newberg, Ore., the parks and recreation district is building several new stand-alone pickleball courts after an experiment with hybrids. Nick Konen, a director for the parks district, said that "for the longevity of pickleball and tennis, there does need to be some separation."

Two of the park's hybrid courts are even returning to tennis only.

Mr. Konen, who was previously on the town's pickleball advisory committee, said he's feeling pressure from his pickleball-loving constituents to get the new courts done (they helped propel him to his board seat). "The pickleball community, now that I've been elected, they are wanting to see results," he said, "which I totally understand, but they're really hounding me."

'There's an addiction to it'

When asked if there's a risk he might regret switching his business from tennis to pickleball, Mr. Neeter said there was a "zero percent chance" that it's a temporary fad. It's weaving into "the fabric of people's lives," he said. "It's their social circles. It's like everything. There's an addiction to it."

Jon Neeter at the Major League Pickleball Finals in New York City. DeSean McClinton-Holland for The New York Times

Gary Lessis, a Cincinnati resident and volunteer who had pushed for the city to replace Sawyer Point Park's tennis courts, said, "When we first started back in 2020, it was primarily 70-year-olds" playing pickleball. Today, he said, the fastest-growing segment is players 20 to 35.

Census numbers back that up to an extent. In the areas where our analysis shows new pickleball courts over time, there's a clear trend: The neighborhoods with new courts are getting younger, less suburban, less wealthy.

Characteristics of places where new pickleball courts were built ...

	IN 2019	**IN 2024**
Median income above $100k	45%	**36%**
Majority of residents 65 or older	18%	**7%**
In a coastal state	67%	**53%**
Rural	13%	**28%**
Suburban	71%	**53%**
Urban	16%	**20%**

Kim Mills, an associate director of the Bainbridge Family Y.M.C.A. in southwestern Georgia, said her small town used to have a bowling alley and a movie theater, both of which are now closed.

After the Y.M.C.A.'s pickleball court conversions, she said, "people immediately started coming and playing — especially the young people." She said the sport is more social than tennis. "You can hear them laughing and talking."

The old tennis courts, she said, had fallen into disrepair. Mr. Lessis said the same of Sawyer Point Park. In many of the aerial photographs, you can see cracks marring the tennis courts.

None of this means that tennis is a dying sport. According to research by the U.S.T.A., tennis participation has seen a boost since the pandemic, though not as propulsive as pickleball's. But even tennis die-hards acknowledge there's more the sport can do to be welcoming.

"If tennis players aren't using the courts, then they have no one to blame but themselves," said Tanner DeVarennes, director of operations at the Hartford Tennis Club in Connecticut. The club has no intention of converting any of its 12 green clay tennis courts to pickleball.

Instead, Mr. DeVarennes said, the club has marketed more to younger families and has upgraded its court sign-up system from a chalkboard to online, in a bid to modernize.

At the U.S. Open this year, the U.S.T.A. is showcasing a play format called red ball tennis, a fast-paced, more social version of tennis that's also more beginner-friendly. "We recognize that not everybody wants to play competitively," said Liz McSorley, managing director of strategy and innovation. "There are large segments of the population who are tennis curious and need an easy and gentler entry into the sport."

The sport, developed in collaboration with research firms, is optimized for doubles. It uses shorter rackets and slower balls, and is best played on smaller courts — like pickleball courts.

See more new pickleball courts around the country, and what was there before:

Show me more courts

Methodology

To track pickleball and tennis courts across the country, we started with a set of more than 12,000 locations with pickleball courts based on aggregated data from Pickleheads, the official court listing partner of USA Pickleball, and Open Street Map. We then obtained

historical aerial images of each of these locations from the imagery and mapping company Vexcel.

We used computer vision tools to identify the precise locations of courts in each image, and whether they were pickleball or tennis courts (or hybrids). We primarily relied on "oriented bounding box detection," a machine-learning technique, and manually annotated a training set of courts. We then used template matching to verify the outputs of the model.

Finally, court locations were compared with each location's historical imagery to identify new and changing courts over time.

Additional work by Irineo Cabreros.

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Pickleball

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Tue, Sep 9, 2025 at 4:36 PM

Actually…on second thought…:-)

I found this document helpful in conjunction with Garrett's memorandum.

https://www.nonoise.org/regulation/Pickleball%20Model%20Noise%20Ordinance.pdf

Here is the link to the organization that created it, the Noise Pollution Clearinghouse:

https://www.nonoise.org/index.htm

Thanks, Angoleana.

Eric

> On Sep 9, 2025, at 4:18 PM, Angoleana Torres <planning@cityofgearhart.com> wrote:
>
> [Quoted text hidden]

Model Noise Ordinance for Pickleball

September 26, 2024
Prepared by the Noise Pollution Clearinghouse
Using the U.S. EPA Model Noise Ordinance as a Basis

Executive Summary

This paper presents model language for noise ordinances and zoning regulations. The language is both general in scope and also specific to pickleball courts. This language will allow communities to protect the health and well-being of neighbors. Adoption of the model language should enable pickleball to occur in places that will not adversely impact neighbors.

While the model language provides a number of tools to regulate pickleball noise, from decibel levels to plainly audible to time of day requirements, the primary and easiest method to protect the health and well-being of neighbors is to adopt a setback from dwellings of 800 feet.

The recommended decibel limits and distances selected are based on the mean and mode decibel levels found in noise regulations in the United States based on research by the US EPA and the Noise Pollution Clearinghouse.

Introduction

Pickleball is an increasingly popular sport that, while leading to healthier individuals, can also harm the health and well-being of neighbors if poorly sited. Moreover, poor pickleball court siting is increasingly causing conflict and controversy in communities. These conflicts are entirely unnecessary and due primarily to poor zoning and noise regulations that do not address the very frequent, unique, impulsive acoustical properties of the ball hitting the paddle. Consequently, pickleball courts are being sited in locations that are sure to cause strong community reaction, controversy, and conflict. **Siting a pickleball court without proper planning is the functional equivalent of planning to create noise problems and community conflicts**.

These problems can easily be prevented, however, with proper noise ordinances and zoning regulations. This paper presents model language for noise ordinances and zoning regulations to address and prevent these problems and conflicts. The results can also be used as design guidelines for siting pickleball courts within planned communities.

The paper is organized into four parts.

- Part I describes our noise regulatory philosophy.
- Part II familiarizes the reader to the parts of a noise ordinance.
- Part III recommends specific ordinance language that can be adopted, and explains the rationale for that language.
- Part IV presents considerations for inclusion into zoning regulations.

I. Regulatory Philosophy—Utilize as many Regulatory Tools as Possible

Preventing noise pollution and conflicts resulting from noise in a community requires well written noise ordinances and zoning regulations. Moreover, those regulations must be easily enforced by a number of different individuals and entities, from noise control officers, police officers, zoning administrators, and zoning staff. A further complication is that these people will have different levels of training and experience, and some will have little or no training in noise enforcement.

Fortunately, there are many noise regulatory tools available to communities. These regulatory tools include:

1. Decibel levels
2. Setbacks from residential uses
3. Time of day restrictions
4. Day of week restrictions
5. Plainly audible restrictions
6. Prohibitions in residential zones

Each of these regulatory tools have unique considerations, advantages, and disadvantages. Together they provide a comprehensive approach to regulating noise pollution. Consequently, communities should adopt noise regulations that utilize as many regulatory tools as possible, and make sure they utilize several that are easy to enforce.

When people think of a noise ordinance they often think of a decibel standard. While a good decibel standard will prevent most pickleball noise problems in a community, decibel standards are actually among the least utilized and most difficult to enforce noise regulatory tools. The most effective and least costly regulatory tool to address pickleball noise involves distance setbacks from residential land uses. This provides an easy to understand and enforce objective criteria. Since noise decreases by about 6 decibels for each doubling of the distance from a noise source, distance can be used as a surrogate for decibel levels in noise regulations, with the distance chosen to achieve an approximate decibel level.

Time of day and day of week regulations also provide objective criteria that are easy to understand and enforce.

Finally, neighbors should not have to listen to others' noise within their own homes. Noise problems are exasperated when neighbors cannot escape the noise by retreating inside their own homes. If there is no peace in one's home, there will not be peace in the community. Consequently, the plainly audible standard should also be included in the regulatory tools employed.

II. Parts of a Noise Ordinance

The following sets out a general framework for a noise ordinance. In general, provisions in noise ordinances and zoning regulations can be nearly the same, with the exceptions that zoning regulations contain provisions that pertain directly to zoning such as permitted and conditional uses. The special considerations for zoning regulations are presented in Part IV.

Noise ordinances generally have the following structure:

1. Purpose or Intent
2. Definitions
3. General Prohibitions
4. Specific Prohibitions
5. Exemptions
6. Motor Vehicles
7. Penalties
8. Severability

Occasionally sections are omitted, but generally, a good noise ordinance will have all these sections, although they may call them something different. The next part of this paper focuses on *the General Prohibitions* and *Specific Prohibitions* needed to address pickleball noise.

III. Recommended Noise Regulatory Tools

Within a noise ordinance there are multiple regulatory tools that can apply to pickleball. Recommended language for both *General Prohibitions* and *Specific Prohibitions* sections of a noise ordinance are given below, along with the rationale and explanation for them.

A. General Prohibitions

1. Noise Disturbances Prohibited
No person shall unreasonably make, continue, or cause to be made, or continued, any sound which (a) endangers or injures the safety or health of humans or animals; or (b) annoys or disturbs a reasonable person of normal sensitivities; or (c) endangers or injures personal or real property.

2. Maximum Permissible Sound Pressure Levels
No person shall operate or cause to be operated on private property any source of sound in such a manner as to create a sound level which exceeds the limits set forth for the receiving land use category in Table 1 when measured at or within the property boundary of the receiving land use.

TABLE 1
SOUND LEVELS BY RECEIVING LAND USE

Receiving Land Use Category	Time	Sound Level Limit dBA Fast Lmax	dBC Fast Lmax
Residential and Public Space	8 a.m. to 6 p.m.	55	65
	6 p.m. to 8 a.m.	50	60
Commercial	8 a.m. to 6 p.m.	60	65
	6 p.m. to 8 a.m.	55	60
Industrial	All times	65	70

3. Correction for Character of Sound
For any source of sound which emits a pure tone or impulsive sound, the maximum sound level limits set forth in Section 2. shall be reduced by 5 dBA and 5 dBC respectively.

4. Maximum Increase in Interior Sound Pressure Levels
No person shall operate or cause to be operated on private property any source of sound in such a manner as to create a sound level which intrudes upon the interior of a residence or dwelling unit such that it raises the background sound level by more than 3 dBC when measured within the residential property.

Rationale and Explanation for the General Prohibitions Recommendations

Provision 1, Noise Disturbance Prohibited, is straight out of the EPA Model Noise Ordinance, with one minor modification, which is that the prohibition of noise disturbances and the definition of noise disturbances were combined.

Provision 2, Maximum Permissible Sound Pressure Levels, is modified from the EPA Model Noise Ordinance to include dBC (to capture low frequency noise). Also, times and decibel levels were specified. *Communities are free to select other times and levels.* According to EPA and Noise Pollution Clearinghouse research, 55 dBA during the day and 50 dBA at night are the most common noise levels specified in the noise ordinances for urban residential receivers.[1] If you have a quiet suburban community, those numbers could be reduced by 3-5 dBA. Also, EPA data show that typical permitted noise levels in commercial and industrial areas are approximately 5 and 10 decibels higher than the residential levels.

[1] See the EPA Model Noise Ordinance in the Appendix.

The phrase “dBA Fast Lmax” (also sometimes specified as LAFmax) is critical because it specifies how to measure the noise. Each term designates a setting on the sound level meter that should be used. The “dB” stands for decibel. “A” designates A-weighting which gives different weight or value to different frequencies. A-weighting was designed to mimic human hearing at quiet noise levels. There is also C-weighting which better matches our response to somewhat louder sounds and can be used to regulate low frequency noise.

“Fast” or “Fast Response” refers to the time a noise is evaluated by the meter. Fast utilizes 1/8 second time periods. The other common setting on sound level meters is “Slow,” which utilizes 1 second periods and also utilizes other adjustments that were meant to “slow down” the rapidly bouncing needle on old analog sound level meters to make them easier to read). “Slow” is no longer needed as digital sound level meters have solved the problem of a rapidly moving needle by eliminating it and storing the instantaneous noise levels. “Fast” is preferred because, of the common sound level meter settings, it is the one that best matches our ear’s response to loudness. That said, while it is better than “Slow,” it is still less than ideal when dealing with impulsive noise. See Provision 3 below.

“Lmax” refers to the maximum level recorded by the meter during a specific time. Combined with the other terms, the phrase “55 dBA Fast Lmax” means the maximum 1/8 second sound pressure level using A-weighting should not exceed 55 decibels.

The 55 (daytime)/50 (evening and nighttime) dBA levels were chosen because they are the most common level used for **urban residential neighborhoods** in the United States. Suburban and rural residential areas, or quiet urban residential areas should consider lowering the permitted level by 3-5 dBA.

The selection of hours varies from community to community, but generally evening and nighttime hours deserve more protection to ensure outdoor activities in a yard, deck, or porch are not impacted, and to ensure that indoor activities like sleep are not impacted. Some communities have specific daytime, specific evening, and specific nighttime periods with permitted levels getting progressively lower.

A good general noise performance standard as described above will prevent most but not all conflicts related to pickleball noise, particularly when combined with the impulsive noise correction described in Provision 3 below. The problem with decibel levels is that measuring them is expensive for communities and requires training and equipment that police officers often do not have. For that reason, most communities choose to use other regulatory tools first. Decibel level standards are generally the regulatory tool of last resort for communities that utilize them. Communities generally rely on specific prohibitions to implement easier to enforce provisions of noise ordinances (see below).

While communities may opt to exclude a decibel level from their noise ordinance, or to use it only if other provisions cannot be used, a decibel level provision should be included in all zoning regulations. It provides developers needed design criteria.

Provision 3, Correction for Character of Sound, is from the EPA Model Noise Ordinance. The Model does not specify the decibel level, but either 5 or 10 decibels are justifiable.

Impulsive noise is more problematic than continuous noise as it draws human and animal attention. Research has consistently shown that impulsive noise is more annoying than continuous noise at the same decibel level. The incorporation of corrections for noise that is more problematic is very common in noise regulations, with the most common ones being a correction for nighttime noise, impulsive noise, and tonal noise. Often, the night time noise correction is incorporated as a specific nighttime noise standard as is the case above, but it can also be incorporated as a specific decibel correction during certain nighttime and evening hours.

A second reason for the correction factor is that the Fast response understates noise levels of impulsive noise. As mentioned above, "Fast Lmax" utilizes 1/8 second periods of time to measure noise. For impulsive noise with durations of less than 1/8 of a second, such as pickleball noise, the Fast setting understates noise levels and averages in quieter times. Still on a common sound level meter, it is the best setting available.

Typical pickleball noise is inherently impulsive. It has an exceedingly fast onset and short duration.[2] It would certainly qualify for an impulsive correction.

Provision 4, Maximum Increase in Interior Sound Pressure Levels, utilizes "C" weighting. Because home walls are much better at reducing higher frequency noise than low frequency noise, more often than not, noise heard within a home has had the higher frequencies "filtered out" by the walls. Consequently, a metric such as "C" Weighting is required to measure the remaining low frequency noise. A 3 dB or greater increase in the background means that the source of the noise must be equal to or greater than the existing levels inside the home.[3]

Related Definitions for the General Prohibitions Recommendations

"NOISE DISTURBANCE" MEANS
Any sound which (a) endangers or injures the safety or health of humans or animals; or (b) annoys or disturbs a reasonable person of normal sensitivities; or (c) endangers or injures personal or real property. (US EPA Model Noise Ordinance)

"dBA Fast Lmax" MEANS
The A-Weighted sound pressure level in decibels as measured on a sound level meter using the A-weighting network and Fast response setting. The level so read is designated dB(A) or dBA.

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[2] See Barry Wyeman and Robert Unetich, *Piclkleball 101*, Noise-Con 2023.

[3] One of the implications of the logarithmic decibel scale is that two equal loudness sources, when combined, are 3 dB louder. Using "decibel math," 50 dB plus 50 dB equals 53 dB, not 100 dB. So working backwards, a 3 dB increase means that the noise sources were the same level.

“dBC Fast Lmax” MEANS
The C-Weighted sound pressure level in decibels as measured on a sound level meter using the C-weighting network and Fast response setting. The level so read is designated dB(C) or dBC .

"IMPULSIVE SOUND" MEANS
Sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include explosions, drop forge impacts, and discharge of firearms. (US EPA Model Noise Ordinance)

“PURE TONE” MEANS
Any sound which can be distinctly heard as a single pitch or set of single pitches. For the purpose of this ordinance, a pure tone shall exist if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure level of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hz and above and by 8 dB for center frequencies between 160 and 400 Hz and by 15 dB for center frequencies less than 125 Hz. (US EPA Model Noise Ordinance)

Note: Some communities define daytime and evening/nighttime hours in the definitions section. Others do it in the body of the ordinance.

B. Specific Prohibitions

The following shall apply to all pickleball courts.

1. Setback from Residential Dwellings.
No outdoor pickleball court shall be located or used within 800 feet of a residential dwelling or from residentially zoned land.

2. Not Plainly Audible inside a Residential Dwelling.
The sound from the use of outdoor pickleball courts shall not be plainly audible within a residential dwelling.

3. Evening and Nighttime use of Pickleball Courts Prohibited.
Use of outdoor pickleball courts less than 1,200 feet from a residential dwelling shall be prohibited after 7 p.m. or before 9 a.m. on Mondays –Saturdays, and after 5 p.m. or before noon on Sundays and Federal Holidays.

Rationale and Explanation for the Specific Prohibitions Recommendations
These Specific Prohibitions utilize objective criteria such as distance, time of day, and day of week, to regulate pickleball noise.

Provision 1, Setback from Residential Dwellings, is designed to substitute a distance for a decibel level. Because noise decreases with distance by 6 dB for each doubling of the distance, the setback can be adjusted to approximate a decibel level. See the table below for setbacks based on specific decibel levels in a noise ordinance.[4] For example, a 800 foot setback provides approximately the same protection as a 50 dBA Fast Lmax standard (which is the combination of General Provision 2 and 3 above), but it does so without the need for a sound level meter.

Decibel Limit in Ordinance	Equivalent Setback Distance
60 dBA	250 Feet
55 dBA	450 Feet
50 dBA	800 Feet
45 dBA	1,400 Feet

In some cases it is possible to mitigate noise levels by as much as 10 dBA by installing barriers immediately next to the courts. Theoretically, this could allow for smaller setbacks. Barriers, however, have no impact if neighbors have a direct line of sight to the court, such as a second or third floor window overlooking the court. Also, barriers require maintenance and upkeep to provide mitigation over time. It is unlikely barriers will be effective over the lifetime of the court. Moreover, to properly design and install an effective barrier requires noise expertise. Consequently, it is not recommended that communities reduce setbacks by relying on barriers other than full enclosures to mitigate pickleball noise, or if they do, that they are fully committed to utilizing the decibel standard over the lifetime of the court to protect neighbors.

Similarly, in some cases quieter paddles and balls can mitigate noise levels. Until they are universally adopted, however, they will not change the maximum noise level experienced by neighbors if louder equipment is also used. Consequently, quieter paddles and balls do not currently impact the distances necessary to achieve those levels presented in the table above.

Provision 2, Not Plainly Audible inside a Residential Dwelling, will ensure that pickleball noise will not intrude on people's homes.

Provision 3, Evening and Nighttime use of Pickleball Courts Prohibited, utilizes a longer setback distance of 1,200 feet. Essentially, courts more than 1,200 feet from a residential dwelling do not have any limitations on the hours of operation because they should be able to meet the nighttime noise standards from General Provisions 2 and 3 of 45 dBA. Technically, the 6 dBA per doubling of the distance rule would support a 1,400 foot distance as shown in the

[4] The distances were calculated using the following formula:

$$r_2 = r_1 \cdot 10^{\left(\frac{|L_1 - L_2|}{20}\right)}$$

Where r_2 is the Equivalent Setback Distance, r_1 is 100 feet, L_1 is 68 dBA, and L_2 is the Decibel Limit in Ordinance. The value of 68 dBA Fast Lmax for the maximum noise from pickleball at 100 feet was selected from studies of pickleball noise that found a maximum of 71.9 dBA Fast Lmax, so the formula somewhat understates the maximum value, and consequently the corresponding distances in the table. See footnote 2.

table above, but other factors that impact noise transmission generally make it possible to reduce that distance somewhat.

Related definitions for the Specific Prohibitions Recommendations

"PLAINLY AUDIBLE" MEANS
Any sound that can be detected by a person using his or her unaided hearing faculties. As an example, if the sound source under investigation is a portable or personal vehicular sound amplification or reproduction device, the enforcement officer need not determine the title of a song, specific words, or the artist performing the song. The detection of the rhythmic base component of the music is sufficient to constitute a plainly audible sound.

"RESIDENTIAL DWELLING" MEANS
A structure used for human habitation including, but not limited to residential or commercial property used for human habitation.

"OUTDOOR PICKLEBALL COURT" MEANS
A temporary or permanent surface used to play pickleball.

IV. Zoning Considerations

General Provisions 2, 3, and 4 can be incorporated directly into zoning regulations and are pretty standard. They provide good general guidance for developers. But the most important provision that pertains directly to pickleball is Specific Prohibition 1, the 800 foot setback from dwelling units, and it should be included in zoning regulations.

Moreover, since pickleball is not a compatible use with nearby residential uses, and since one of the primary reasons for planning and zoning is to avoid non-compatible uses and conflicts within a community, pickleball should never be a *permitted use* in a residential zone or a zone that permits residential uses. Rather, pickleball courts should be a *conditional use* if they meet the General and Specific Prohibitions above.

V. For More Information

Communities and Homeowner Associations are free to copy and use the above provisions and text within their laws and regulations. For more information or questions about community noise regulations in general or pickleball nose regulations in particular, contact the Noise Pollution Clearinghouse at npc@nonoise.org. The EPA Model Noise Ordinance can be found at https://www.nonoise.org/epa/Roll2/roll2doc7.pdf. State and local noise regulations within the United States can be found at https://www.nonoise.org/regulation/index.htm.