

# TOLLWAY NOISEWALLS

## DETERMINING THE NEED FOR A NOISEWALL

The Illinois Tollway assesses noise abatement feasibility and reasonableness to determine if abatement will reduce noise, is constructible and cost effective.

- 1 The Federal Highway Administration's Traffic Noise Model is used to determine current and future noise levels. This model has been proven to be highly accurate in determining current noise levels, along with future noise levels that include a built condition with future traffic volumes.
- 2 The model is verified by conducting field monitoring to ensure the modeled current noise levels are in line with those that were monitored.
- 3 If anticipated noise levels in the future condition exceed those defined in the Tollway's Traffic Noise Study and Abatement Policy, a noise abatement analysis is conducted to determine if noise abatement is found to meet Tollway policy criteria.

The ability to effectively reduce traffic noise, the density of receptors, the distance from the roadway and overall cost effectiveness are among many factors considered when determining if a noisewall is feasible and reasonable at locations where noise levels are predicted to exceed those defined in the Tollway's policy.

## PUBLIC INPUT ON NOISEWALLS

The Tollway will work closely with local communities to ensure that reasonable design requests are considered as part of any project plans.

Other options may also be discussed to help reduce traffic noise. Some alternatives that might be considered by private developers, communities or homeowners include:

- » Land use design – if homes are set back from the road or are separated from the road by other development, the noise levels may be lower
- » Noise berm (earthen or other materials) and combination berm/wall systems

# NOISEWALLS FOR THE CENTRAL TRI-STATE PROJECT

As part of the Central Tri-State Tollway (I-294) Project, the Tollway will replace all existing noisewalls within the project corridor at similar lengths and heights. New noisewalls will be constructed, per recommendations provided within the project noise analysis. Noisewall design and locations are scheduled to be finalized by early 2019.

## WHY THERE IS A BREAK OR GAP IN NOISEWALLS

Noisewalls may be constructed in a way to allow for maintenance access, stormwater drainage or because there is a building or undeveloped land that does not warrant noise abatement. Sufficient overlap or length in abatement is provided to allow for noise reduction in areas behind the breaks or gaps.

## DETERMINING THE HEIGHT OF A NOISEWALL

One size does not fit all needs. The height of a noisewall may vary based on location and topography. The reasonableness criterion places a practical limitation on the height of any noisewall. On the Central Tri-State corridor, ground-mounted noisewalls will not exceed 25 feet in height and noisewalls on structures will not exceed 18 feet for constructibility reasons.

## PURPOSE OF A NOISEWALL

Noisewalls are designed to provide a reduction in traffic noise for the majority of the first row of residences located directly behind the wall. The design goal for a noisewall is an 8-decibel reduction.

## TYPES OF NOISEWALL MATERIALS

Noisewall materials can include earthen berm, concrete, wood and masonry block. Earthen berms are effective in reducing traffic noise, but a lack of available right-of-way usually makes noisewalls the most practical solution.



# FREQUENTLY ASKED QUESTIONS

## WHAT IS AN IMPACTED LOCATION?

Any sensitive outdoor human-use activity area that is predicted to have a design year traffic noise level of 67 decibels (weighted for human hearing) or greater is considered an impacted location. Federal regulators chose 67 decibels as the impact threshold because research has shown that above this level when two people stand three feet apart and speak at a normal volume, hearing becomes impaired.

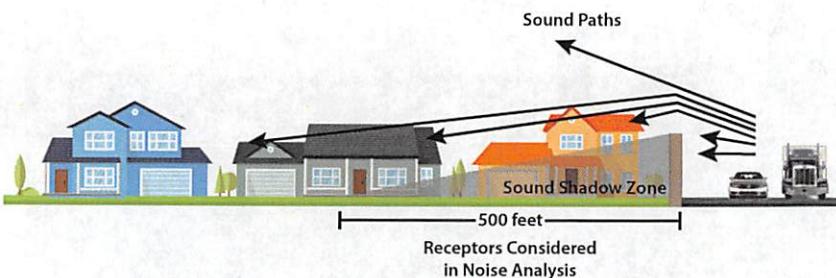
## WHAT DOES FEASIBLE AND REASONABLE MEAN?

Feasible refers to whether the barrier can provide a substantial reduction in noise and is constructible. Reasonable refers to the maximum barrier square footage or cost per residence benefiting from the noise mitigation.

## ARE NOISEWALLS EFFECTIVE?

Noisewalls do not completely eliminate all noise. Noise abatement is less effective if the noise source can still be seen. If a building is located higher than a noisewall, the noise will flow over the wall to the building.

The Illinois Tollway's noise abatement is only intended to provide noise reduction for first floor units within 500 feet of the edge of Tollway pavement and not multi-story buildings.



# QUESTIONS ABOUT NOISEWALLS

There are many ways to reduce noise. Noisewalls are one tool, but highway design, pavement type and berms can help reduce noise, as well. Each new road or modification of an existing road that adds capacity must be examined individually to determine if a noisewall is warranted and feasible at an impacted location.

Once the technical evaluation is complete, the Tollway also considers the following:

- » Will a noisewall reduce the noise enough to justify its construction? In some cases, a noisewall will not reduce the noise enough to be considered feasible and/or reasonable.
- » Is a noisewall technically feasible? Every road is different, many factors are considered such as topography, safety, drainage, utilities and maintenance of the wall.
- » How many people will benefit from a noisewall? Is that number high enough to justify the cost? Sometimes, the cost is too high to build a wall when compared to the benefits received.
- » Available alternatives to noisewalls

## GET MORE NOISEWALL INFORMATION

The Illinois Tollway's Traffic Noise Study and Abatement Policy addresses guidelines and procedures for initiating traffic noise studies and considering traffic noise abatement. The policy first establishes the eligibility requirements for a traffic noise study. The policy then establishes the requirements for considering the construction of traffic noise abatement structures and when traffic noise abatement is feasible and reasonable.

The traffic noise analysis guidance provided in this policy is based largely on the regulatory material found in Title 23 Code of Federal Regulations Part 772 (23 CFR Part 772) titled "Procedures for Abatement of Highway Traffic Noise and Construction Noise."

To view this and other Tollway policies, visit [www.illinoistollway.com/about/regulations-rules-policies](http://www.illinoistollway.com/about/regulations-rules-policies)



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