

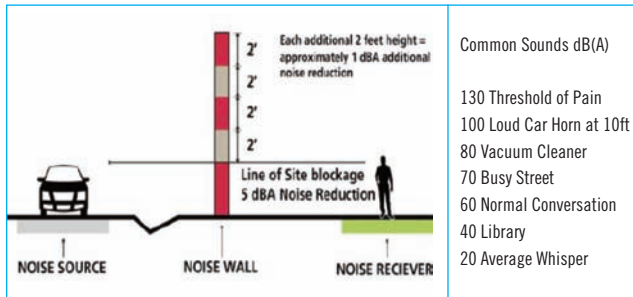


### What is a Noise Wall?

Noise walls are the structures often built along highways to reduce overall noise levels generated by traffic.

### How does a Noise Wall work?

A textured, concrete noise wall reduces the noise heard in a community by absorbing, reflecting and changing the noise path. The noise wall must block the Line-of-Sight between the noise source and the community. Noise walls provide minimal benefit to hillside residences or buildings taller than the noise wall. A noise wall provides an approximate 5 dB(A)\* reduction (Line-of-Sight) to the community. An additional 1dB(A) reduction is possible for every 2 feet of additional noise wall above the Line-of-Sight.



### How are changes in noise perceived?

The average person's response to noise level changes:

- 3 dB(A): barely detectible
- 5 dB(A): readily noticeable
- 10 dB(A): "twice as loud" or "half as loud"

### How is highway noise assessed?

A highway noise computer model is calibrated using noise data measured along the proposed highway project. The computer model analyzes and predicts noise levels for future conditions based on the loudest hour of the day.

\* dB(A): A-weighted filter used to replicate the response of the human ear.

### Why does the Metropolitan Washington Airports Authority have a Dulles Toll Road Noise Policy?

In November 2008, we assumed responsibility of the Dulles Toll Road from the Virginia Department of Transportation. The Toll Road Noise Policy establishes assessment criteria for existing and future highway noise levels. The Toll Road Noise Policy complies with the Virginia Department of Transportation and federal guidelines. A federally approved Noise Policy is required to receive federal funding for future Toll Road projects.

### Why do we evaluate existing Toll Road noise walls?

Evaluations are needed to determine if existing noise walls are structurally intact and effectively reduce Toll Road noise.

### What process do we use to decide the locations of new Toll Road noise walls?

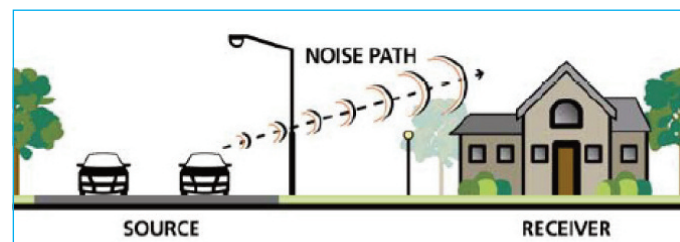
After adopting the Toll Road Noise Policy and calibrating the highway noise computer model with existing Toll Road noise levels, we conducted a noise mitigation evaluation for existing and future Toll Road noise conditions. Using the Toll Road Noise Policy criteria:

- Step 1: Is there a noise **Impact**?
- Step 2: Is the solution **Feasible**?
- Step 3: Is the solution **Reasonable**?

### STEP 1: What criteria do we use to determine a Toll Road Impact?

Impacted areas experience noise equal to, or greater than, the following average noise level during the loudest hour worst-case scenario as determined by the highway noise computer model :

- 66 dB(A): Residences, Places of Worship, Schools Hospitals, Parks and Trails.
- 71 dB(A): Hotels



### STEP 2: What criteria do we use to determine Toll Road noise wall Feasibility?

Noise wall feasibility is assessed using the following criteria:

- Noise levels are reduced by 5 dB(A) for at least 50% of impacted properties.
- Property is accessible for noise wall construction and maintenance.
- Non-highway noise sources do not reduce or limit the effectiveness of the proposed noise wall.

### STEP 3: What criteria do we use to determine Toll Road noise wall Reasonableness?

A noise wall is considered reasonable if the maximum area of the noise wall per Benefited Receptor is not greater than 1,600 square feet or taller than 30 feet. A Benefited Receptor is a property that experiences noise levels of 66 dB(A) or higher based on the highway computer noise model.

#### Example of Reasonableness Calculation:

- Proposed noise wall:  
1,000 feet long x 15 feet tall
- Benefited Receptors: 16
- Square Feet (SF) per Benefited Receptors (BR):  
15,000 SF / 16 BR = 937 SF/BR



### Noise Wall Information and References:

- [www.mwaa.com/tollroad/toll.htm](http://www.mwaa.com/tollroad/toll.htm)
- [www.mwaa.com/tollroad/3063.htm](http://www.mwaa.com/tollroad/3063.htm)
- [http://virginiadot.org/projects/resources/soundwalls\\_brochure.pdf](http://virginiadot.org/projects/resources/soundwalls_brochure.pdf)
- [www.virginiadot.org/projects/resources/noisewalls/About.pdf](http://www.virginiadot.org/projects/resources/noisewalls/About.pdf)
- [www.virginiadot.org/projects/resources/noisewalls/Did\\_you\\_know.pdf](http://www.virginiadot.org/projects/resources/noisewalls/Did_you_know.pdf)



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# Dulles Toll Road Noise Wall Program

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*We are committed to  
working with every community  
located along the  
Dulles Toll Road.*



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*frequently asked questions*

