I-70 Environmental Assessment: I-435 to I-470

# Noise Factsheet

Fall 2024

## Project Overview

The Missouri Department of Transportation (MoDOT) has initiated the Environmental Assessment (EA) for Interstate 70 (I-70) between I-435 and I-470 in Kansas City and Independence, Missouri. This critical east-west corridor serves as a major artery for freight movement throughout the region.

## Noise Study

As part of the I-70 EA (I-435 to I-470), a traffic noise study is being completed. The traffic noise study will follow noise regulations defined by the Federal Highway Administration (FHWA) and MoDOT's statewide traffic noise policy.

### Noise Study Process

A noise evaluation is typically a two-step process: 1) identifying noise impacts, and 2) evaluating noise abatement strategies at those impacted locations. Noise evaluations occur on specific types of projects, generally when capacity may be added to a roadway, like I-70. The evaluation involves measuring and modeling noise levels accounting for terrain, traffic type and volume, and distance to adjacent properties. The results are compared to federal and state regulations for considering unwanted sound to be an impact - generally set at an average of 66 decibels (dB) or greater for residences (Figure 1). Conducting this type of evaluation helps an agency like MoDOT determine whether traffic sounds exceed the noise impact threshold and noise abatement should be evaluated.

### Identifying Noise Impacts

A detailed software model is used to assess existing traffic noise and predict future noise levels throughout the study area. Field measurements are taken to validate the model. Noise levels are considered an impact to residences if either:

- Future noise levels are predicted to average 66 decibels or louder during the loudest hour of the day.
- The project is predicted to increase noise levels by 15 decibels or more.

If either is true, then noise abatement measures will be evaluated for impacted locations.

**Figure 1**

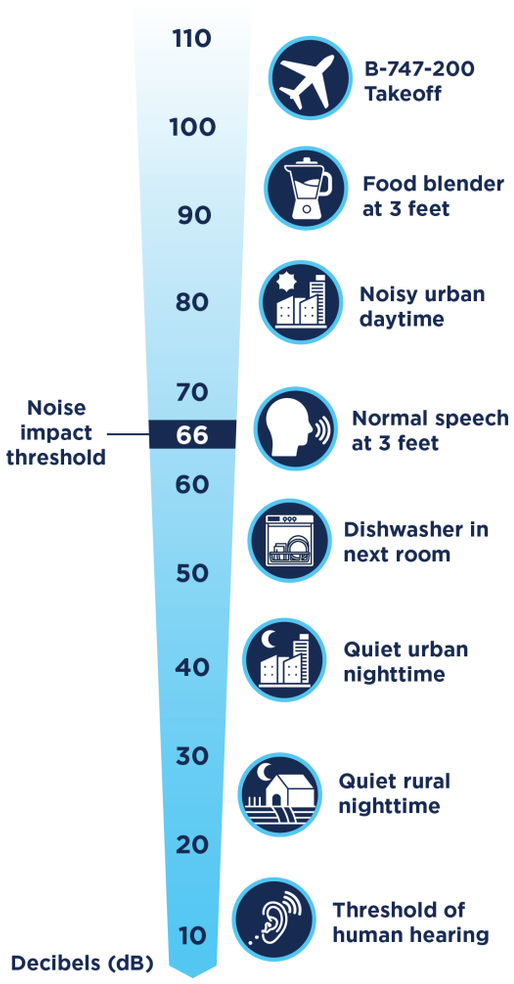
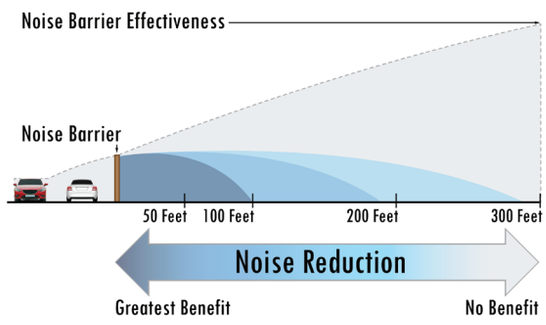
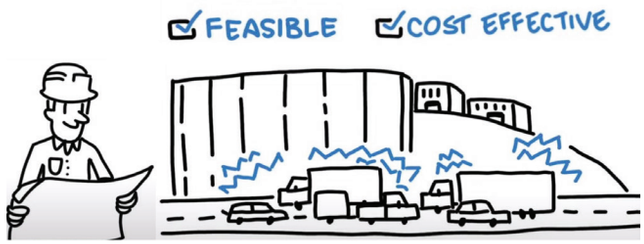



**Figure 2**



## Evaluating Noise Abatement Strategies

Noise abatement strategies will be evaluated where noise impacts are identified. The most commonly used solution are noise walls, but other techniques include earthen berms, traffic management and using undeveloped property as a buffer. Noise abatement strategies must be feasible and reasonable in order to be recommended for construction with a project.




*Noise abatement strategies are considered feasible if:*

- They are physically constructible without significantly impacting maintenance, safety, drainage, etc.
- They reduce noise by at least 5 decibels for two (2) or more impacted first-row receptors.

### What Is A Benefited Receptor?

A benefited receptor is a property that receives at least a 7 decibel (dB) reduction in noise levels from the noise walls.

*Noise abatement strategies, such as noise walls, are considered reasonable if:*

- The size of the noise wall is less than 1,300 square feet per benefited receptor.
- The noise walls are desired by the benefited property owners and residents. This is determined by:
  - Engaging with property owners and tenants to share evaluation results; and then
  - Conducting a vote of benefited receptors to determine if they want the proposed noise wall.

# Frequently Asked Questions

***How are Benefited Receptors identified?***

A detailed Federal Highway Administration (FHWA) noise model is used to analyze and optimize different noise wall designs at locations within about 500 feet of I-70. The model assumes that the noise receptor faces the highway at about five feet from the exterior wall of each home. A receptor is considered benefited when at least a 7 decibel reduction is predicted to occur from noise abatement with the future roadway configuration and traffic levels.

***What time of day do you do the noise modeling?***

The noise modeling always considers the loudest hour of the day. This usually occurs when traffic is high but still traveling at near free-flow speeds. On a corridor like I-70, this is often just prior to or after the AM and PM rush.

## Project Contact Information

For more information, please visit the project website **www.modot.org/interstate-70-environmental-assessment-jackson** or email the project team at **i70_ea_i435_i470@modot.mo.gov**.