CARVER COUNTY

NOISE ANALYSIS PROCESS

WHY IS TRAFFIC NOISE ANALYZED?

In 1972, the United States Congress passed legislation to provide mitigation for highway noise as part of all Type I Federal-Aid projects, which are those that involve one or more of the following:

» Construct a road on a new location, or

» Alteration of an existing road that significantly changes the horizontal or vertical alignment, or

» Increase the number of though traffic lanes for one or more miles

WHEN IS THERE A TRAFFIC NOISE IMPACT?

A 'noise sensitive receiver' (defined as homes, parks, trails, schools, businesses, etc.) is considered impacted by noise if:

» Future noise levels exceed the FHWA noise abatement criteria, or

» There is a substantial increase (5 dBA) in future noise levels over existing noise levels

WHAT PROMPTED A TRAFFIC NOISE STUDY ON THIS PROJECT?

The decision to add a travel lane in each direction on Highway 10/Engler Blvd. required Carver County to conduct a traffic noise analysis for the project.

WHERE WE ARE IN THE PROCESS

The project has completed field measurements, modeled existing and future noise levels, identified noise impacts, and evaluated mitigation measures. The noise wall solicitation process will end on April 15, 2024. At that time, it will be determined if one or more noise walls will be included in the project.

SOUND LEVEL FACTS

» Changes in noise levels of 3 dBA or less are not typically detectable by the human ear

» A noise level increase of 5 dBA is generally readily noticeable

» A noise level increase of 10 dBA is usually felt to be 'twice as loud' as before

» Doubling of traffic = 3 dBA increase in noise levels

» Traffic would need to triple to result in a readily perceivable (5 dBA) increase in noise

» If a highway is moved half as close to existing homes (i.e. 200-ft to 100-ft), the noise levels will increase by 3 dBA

» If a highway is moved double the distance from existing homes (i.e. 100-ft to 200-ft), the noise levels will decrease by 3 dBA

Field Measurements

» Document existing noise levels at representative sites

» Validate noise models (measured levels +/- 3 dBA of model levels)

Noise Level Modeling

» Develop noise models of project area roadways and topology

» Model noise levels at receptor sites (homes, businesses, parks, etc.)

» Model existing, future no-build and future build conditions (Use 20-year traffic projections)

IMPACTS IDENTIFIED?

NO → **Noise Analysis is complete**

YES →

» Noise levels approaching or exceeding FHWA noise abatement criteria

» 66 dBA (Leq for residential use)

» Substantial noise increase (5 dBA or more increases between future build noise levels)