

Noise Study

A noise study, including noise modeling was completed for the two (2) project limits separately as listed below:

- **Mile Marker 3.2 north 1.5 miles to Mile Marker 4.7**
- **Mile Marker 5.7 north 2.0 miles to Mile Marker 7.7**

A precision sound level meter validated the noise model based on field readings and traffic counts along I-35.

The study results are explained in the following slides.

Noise Study – Mile Marker 3.2 to Mile Marker 4.7

- The model validation proved that all measured versus predicted levels were within the ± 3 dB range; thus, the noise model developed for the study area would provide an acceptably accurate estimate of noise levels for the existing and future conditions.
- The receivers of concern for this noise study consist of four (4) single-family homes and three (3) vacation rental cabins.
- Based on ODOT Traffic Division's projected roadway traffic for year 2052, no receivers are projected to experience exterior noise levels that approach, meet or exceed 67 dB(A) LEQ (h). No receivers will experience a substantial increase (15 dB) over the existing sound levels; the highest increase is 3.7 dB.
- No noise impacts were identified, therefore, noise abatement in the form of free-standing noise walls did not need to be considered. To aid in noise compatible land use planning, noise analysis was conducted in order to delineate the future "impact zone" – the area within which traffic noise levels will result in noise impacts (66 dB(A) LEQ (h) or greater).
- Distance from the center of the proposed roadway is used to define the future 66 dB(A) LEQ (h) impact zone. The impact zone was determined to be approximately 500 feet from the centerline of the I-35 roadway as proposed (centerline of northbound roadway if east of I-35; centerline of southbound roadway if west of I-35). Development within the impact zone on either side of the proposed project should be compatible with elevated traffic noise levels. Due to anticipated future noise levels, residential (NAC 'B') and all NAC Activity Category C land uses are discouraged within this impact zone.

Noise Study – Mile Marker 5.7 to Mile Marker 7.7

- The model validation proved that all measured versus predicted levels were within the ± 3 dB range; thus, the noise model developed for the study area would provide an acceptably accurate estimate of noise levels for the existing and future conditions. The receivers of concern for this noise study consists of sixteen (16) single-family-home receivers (representing eighteen (18) individual dwellings), one (1) commercial-lodging receiver (representing five (5) individual worker bunk houses), and one (1) veterinarian's office.
- Based on a model of future roadway conditions including the proposed roadway expansion and utilizing the same projected traffic data for year 2052, the single-family-home receivers, R-8 and R-9, are projected to experience exterior noise levels that exceed 67 dB(A) LEQ (h). No receivers will experience a substantial increase (15 dB) over the existing sound levels; the highest increase is 3.9 dB.
- An interior analysis was conducted for the veterinary clinic evaluated as NAC-D, in which no future noise impact occurs. Further, the receiver will not experience a substantial increase (15 dB) in future levels over the existing levels, with the increase being 3.0 dB.

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Noise Study – Mile Marker 5.7 to Mile Marker 7.7

- The above-mentioned noise impacts (receivers R-8 and R-9) necessitated Noise Barrier Analysis to determine whether constructing freestanding sound walls within the I-35 right-of-way would be reasonable and feasible. Noise abatement measures were determined to be ineffective primarily due to either not meeting the 7 dB(A) noise reduction design goal or because an insufficient number of receivers would be benefitted, resulting in too high a cost per benefitted receiver. Consequently, noise mitigation proved not feasible and/or reasonable for the proposed project.
- To aid in noise compatible land use planning, noise analysis was conducted in order to delineate the future “impact zone” – the area within which traffic noise levels will result in noise impacts (66 dB(A) LEQ (h) or greater). Distance from the center of the proposed roadway is used to define the future 66 dB(A) LEQ (h) impact zone. The impact zone was determined to be approximately 500 feet from the centerline of the I-35 roadway as proposed (centerline of northbound roadway if east of I-35; centerline of southbound roadway if west of I-35). Development within the impact zone on either side of the proposed project should be compatible with elevated traffic noise levels. Due to anticipated future noise levels, residential (NAC ‘B’) and all NAC Activity Category C land uses are discouraged within this impact zone.