

I-49 Corridor Improvements Noise Abatement Information



Limits of the Noise Study Area

- I-49 Noise Study Areas (NSA) from MO Route 150 to MO Route 58
- NSA's are focus areas for noise abatement evaluations



Noise Basics and Terminology

- Noise is unwanted or excessive sound
- Sound is measured in decibels (dB)
- Traffic-generated sound levels are averaged and expressed as dB(A) Leq(h)
- Factors affecting traffic noise:
 - Vehicle tires, engine, and exhaust and therefore not constant
 - Number of vehicles, heavy trucks, and speed limit.

Noise Basics and Terminology

| Common Outdoor Sound Levels | Noise Level (dB) | Common Indoor Sound Levels |
|---|------------------|------------------------------|
|  | 110 | Night Club |
|  | 100 | Inside NY Subway Train |
|  | 90 | Food Blender at 3 Feet |
|  | 80 | Shouting at 3 Feet |
|  | 70 | 4 Lane Road at 50 Feet |
|  | 60 | Normal Speech |
|  | 50 | Large Business Office |
|  | 40 | Small Theater Background |
|  | 30 | Library |
| | 20 | Bedroom at Night |
| | 10 | Broadcast & Recording Studio |
| | 0 | Threshold of Hearing |

Source: California Dept. of Transportation Technical Noise Supplement, September 2013, Page 2-20

Noise Basics and Terminology

| Change Sound Level | Perception |
|--------------------|---------------------|
| 3 dBA | Barely Perceptible |
| 5 dBA | Clearly Perceptible |
| 10 dBA | Twice as Loud |

Sound Wall Basics



Noise Analysis Process

- This noise abatement evaluation relied on a MoDOT-approved noise study
- Noise abatement evaluations were performed for meeting feasibility and reasonableness criteria per MoDOT Noise Policy
- Typical abatement measures include free standing noise walls/barriers
- Berms are also considered acceptable noise abatement

Noise Abatement Criteria

Feasibility

- Acoustic and engineering factors considered
- Requires 5 dB(A) reduction for 2 first-row impacted receivers

Reasonableness

- Viewpoints of owners and residents, greater than 50% aggregate required for approval
- Abatement with noise walls cannot exceed 1,300 square feet (sf) per benefited receptor
- Abatement must achieve 7 dB(A) reduction for 100% of first-row receptors

Noise Abatement Definitions

Impacted Receiver / Receptor

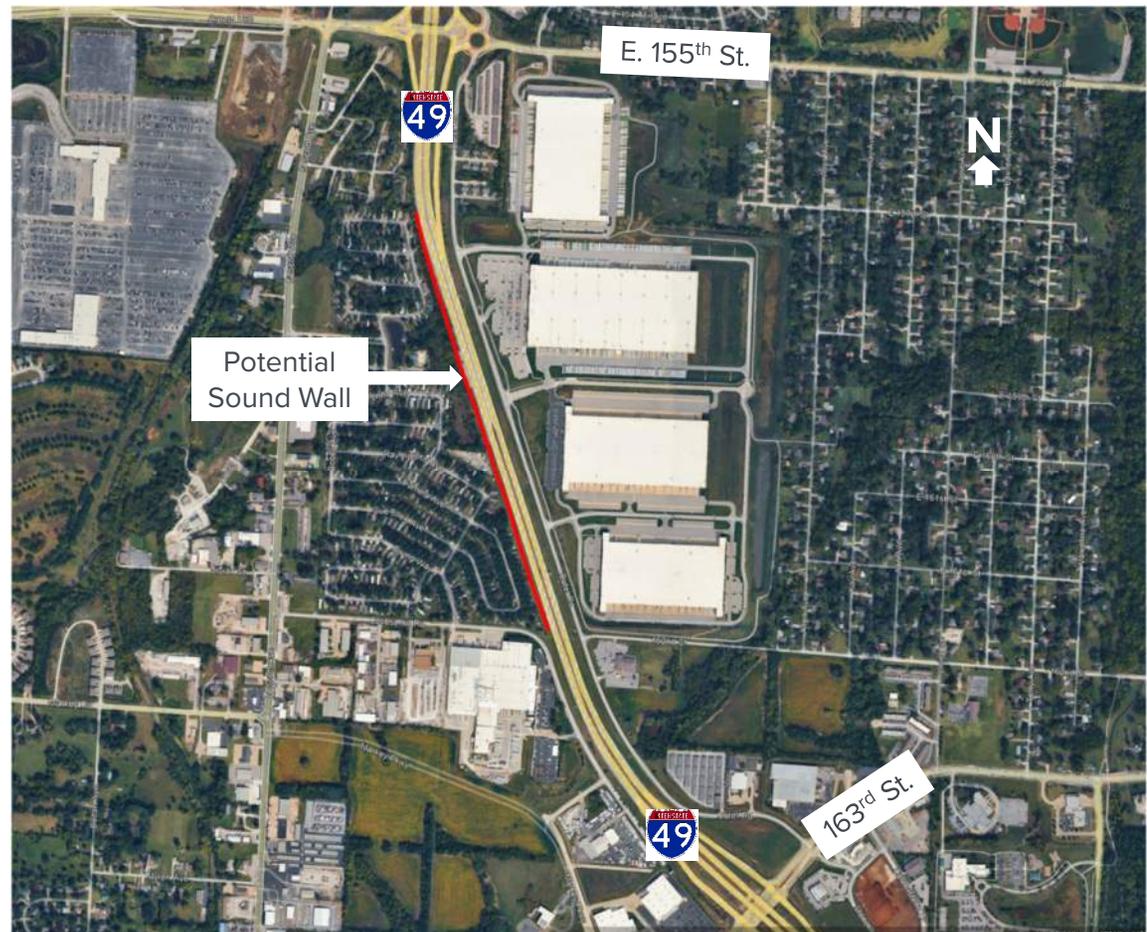
- Any residential receptor (property) that is determined to experience 66 dB or greater in an outdoor residential setting.

Benefited Receiver / Receptor

- A receptor (property) that receives at least a 7 dB reduction in noise levels with the addition of a sound barrier.

Potential Sound Wall Location

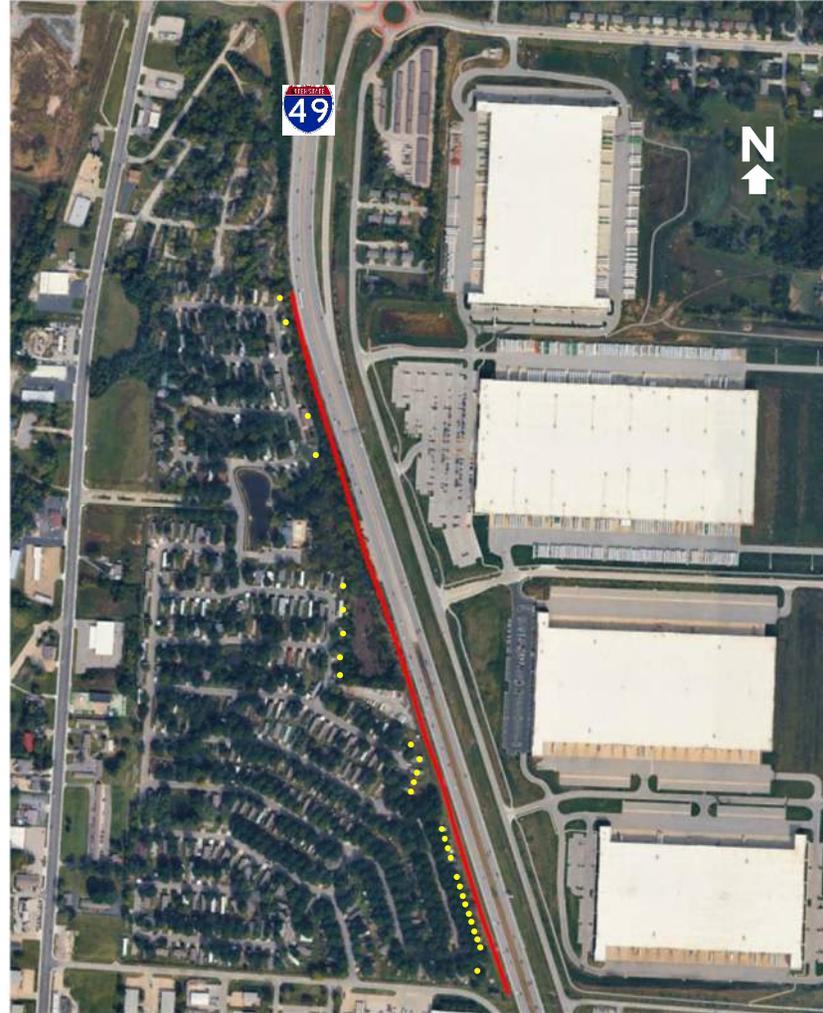
Only one Noise Study Area met the Noise Abatement Criteria



Potential Sound Wall Location

Legend

- Impacted, Benefited Receptors
- Recommended Sound Wall



Potential Sound Wall Location

NSA 1 - Receiver Map I-49 Traffic Noise Study

Not To Scale
NOTE: Noise Levels Based
On 2047 Traffic Projections

Legend

- Non-Impacted Receiver
- Impacted Receiver
- Benefitted Receptor
- Sound Wall
- ◆ Field Measurement Location



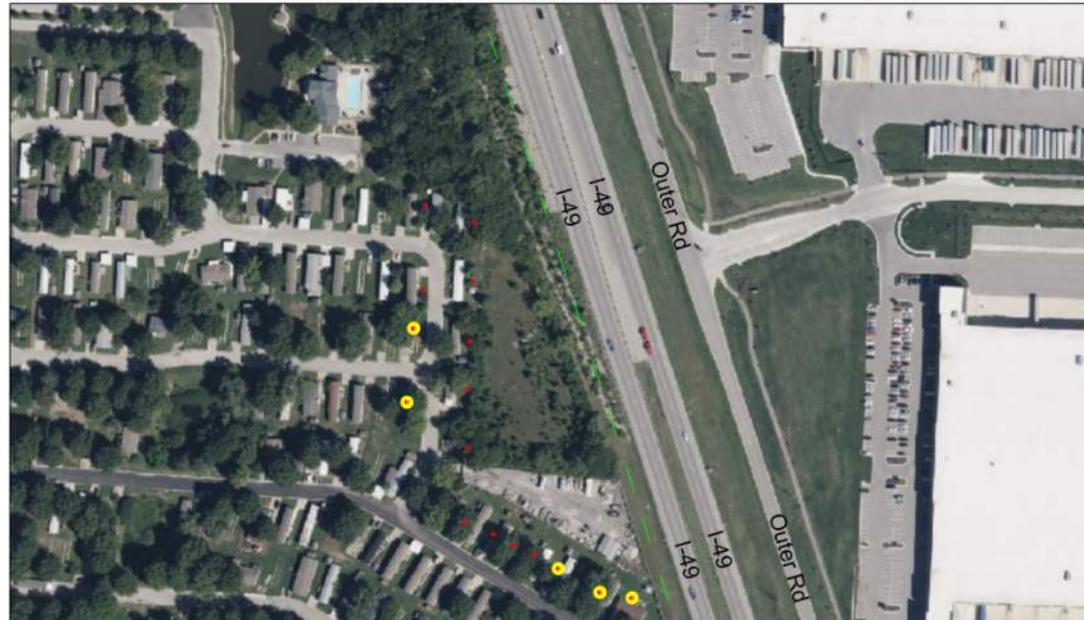
Potential Sound Wall Location

NSA 1 - Receiver Map I-49 Traffic Noise Study

Not To Scale
NOTE: Noise Levels Based
On 2047 Traffic Projections

Legend

- Non-Impacted Receiver
- Impacted Receiver
- Benefitted Receiver
- Sound Wall
- ◆ Field Measurement Location



Potential Sound Wall Location

NSA 1 - Receiver Map I-49 Traffic Noise Study

Not To Scale
NOTE: Noise Levels Based
On 2047 Traffic Projections

Legend

- Non-Impacted Receiver
- Impacted Receiver
- Benefitted Receiver
- Sound Wall
- ◆ Field Measurement Location



Next Steps

- All first-row receivers will be allowed the opportunity to vote
- Mail ballot by March 11, 2026

All ballots must be
postmarked by
March 11, 2026