Noise Advisory Board Meeting #1
March 15, 2016
01 Project Overview
02 Noise Advisory Board Goals & Objectives
03 What is Noise and How is it Measured?
04 Noise Data Collection Overview
05 Determining if a Noise Wall Will Be Used
Project Team

Brian Klauk  
SCDOT  
Special Programs Manager

Heather Robbins  
SCDOT  
Director of Environmental Services
3 INTERSTATES + 12 KEY INTERCHANGES = Carolina Crossroads
<table>
<thead>
<tr>
<th>Bridges</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interchanges</td>
<td>12</td>
</tr>
<tr>
<td>Interstate (miles)</td>
<td>14</td>
</tr>
<tr>
<td>Roadway (lane miles)</td>
<td>166</td>
</tr>
<tr>
<td>AADT (Between St. Andrews and I-20)</td>
<td>134k</td>
</tr>
</tbody>
</table>
Phase 1:
Notice of Intent (NOI) to prepare an EIS and Scoping (July 24, 2015)

Phase 2:
Compare alternatives and prepare a Draft EIS and a Final EIS

Phase 3:
Project Delivery

36 Months
Noise Advisory Board Goals & Objectives
NAB Goals & Objectives

To provide...

Better Understanding of the noise evaluation process.

To provide...

Two-Way Communication between the community and the Project Team.

To...

Review Outcome of noise data collection.
What is noise and how is it measured?
What is noise?

» Noise is a vibration that causes pressure variations in air and water.
Measuring Noise

Special equipment is used to measure the noise levels at noise-sensitive sites throughout a project area.
Sound is measured in units called decibels (dBA).

Decibels gives a scale for noise levels that are experienced or perceived by the human ear.
FHWA Noise Abatement Criteria & SCDOT Traffic Noise Abatement Policy

» FHWA Noise Abatement Criteria

» SCDOT Traffic Noise Abatement Policy
04 Noise Data Collection Overview
Comparing Results to the FHWA Traffic Noise Model

**Validation Required**
- to verify accuracy of noise models used to predict existing or future noise levels.

**Validation Occurs**
- when existing highway traffic noise levels and predicted noise levels are within +/- three dBA of one another at all receptor sites.

**Verified Accuracy**
- of the traffic noise model was achieved when existing traffic noise levels were measured and compared against TNM results.
Noise Measurement Locations
TNM Noise Model
## Noise Results

<table>
<thead>
<tr>
<th>Measurement Location</th>
<th>Leq(h) (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Measured</td>
</tr>
<tr>
<td>A: East of Broad River Road off-ramp near Southland Log Homes</td>
<td>72.1</td>
</tr>
<tr>
<td>B: East of Harbison Boulevard on-ramp near Love Chevrolet</td>
<td>71.3</td>
</tr>
<tr>
<td>C: West of Piney Grove Road off-ramp near Country Walk Apartments</td>
<td>69.3</td>
</tr>
<tr>
<td>D: West of Piney Grove on-ramp near 490 Jamil Road</td>
<td>68.0</td>
</tr>
<tr>
<td>E: East of I-26 near Raintree Apartments</td>
<td>74.7</td>
</tr>
<tr>
<td>F: West of I-26 near Stoney Creek Apartments</td>
<td>69.1</td>
</tr>
<tr>
<td>G: East of I-126 near 164 Morninghill Drive</td>
<td>67.2</td>
</tr>
<tr>
<td>H: Northeast of I-126 near Three Rivers Apartments</td>
<td>62.3</td>
</tr>
<tr>
<td>I: West of Sunset Boulevard off-ramp near 198 East Medical Lane</td>
<td>67.8</td>
</tr>
<tr>
<td>J: Southwest of Bush River Road off-ramp near Double Tree by Hilton</td>
<td>65.7</td>
</tr>
<tr>
<td>K: North of I-20 near Briargate Condominiums</td>
<td>65.5</td>
</tr>
</tbody>
</table>
Noise Receptor Sites

• A total of 2,491 individual noise receptor sites were identified.

• Sites were within approximately 500 feet of the project centerline and were identified using parcel map information.
Next Steps

1. Preliminary Alternatives Identified (Level One Screening)
   - Does the alternative...
     - Reduce delay?
     - Reduce congestion?
     - Have an adequate capacity?
   - If no, Alternative Eliminated
   - If yes, receive input

2. Reasonable Alternatives (Level Two Screening)
   - Does the alternative...
     - Minimize environmental impacts?
     - Minimize community impacts?
   - If no, Alternative Eliminated
   - If yes, alternative to advance for detailed study
What happens if there is a Traffic Noise Impact?
How do Noise Walls Work?

» Block the direct path of sound waves from the highway to adjacent residences

» High enough and long enough to block line of sign between highway and residences

» Important to remember that not all noise will be blocked or eliminated.
Determining if a Noise Wall Will be Used
Feasibility and Reasonability

“Feasibility” is determined by physical and/or engineering constraints:

- **Engineering Feasibility**: Could a noise barrier feasibly be constructed on the site?

“Reasonability” is based on several factors including:

- **Acoustic Feasibility**: 5 dBA reduction at 75% of impacted receptors for the noise abatement measure to be acoustically feasible.

- **Noise Reduction Design Goal**: 8 dBA must be achieved for 80% of those receptors determined to be in the first two building rows and considered benefited.

- **Cost-effectiveness**: SCDOT’s cost-effectiveness criteria.

- **Opinion of benefited residents and owners**.
Feasibility Considerations

- Right-of-way
- Safety concerns
- Buried utilities or utility relocation
- Drainage impacts
- Soil types or wetland areas
A reduction of 8 dBA must be achieved for 80% of those receptors determined to be in the first two building rows and considered benefited.

Does it align with this criteria?

Guard rails, rub rail, utility relocation, etc. must be included in the cost.
Noise Walls and the Public
Questions?
www.SCDOTCarolinaCrossroads.com

info@CarolinaCrossroadsSCDOT.com

1-800-601-8715

Look for us on social media!