NOISE BARRIER INVENTORY

Presented by:

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and

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NYSDOT, Environmental Services Bureau
New York State’s Noise Barriers

1. Total Length has grown from 91 miles (7th per 2004 inventory) to 106 miles (2007).

2. Total Quantity = 7,000,000 square feet (8th, per 2004 inventory).

3. Total Investment = $207 M (per 2004 inventory).

4. In just the last 3 years has constructed $87M in noise barriers.

5. Noise barrier types include earth berm, timber, composite materials, and transparent noise barriers.

6. NYSDOT had previously conducted inventories in two Regions and has performed some GPS pickup in another Region.
<table>
<thead>
<tr>
<th>State</th>
<th>City/County</th>
<th>Route</th>
<th>Material</th>
<th>Type</th>
<th>Year</th>
<th>Length (feet)</th>
<th>Height (feet)</th>
<th>Cost ($/sq ft)</th>
<th>Barrier Cost in 2004 $</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>Rochester</td>
<td>I-390</td>
<td>Concrete/Precast</td>
<td>I</td>
<td>1978</td>
<td>2,722.00</td>
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<td>34</td>
<td>734,284</td>
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<td>11,152.00</td>
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<td>3,665,282</td>
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<td>1988</td>
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<td>16.00</td>
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<td>2,471,134</td>
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<td>1,168,373</td>
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<td>1,889.00</td>
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<td>783,539</td>
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<td>Concrete/Precast</td>
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<td>1986</td>
<td>22,140.00</td>
<td>13.00</td>
<td>13</td>
<td>3,736,369</td>
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</tbody>
</table>
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New York State Department of Transportation

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Inventory Goals

1. To create a tool for asset management of noise barriers that have been constructed over the past 30 years (many noise barriers are now in need of maintenance)

2. To improve the accuracy of FHWA tri-ennial noise barrier reporting.
Inventory Components

1. Reviewed three State DOT inventories
2. Research at Regional offices
   a. As-constructed quantities
   b. Contract bid price
   c. Contract drawings
3. Tablet PC Field Application Development:
   a. Location by GPS
   b. Location by neighborhood, cross streets
   c. Approximate height
   d. Material type, color, texture
   e. Mounting condition
   f. Associated utilities
   g. Typical photographs
   h. Condition assessment
4. Field data collection pilot program in Monroe County
5. Database Development (under development)
1. Summary of Reviews of Three State Noise Barrier Inventories

a. Variety of Complexity
b. States are Considering Conversion from Spreadsheet to Georeferenced Database systems.
c. References:
   - Conversion of the Statewide Noise Barrier Inventory Into a Spatially Referenced Geodatabase, prepared for Florida DOT by Florida Atlantic University Catanese Center for Urban & Environmental Solutions (CUES), April 2005
   - Statewide Noise Barrier Inventory Project Phase I Final Report, prepared for Ohio DOT by EMH&T, June 2005.
2. Research at Regional Offices

a. Associate known noise barriers with contract numbers and year constructed.
b. As-constructed noise barrier quantities for contract numbers.
c. Bid prices for noise barrier items.
d. Average height:

\[
\text{Average Height} = \frac{\text{As Constructed Quantity}}{\text{As Measured GPS Length}}
\]
3. Tablet PC Field Application Development
**Location Attributes**

Kinds of Points:
- Noise barrier
- Snow shelf
- Safety shape

Segment – A subset of the barrier that’s unique.
Barrier – A single length of noise barrier between two cross streets.
Municipality – Town, City, Village name
Approximate Height – reality check
Region – 1 thru 11
County

![Image of noise barrier software interface](image-url)
Roadway Attributes

Comments
Cross Roads
  • Beginning Cross Road
  • Ending Cross Road
Community – neighborhood within which the noise barrier is located.
Route Number
Route Direction – NB, SB, EB, WB
Material Attributes

Mounting Conditions:
- Ground
- Structure
- Berm

Material:
- Precast Concrete Post/Panel
- Precast Concrete, Steel Post
- Concrete, Other
- Wood, Post and Plank
- Wood, Glue Laminate
- Wood, other
- Block
- Brick
- Plastic
- Metal
- Berm
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mate rial Attributes (Continued)

<table>
<thead>
<tr>
<th>Product Name, if Proprietary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway Side Color</td>
</tr>
<tr>
<td>Residential Side Color</td>
</tr>
<tr>
<td>Highway Side Texture (concrete)</td>
</tr>
<tr>
<td>Absorptive Finish</td>
</tr>
<tr>
<td>Residential Side Texture (concrete)</td>
</tr>
</tbody>
</table>

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Feature Attributes

Utilities Associated with Barrier Segment
- Safety Shape
- Snow Shelf
- Access Doors
- Fire Knockouts
- Lighting
Condition Attributes 1: General Condition

<table>
<thead>
<tr>
<th>Graffiti</th>
<th>Damage</th>
<th>Comments</th>
</tr>
</thead>
</table>

Overall Condition
- New
- Good
- Poor

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Condition Attributes 2: Material Specific Conditions

- Varies by material
- Includes comment option
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Picture Attributes

Photo 1 – General, Overall
Photo 2 – Typical, Highway Side
Photo 3 – Typical, Residential Side
Photo 4 – Special feature or damage area 1
Photo 5 – Special feature or damage area 2
Photo 6 – Special feature or damage area 3
4. Field Data Collection Pilot Program in Monroe County, NY
Monroe County, NY Pilot Program

<table>
<thead>
<tr>
<th>Number</th>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I-390</td>
<td>Caulkins Road to Hylan Drive [Earth Berm, SB lanes]</td>
</tr>
<tr>
<td>2</td>
<td>I-390</td>
<td>Hylan Drive to E. Henrietta Road (NY 15A) [Fanwall, SB &amp; NB Lanes]</td>
</tr>
<tr>
<td>3</td>
<td>I-390</td>
<td>Brighton-Henrietta Townline Road to I-590 [Earth Berm, NB Lanes]</td>
</tr>
<tr>
<td>4</td>
<td>I-390</td>
<td>Kendrick Road to Scottsville Road [Wall, Genesee Valley Park]</td>
</tr>
<tr>
<td>5</td>
<td>NW Quadrant</td>
<td>NY 383 / NY 252 Intersection</td>
</tr>
<tr>
<td>6</td>
<td>I-390</td>
<td>NY 104 to Latta Road [Earth berms, both sides, various locations]</td>
</tr>
<tr>
<td>7</td>
<td>Lake Ontario State Parkway</td>
<td>From Lake Avenue to Latta Road [Walls (walls east of Lake are privacy walls, not noise barriers)]</td>
</tr>
<tr>
<td>8</td>
<td>I-590</td>
<td>Winton Road to I-490 [Walls, both sides, with snow shelf and Jersey Barrier]</td>
</tr>
<tr>
<td>9</td>
<td>I-490</td>
<td>Golf Avenue to Fairport Road (NY 31F)</td>
</tr>
<tr>
<td>10</td>
<td>I-490</td>
<td>Fairport Road (NY 31F) to Exit 24 and on/off ramps to Commercial Street, East Rochester [Earth Berm, Walls]</td>
</tr>
<tr>
<td>11</td>
<td>I-490</td>
<td>Exit 24 (East Rochester) to NY 441</td>
</tr>
<tr>
<td>12</td>
<td>NY 441</td>
<td>I-490 to Panorama Trail [Walls]</td>
</tr>
<tr>
<td>13</td>
<td>I-490</td>
<td>NY 441 to I-590 [Walls]</td>
</tr>
<tr>
<td>14</td>
<td>I-490</td>
<td>Winton Road to Alexander Street [Walls]</td>
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<tr>
<td>15</td>
<td>I-490</td>
<td>Broad Street to I-390 [Walls]</td>
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<tr>
<td>16</td>
<td>NY 332</td>
<td>In vicinity of I-90 Toll Barrier</td>
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</tbody>
</table>
Laser Range Finder for Noise Barrier Field GPS Collection

An ‘off-set’ capture location will offer more satellite exposure

A user from a single location can ‘shoot’ multiple GPS points
Field Data Collection Process and Barrier Height Verification
Noise Barrier Inventory – Identify & Record Damaged Panels
Noise Barrier Inventory – Identify & Record Damaged Posts
Noise Barrier Inventory – 8ft Snow Storage / Planting Area
Noise Barrier Inventory – Fire Access in Noise Barrier
Noise Barrier Inventory – Compile Data into GIS
Noise Barrier Inventory – GIS Mapping Sample
Questions