Long-Term Performance and Rehabilitation Strategy of PCC Pavement on US 290 in Houston

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Outline

- US 290 in Houston
- Pavement Condition Survey & Structural Evaluation
- Remaining Life Analysis
- Rehabilitation Strategies
- Summary

Pavement Condition Survey & Structural Evaluation

- Visual Survey
- Ground Penetrating Radar (GPR)
- FWD
- Coring & Material Property Evaluations
### Remaining Life Analysis

<table>
<thead>
<tr>
<th>Section ID</th>
<th>From</th>
<th>To</th>
<th>Design Traffic [mil ESAL]</th>
<th>Cumulative Traffic to 2011 [mil ESAL]</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section #1</td>
<td>Telge Rd</td>
<td>Eldridge Pkwy</td>
<td>8</td>
<td>25</td>
<td>3.1</td>
</tr>
<tr>
<td>Section #2</td>
<td>W Little York Rd</td>
<td>43rd Street</td>
<td>8</td>
<td>53</td>
<td>6.6</td>
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<tr>
<td>Section #3</td>
<td>43rd Street</td>
<td>Dacoma St</td>
<td>8</td>
<td>66</td>
<td>8.3</td>
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<tr>
<td>Section #4</td>
<td>Dacoma St</td>
<td>Loop 610</td>
<td>8</td>
<td>81</td>
<td>10.1</td>
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</tbody>
</table>
Rehabilitation Strategies

- Sections with high CoTE coarse aggregates will be removed and replaced.
- Sections with low CoTE coarse aggregates will remain in place, with additional lanes to be added.

Summary

- Overall, the structural capacity of PCC pavement on US 290 from Loop 610 to Badtke Rd is satisfactory, regardless of slab thickness and pavement age.
- However, severe spalling distresses are prevalent in CRCP with high CoTE coarse aggregate.
- Reconstruction of US 290 sections with severe spalling distresses is recommended.

Summary (cont’d)

- Sections with low CoTE coarse aggregate will remain in place, with additional lanes to be added.
- The quality of materials and construction operations is key to long-life concrete pavement.