Illinois Tollway – Key Statistics

- 286-mile system comprised of four tollways
  - Tri-State (I-294/80/94)
  - Jane Addams Memorial (I-90)
  - Reagan Memorial (I-88)
  - Veterans Memorial (I-355)

- Built in 1958 as a bypass around Chicago to connect Indiana and Wisconsin

- Carries more than 1.3 M vehicles per day
Governor’s Congestion-Relief Program (CRP) to reduce travel times by:

- **Rebuilding/Restoring** nearly the entire 286-mile system
- **Widening** many miles of major roads
- **Converting** 20 barrier toll plazas to **Open Road Tolling**
- **Building** the 12.5-mile **extension of I-355** to serve fast-growing Will County
Tri-State Tollway

Completed

☑ Rebuild & Widening from IL Route 394 to 167th Street completed in 2006 within budget at $284.8 million

Current and Future Projects

☐ Rebuild & Widening underway with completion scheduled in 2010:
  - 159th Street to 95th Street
  - Balmoral Avenue to Lake Cook Road
  - Half Day Road to Wisconsin State Line

Financial Update

☐ The program budget for the Tri-State Corridor is $2.3 billion
Reagan Memorial Tollway

Completed

✓ Rebuild & Widening from IL Route 59 to Washington St. and Improvements from US Rt. 30 to IL 251 completed in 2005/06 within budget

Current and Future Projects

Rebuild & Widening underway with completion scheduled in 2009:
- York Road to Washington Street
- Aurora Toll Plaza to Deerpath Road
Jane Addams Memorial Tollway

Current and Future Projects

**Master Planning** from the Kennedy Expressway to I-39 will be completed in 2008. Final design for Mainline Reconstruction & Widening is to be completed within the 2005-16 program.
Current and Future Projects

New 12.5-mile extension opened November 11, 2007
• Completed on budget and ahead of schedule

Additional projects scheduled for 2008-10
• Widening and Resurfacing segments of the original 17-mile roadway

Financial Update

The program budget for the I-355 corridor is $823.5 million
Update of Tollway Innovations for the HMA Industry

- Recent studies/innovations
- Support from contractors, asphalt suppliers, equipment manufacturers, other agencies
- Longer-lasting roads/reduced costs
The Option to Fractionate RAP
Jane Addams Memorial Tollway (I-90) Reconstruction & Widening Project
FRAP Research Goals

- Retain long-term performance at lower costs
- Quality Control maintained
- U. of I. structural analysis (fatigue and dynamic modulus)
  - Are mix properties compromised with higher RAP?
  - How soft for the PG? (64-22 vs. 58-22 vs. 58-28)
Resulting Tollway FRAP Specifications

- Category 1 FRAP
  - Crushed Aggregates only from Tollway Mainline
  - Required in SMA (fine portion up to 15%)
  - Highest Max. RAP allowed with Category 1 FRAP
Resulting Tollway FRAP Specifications

- Category 2 FRAP
  - From Tollway shoulders or other State Projects
  - Allowable in all dense graded mixtures
Resulting Tollway FRAP Specifications

- Double bump of asphalt grade eliminated with high RAP mixes
### Specified Increased Percentages of RAP in Tollway Mixes

<table>
<thead>
<tr>
<th>Mix Type</th>
<th>PG Grade</th>
<th>Total FRAP % - Tollway</th>
<th>Total RAP % - IDOT</th>
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</thead>
<tbody>
<tr>
<td>SMA’s</td>
<td>PG 76-22</td>
<td>15% (fine only)</td>
<td>0</td>
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<tr>
<td>HMA surf., Mix D, N70</td>
<td>PG 58-22</td>
<td>25%</td>
<td>10%</td>
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<tr>
<td>HMA binder, IL-19, N50</td>
<td>PG 58-22</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>HMA base course, N50</td>
<td>PG 58-22</td>
<td>50%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Ground Tire Rubber (GTR) as a Modifier in Asphalt
SMA mixes less costly and easier to produce

- PG 76-22 with Ground Tire Rubber Modifier
- Reduces drain down potential and the need for fibers
- PG 76-22 with alternate SBS Polymer Modifier to be studied
- 15% fine portion FRAP can replace virgin fine aggregate
- More options for coarse aggregate sources
HMA Stabilized Subbases under PCC Pavements less costly

- 40% to 50% of RAP or FRAP easily obtained
- PG 58-22 allowed with high FRAP mixes
- Volumetric properties more easy to obtain with 2% air voids
- Only 3-inch thickness
HMA Shoulder Mixes Less Costly and Easier to Construct

- HMA surface mixes with up to 25% FRAP
- HMA binder course with up to 40% FRAP & 3% air voids
- With thicker shoulders, HMA base course with up to 50% FRAP/RAP with 2% air voids
- PG 58-22 allowed with all high-FRAP mixes
Cost Savings on Tollway Bids

- Savings already in the millions on one bid
  - 15” Full-Depth HMA, > 19% Savings
  - 6” Full-Depth HMA Shoulders, > 30% Savings
  - 9” Full-Depth HMA Shoulders, > 12% Savings
Additional Ideas To Investigate

- Quiet HMA Pavements
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- Recycled Roof Shingles (manufactured or tear-offs) as processed independently
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- Recycled Roof Shingles (manufactured or tear-offs) as processed independently
- Foundry Sand use
- Warm-Mix Asphalt
THANK YOU