Virginia’s Pavement and Materials Research Program

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Director, VTRC
Areas of Emphasis

- Asphalt mix design and performance
- Structural evaluation
- Accelerated testing
- Managing for safe function
- Quality management
- Preservation and recycling
Recycling/Reclaiming
I-81 Southbound
Augusta Co.
Research “Sweet Sixteen” 2017
The American Association of State Highway and Transportation Officials Recognizes
Virginia DOT
Structural Study of Cold Central Plant Recycling

BRIAN NESS
Chair, AASHTO Standing Committee on Research

DALE PEABODY
Chair, AASHTO SCOR Research Advisory Committee
Improved Dense-Graded Mixtures

Activities:
• 50-gyration/65-gyration Field Trials
• Mix Design Task Force – VTRC support
• Density & Permeability Review

Findings:
• Modestly higher AC levels
• Improved compact-ability and in-place density
• Contractors really like incentives!
Better Performing Subdivision & Secondary Road Mixtures

• Application thickness of an inch or less – more lane miles with less material.
• Good ride, fine surface texture, increased durability - extended pavement life

“Friendlier” surfaces for varied use (users)
SM-4.75 and SM-9.0 Mixtures

Multi-year monitoring of SM-4.75 mixtures:
- Yield/quantity issues
- Compaction/Permeability
- Cool-weather laydown

2017 Field Trials with SM-9.0 mixtures:
- Natural Sands
- Fibers
- 50-gyration designs
Pavement Preservation
FiberMat with Latex Slurry

Fiber bed

Chip spreading

US 301, Sussex County

Chip seating

Latex Slurry
Managing Pavement Friction

High-Production Continuous Friction and Texture Measurement
Network Structural Evaluation

Traffic Speed Deflectometer

High-Production Continuous Deflection Measurement (plus lots of other stuff)!
### Accelerated Pavement Testing

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<tr>
<th>Lane 6</th>
<th>Lane 5</th>
<th>Lane 4</th>
<th>Lane 3</th>
<th>Lane 2</th>
<th>Lane 1</th>
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<tbody>
<tr>
<td>3&quot; SMA</td>
<td>3&quot; SMA</td>
<td>3&quot; Surface Asphalt 65 gyr</td>
<td>3&quot; Surface Asphalt 50 gyr</td>
<td>Surface Asphalt</td>
<td>Cold Recycled Asphalt</td>
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<tr>
<td>8&quot; jointed concrete</td>
<td>8&quot; jointed concrete</td>
<td>Intermed Asphalt</td>
<td>Intermed Asphalt</td>
<td>Cold Recycled Asphalt</td>
<td>Cold Recycled Asphalt</td>
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<tr>
<td>6&quot; Compacted Aggregate (21B)</td>
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<td>Compacted Subgrade (CBR 7.5)</td>
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High Polymer Asphalt Binders

• Being studied to mitigate reflective cracking over jointed concrete
• Increased polymer content in binder
• Other uses?
  – Subdivisions (with cracking)
  – Rut-prone locations
Laboratory Performance Testing

• Investigation of various performance testing criteria
  – Crack tests
  – Durability tests
  – Rutting tests

• Objective – preparing for more performance-oriented material specifications
Thanks to everyone for your support of our research program!

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