2015 VAA Fall Conference
October 6, 2015

Jose Gomez
VDOT Research Director
I-81 Recycling Project Update

• Summer 2015
  – 4 years ~ 7 million ESALs (right lane)
  – Average rut depth = 0.1 inches
  – Average IRI = 53 / 44 (left / right)
  – 3-year performance report selected as AASHTO High Value Research
    • One of 16 across the country
NCAT Recycling Sections Update

• October 2014
  – All testing completed, 10 million ESALs applied
  – All sections performing well
  – FDR base section (S12) acting like a perpetual pavement

• Mid-October 2015
  – 2\textsuperscript{nd} round of another 10 million ESALs will start
I-64 Lane Widening, Segment II

Begin Project
1.05 miles west of Humelsine Pkwy/Marquis Ctr Pkwy
MM 241.30

Yorktown Naval Weapons Station

End Project
0.54 miles east of Yorktown Rd
MM 248.35

Project Length 7.08 Miles

I-64 Segment II
Exit 242 to Exit 247

- Exit 242
  - Rt. 199 Humelsine Parkway/Marquis Ctr Parkway
- Exit 243
  - US 60/Rt. 143 Busch Gardens
- Exit 247
  - Rt. 143
  - Rt. 238/Yorktown Rd

Williamsburg
I-64 Lane Widening, Segment II

• RFP released August 2015
  – Use CCPR and FDR to add new lanes and rebuild existing

• RAP usage
  – Could exceed 250,000 tons

• Cost savings
  – Could exceed $11 million

• Instrumentation
  – VTRC will instrument the pavement to quantify performance
Accelerated Pavement Testing

VDOTs Heavy Vehicle Simulator, to be delivered next week
Accelerated Pavement Testing
Accelerated Pavement Testing

Test yard construction is progressing
Continuous Friction to Reduce Crash Rates

Locked – wheel:
- 40+ years
- Worst case
- Representative of modern handling/braking systems??

Continuous Measur. Systems (CFME):
- Effective coupling with crash data
- Relates better to ABS systems
- Lower cost network testing
High Resolution/Continuous Data

<table>
<thead>
<tr>
<th>Friction Inventory Cost Estimates</th>
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</thead>
<tbody>
<tr>
<td>ASTM E-274</td>
</tr>
<tr>
<td>Cost/mile</td>
</tr>
<tr>
<td>Units Req’d*</td>
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</tbody>
</table>

* No. of testing systems

Elevated crash rates – low friction
MOBA PaveIR Scanning System
SHRP 2 “Lead Adopter” Grant

<table>
<thead>
<tr>
<th>Project</th>
<th>Temperatures (deg. F)</th>
<th>Temp. Segregation</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>A</td>
<td>273</td>
<td>11.4</td>
</tr>
<tr>
<td>B</td>
<td>286</td>
<td>8.1</td>
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* “under-functioning” MTV, haul-truck shortage
Performance Evaluation of SM 4.75mm Asphalt Mixtures

This research is focused on the evaluation of the initial field performance of Virginia’s SM 4.75 mixtures placed on subdivisions and other secondary routes.

Important production and placement characteristics (e.g., volumetrics, permeability) will be coupled with laboratory performance testing to establish a performance baseline.
## Improving Dense-Graded Mixtures
### Evaluation of SUPERPAVE Mixes

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Plant</th>
<th>Mix Type</th>
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</thead>
<tbody>
<tr>
<td>Boxley Asphalt</td>
<td>Lynchburg</td>
<td>SM-9.5D</td>
</tr>
<tr>
<td>Branscome</td>
<td>Norfolk</td>
<td>SM-9.5A</td>
</tr>
<tr>
<td>Chemung Construction</td>
<td>Mitchell</td>
<td>SM-12.5D</td>
</tr>
<tr>
<td>Colony Construction</td>
<td>Powhatan</td>
<td>SM-12.5E</td>
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<tr>
<td>SL Williamson Company</td>
<td>Shadwell</td>
<td>SM-12.5D</td>
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<tr>
<td>SL Williamson Company</td>
<td>Shadwell</td>
<td>SM-9.5D</td>
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<tr>
<td>Superior Paving</td>
<td>Leesburg</td>
<td>SM-9.5D</td>
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<tr>
<td>Superior Paving</td>
<td>Bealeton</td>
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<tr>
<td>VA Paving</td>
<td>Chantilly</td>
<td>SM-9.5A</td>
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<tr>
<td>W-L Construction &amp; Paving</td>
<td>Wytheville</td>
<td>SM-12.5A</td>
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<tr>
<td>W-L Construction &amp; Paving</td>
<td>Strasburg</td>
<td>SM-12.5A</td>
</tr>
</tbody>
</table>
Improving Dense-Graded Mixtures
VTRC Support

Field-Compacted Specimens:
• Voids & Permeability
• Gen. performance (E*)
• Cracking & Rutting

Binder:
• PG Grading
• MSCR Grading

Loose Mix (500+ boxes):
• Volumetrics & Gradation
• Gen. performance (E*)
• Cracking & Rutting
• Strength/Cracking
• Fatigue
Upcoming VTRC Events

• Pavement Research Advisory Committee Meeting on 10/26/15 at VTRC
• Asphalt Research Advisory Committee Meeting on 10/27/15 at VTRC
• HVS Ribbon Cutting on 11/12/15 at VTTI
Thank you!

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