2015 PAPA BUS TOUR

Rubberized Asphalt in PA
(Dense-Graded and Gap-Graded Mixes)

Steven L. Koser, P.E.

Genetti Hotel
July 30-31, 2015
Recycled Tire Rubber (RTR)

- Why is rubber used in pavements?
- History of use in PA
- Gap-Graded and Dense-Graded
Dense-Graded Rubber Mix

- Continuously Graded
- Wet Process
- Lower Viscosity, Rubber Content, and Rubber Size Than Gap-Graded
- Limited Use Nationwide
- CRMAB
Dense-Graded Rubber Mix

- AASHTO M320-14
- PennDOT’s Predominant Mix Type
Advantages of Dense-Graded

• Reduced Permeability

• Improved Resistance to Cracking

• Pavement Layers

• Long-Term Durability
Asphalt Rubber Gap-Graded Pilot Projects

- I-78 in Berks County
- US 15 in Snyder County
- US 15 in Adams County
- I-376 in Lawrence County
Dense-Graded Pilot Projects

- District Memo
- Pilot Projects
## Dense-Graded Pilot Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>CRMAB Paving (Miles)</th>
<th>Pavement Layers to use CRMAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00</td>
<td>Wearing</td>
</tr>
<tr>
<td>2</td>
<td>1.15</td>
<td>Wearing</td>
</tr>
<tr>
<td>3</td>
<td>3.30</td>
<td>Wearing</td>
</tr>
<tr>
<td>4</td>
<td>3.10</td>
<td>Wearing</td>
</tr>
<tr>
<td>5</td>
<td>4.00</td>
<td>Wearing</td>
</tr>
<tr>
<td>6</td>
<td>1.18</td>
<td>Wearing &amp; Binder</td>
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<tr>
<td>7</td>
<td>0.48</td>
<td>Wearing</td>
</tr>
</tbody>
</table>

Total Length of CRMAB Paving = 14.83 Miles
District 4-0 - SR 924 Lackawanna County

- Let Date: April 9, 2015
- Contractor: Pennsy Supply, Inc.
- CRMAB unit cost: $88.68 / ton
- 76-22 unit cost: $88.65 / ton
Dense-Graded Pilot Projects

District 6-0 – SR 63 Philadelphia/Bucks County

- Let Date: June 18, 2015
- Contractor: James J. Anderson Construction
- CRMAB unit cost: $95.00 / ton
- 64-22 unit cost: $76.00 / ton
Dense-Graded Pilot Projects

District 12-0 – SR 366 Westmoreland County

- Let Date: June 18, 2015
- Contractor: Lindy Paving, Inc.
- CRMAB unit cost: $10.75 / SY
- 76-22 unit cost: $8.20 / SY
Accelerated Innovation Deployment (AID) Grant

- FHWA AID Grant
  - Innovative Technologies
  - Improve Standards for Construction Quality
  - Constructing Longer Lasting Highways

- Up To $1 Million Grant
  - 80% Grant and 20% State Match

- Monitor and Evaluate Projects