Maine State Report – NEPPP 2014

Presented by Derek Nener-Plante, MS, PE
Outline

- Customer Service Levels
- Corridor Priorities Work Plan
- Current Preservation Program
- Common Treatments - Barriers
- Innovations – Moving Forward
- Durability Concerns
Customer Service Levels

- **Safety** comprised of:
  - Crash History
  - Paved Roadway Width
  - Pavement Rutting
  - Bridge Reliability

- **Condition** comprised of:
  - PCR
  - Road Strength
  - Bridge Condition
  - Ride Quality

- **Service** comprised of:
  - Posting of roads / bridges
  - Congestion

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**SAFETY CSL = Lowest Grade from the following (deduct one letter grade if Paved Width fails test)**

**Crash History**
Measure: Lane Departure Rate vs. the Statewide Average for the Corresponding ICP, using 2006-2010 Statewide Averages as the baseline.

<table>
<thead>
<tr>
<th>PRIORITY</th>
<th>Excellent A</th>
<th>Good B</th>
<th>Fair C</th>
<th>Poor D</th>
<th>Unacceptable F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 thru 5</td>
<td>&lt; 1.0</td>
<td>1.0 - 1.5</td>
<td>1.51 - 2.0</td>
<td>2.01 - 3.0</td>
<td>&gt; 3</td>
</tr>
</tbody>
</table>

**Pavement Rutting**
Measure: Maximum Wheelpath Rut Depth in Inches.

<table>
<thead>
<tr>
<th>PRIORITY</th>
<th>Excellent A</th>
<th>Good B</th>
<th>Fair C</th>
<th>Poor D</th>
<th>Unacceptable F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt; 0.25</td>
<td>0.25 - 0.41</td>
<td>0.42 - 0.58</td>
<td>0.69 - 0.75</td>
<td>&gt; 0.75</td>
</tr>
<tr>
<td>2</td>
<td>&lt; 0.25</td>
<td>0.25 - 0.50</td>
<td>0.51 - 0.75</td>
<td>0.76 - 1.00</td>
<td>&gt; 1.00</td>
</tr>
<tr>
<td>3</td>
<td>&lt; 0.35</td>
<td>0.35 - 0.65</td>
<td>0.66 - 0.95</td>
<td>0.96 - 1.25</td>
<td>&gt; 1.25</td>
</tr>
<tr>
<td>4 &amp; 5</td>
<td>&lt; 0.45</td>
<td>0.45 - 0.80</td>
<td>0.81 - 1.15</td>
<td>1.16 - 1.50</td>
<td>&gt; 1.50</td>
</tr>
</tbody>
</table>

**Paved Roadway Width** (if paved roadway width does not meet minimum then the Safety CSL is lowered by one grade).
Measure: Paved Width in Feet, including Lanes and Shoulders.

<table>
<thead>
<tr>
<th>PRIORITY</th>
<th>Minimum Paved Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>4 &amp; 5</td>
<td>22</td>
</tr>
</tbody>
</table>

**Bridge Reliability**
Measure: NBI Ratings.

<table>
<thead>
<tr>
<th>Safety CSL + Automatic F</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superstructure Condition</td>
<td>&lt;=3</td>
</tr>
<tr>
<td>Substructure Condition</td>
<td>&lt;=3</td>
</tr>
<tr>
<td>Deck Condition (If an overpass)</td>
<td>&lt;=3</td>
</tr>
<tr>
<td>Culvert Rating, or</td>
<td>&lt;=3 or U</td>
</tr>
<tr>
<td>Scour Critical Bridge</td>
<td>&lt;=3 or U</td>
</tr>
</tbody>
</table>

Revision Date: 4/25/2012
Corridor Priorities

- Statute requires all 1’s & 2’s to have no D’s & F’s by 2022
- Statute requires all 3’s to have no D’s or F’s by 2027

<table>
<thead>
<tr>
<th>Priority</th>
<th>Miles (CL)</th>
<th>Miles</th>
<th>Cumulative Miles</th>
<th>VMT (Billions)</th>
<th>VMT</th>
<th>Cumulative VMT %</th>
<th>Average VMT / Mile (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - MTA</td>
<td>247</td>
<td>1%</td>
<td>1%</td>
<td>1.3</td>
<td>9%</td>
<td>9%</td>
<td>5,408</td>
</tr>
<tr>
<td>1 - DOT</td>
<td>1,503</td>
<td>6%</td>
<td>7%</td>
<td>4.7</td>
<td>32%</td>
<td>41%</td>
<td>3,094</td>
</tr>
<tr>
<td>2</td>
<td>965</td>
<td>4%</td>
<td>12%</td>
<td>1.7</td>
<td>12%</td>
<td>53%</td>
<td>1,759</td>
</tr>
<tr>
<td>3</td>
<td>1,982</td>
<td>8%</td>
<td>20%</td>
<td>2.4</td>
<td>17%</td>
<td>70%</td>
<td>1,234</td>
</tr>
<tr>
<td>4</td>
<td>1,961</td>
<td>8%</td>
<td>28%</td>
<td>1.3</td>
<td>9%</td>
<td>79%</td>
<td>688</td>
</tr>
<tr>
<td>5</td>
<td>2,405</td>
<td>10%</td>
<td>38%</td>
<td>1.1</td>
<td>8%</td>
<td>87%</td>
<td>472</td>
</tr>
<tr>
<td>6</td>
<td>14,394</td>
<td>61%</td>
<td>100%</td>
<td>1.8</td>
<td>13%</td>
<td>100%</td>
<td>128</td>
</tr>
<tr>
<td>TOTAL</td>
<td>23,457</td>
<td>100%</td>
<td>14.5</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Work Plan

- MaineDOT now produces a Work Plan that is updated annually instead of biannually
- Published online with interactive features that is open to the public
- Capital program underfunded at an estimated 30% ~ $100 million per year
- $2.02 Billion over 3 years
Preservation Program

- 2014 Work Plan includes:
  - 258 miles of preservation paving ($72 million)
  - 600 miles of Light Capital Paving ($27 million dollars)
- Analysis finds that biggest shortfall in funding is in preservation (41%) at about $50 million / year
- Workhorse treatments comprised of thin overlays:
  - 5/8” HMA overlay (no shim)
  - ¾” HMA overlay w/ shim
  - 1 ¼” HMA overlay w/ shim
  - Mill & Fill (1 ½” – 2”)
- Key limitation to preservation is cross-sectional shape of roadway in Maine due to nature of roadways
Station 11+00

Project Totals:
Shim Quantity = 1,063 Tons

Shim Quantity
Left: 5.4
Right: 3.6
@ Station (Tons) Accum: 13.3 9.2

Finish Surface
Milled Surface
Existing Surface

Left Slope % Right
0.4 Update -5.6

Maximum Mill (in.)
0.000
Minimum Shim (in.)
0.000
Set Center (in.)
0.000

Lane Width 12 ft

Mark Ups (in.)
Left: 2.375, Center: 2.500, Right: 2.125
Innovations

- Maine is looking to use more treatments other than thin HMA overlays to complement our preservation program
  - Asphalt Rubber Gap-Graded
  - Ultra-Thin Bonded Wearing Course
  - Fog Seals (Travelway & Shoulders)
  - Hot In-Place Recycling
Asphalt Rubber Gap-Graded

Project on I-295 NB in Portland
1 ¾” Mill & Fill
Durability Concerns

- Raveling or “aggregate loss” of HMA has increased in recent years
- Reduction is service life of treatments exceeding 50% in cases
- Driving movement for lighter treatments to maintain investment in roadways
Questions?