R26 Preservation Of High Traffic Volume Roadways

MnDOT R 26 Workshop
Sept 4, 2014
Jerry Geib
MINNESOTA

- MN fun facts
- MnROAD HMA cells
MINNESOTA

12th is total area 86,935 sq. mi.

21st in population 5,420,000

5th in lane miles 285,180

MnDOT

- 916 Interstate centerline miles
- 11,813.9 centerline miles
- 29,288 lane miles
• I-90 is 275.7 mi.
• I-94 is 259.3 mi.
• 1-35 is 259.7 mi.
<table>
<thead>
<tr>
<th>ADT</th>
<th>I</th>
<th>US</th>
<th>MN</th>
<th>total</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>&gt;2,000</td>
<td>-</td>
<td>866</td>
<td>4,314</td>
<td>5,180</td>
<td>43.6</td>
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<tr>
<td>2-5,000</td>
<td>-</td>
<td>1,084</td>
<td>2,059</td>
<td>3,143</td>
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<tr>
<td>5-10k</td>
<td>162</td>
<td>600</td>
<td>784</td>
<td>1,546</td>
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<tr>
<td>10-50k</td>
<td>521</td>
<td>693</td>
<td>571</td>
<td>1,785</td>
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<tr>
<td>50-100k</td>
<td>135</td>
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<td>-</td>
<td>135</td>
<td>1.1</td>
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<tr>
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<td>96</td>
<td>0.8</td>
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</table>
Minnesota

Honeycrisp
A long-term pavement testing facility that gives researchers a unique, real-life laboratory to study and evaluate the performance of materials used in roadway construction.
Flexible Micro surfacing
HiMA micro surfacing

- MnRoad cell 1
- PG 49-34 base AC (vs. 64-22)
- Kraton SBS polymer D0243, at 6%
- Scratch 12 lbs/sy
- Surface course 15 lbs/sy
- 16% emulsion (vs. 13% typical)

- One lane mile on TH 23, District 3
## Cell 1 IRI

<table>
<thead>
<tr>
<th></th>
<th>Passing lane</th>
<th>Driving lane</th>
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<tbody>
<tr>
<td>IRI Before</td>
<td>190 in/mi</td>
<td>125 in/mi</td>
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<tr>
<td>Work completed</td>
<td></td>
<td></td>
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<tr>
<td>IRI After ~Aug 2012</td>
<td>96 in/mi</td>
<td>95 in/mi</td>
</tr>
<tr>
<td>7/10/2013</td>
<td>100 in/mi</td>
<td>106 in/mi</td>
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</table>

~ 10 lane miles/day production rate
**Ultra Thin Bonded Wear Course**

- 2 $\frac{3}{4}$ -3” HMA on Interstate
- Stabilized FDR

**Performance:**
- 3.5 Million ESALs – very little distress
Cell 2, 50/50 RAP to gravel
IRI 54 in/mi driving lane, July 2013

Cell 3 75/25 RAP to gravel
IRI 61 in/mi. driving lane, July 2013

Cell 4 100% RAP
IRI 100 in/mi. driving lane, July 2013
3” WMA overlay, full depth

- Cell 15
- IRI 76.5 in/mi driving lane, July 2013
- Overlay Sept 2008
- Seasonal ride variations occur
5” WMA 2008 on cell16

- 58-34
- 12” of 100% recycle PCC
- Part of a larger study of WMA and different bases
- When built right, similar results after 5 years
MnROAD Chip Seal on I-94
MnROAD Chip Seal on I-94

Video on YouTube “MnDOT chip seal”
By Tom Wood, 3 minutes
CRS-2P on pavement markings
0.36 gal/sy of CRS-2P emulsion
18 lbs/sy of -3/8” granite chip
3 roller passes
Fog seal CSS-1H diluted 1:1 (+shoulders)
0.12 gal/sy and 1’ lap at centerline
TH 56 photo in 2009, fogged about 2001-02
Thermal contraction
Pink and White Lady’s Slipper
Pink and White Lady’s Slipper
Pink and White Lady's Slipper
Contact Information

Jerry Geib
MnDOT
651-234-7352
jerry.geib@state.mn.us