What is Spectacular?

- beautiful in a dramatic and eye-catching way
  - spectacular mountain scenery
- synonyms: striking, picturesque, eye-catching, breathtaking, arresting, glorious; informal out of this world
# 1 Spectacular
Elizabeth (Lizzy) Wood

Youngest Grandchild
31 months old
## Aging Study Update

### MINNESOTA TH 56 SITE LAYOUT

<table>
<thead>
<tr>
<th>14 TO 15</th>
<th>13 TO 14</th>
<th>12 TO 13</th>
<th>11 TO 12</th>
<th>10 TO 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2001</td>
<td>2002</td>
<td>2003</td>
<td>CONTROL</td>
</tr>
<tr>
<td>1 YEAR</td>
<td>2 YEAR</td>
<td>3 YEAR</td>
<td>4 YEAR</td>
<td>Age when treated</td>
</tr>
</tbody>
</table>

**ORIGINAL CONSTRUCTION- 1999**
# 2 Spectacular

Oldest Grandchild
Emma Bongartz
5
TH56 Cores

- Cores
  - Remove chip seal (if any)
  - Cut into two 25-mm layers
  - Test for fracture energy (cracking potential)
  - Recover component asphalt to check aging
Disk-Shaped Compact Tension Test: DC(T)
Higher fracture energy is better.
# 3 Spectacular

Jake Bongartz
3
Future Puller
Aging Study Update

**TH 56 SR Comparison**

- Chip Sealed Yr 5
- Control Section
- Poly. (Chip Sealed Yr 5)
- Poly. (Control Section)

**Notes:**
- Crack repair done
- Trigger Value for Over Lay
Aging Study Update

TH56 Average IRI

R² = 0.8722
R² = 0.9783
# 4 Spectacular

Lovely Bride of 37+ years

Doing the Grandma thing
Telling
# 5 Spectacular

Jennifer Bongartz # 1 Daughter
SFDR

Stabilized Full Depth Reclamation

<table>
<thead>
<tr>
<th>Layer 1</th>
<th>Layer 2</th>
<th>Layer 3</th>
<th>Layer 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot; TBWC</td>
<td>2&quot; 64-34</td>
<td>6&quot; FDR + EE</td>
<td>8&quot; FDR + EE</td>
</tr>
<tr>
<td>1&quot; TBWC</td>
<td>6&quot; FDR + EE</td>
<td>2&quot; FDR</td>
<td>9&quot; FDR + Fly Ash</td>
</tr>
<tr>
<td>26&quot; Class 4</td>
<td>33&quot; Class 3</td>
<td>2&quot; CI 5</td>
<td>Clay</td>
</tr>
</tbody>
</table>

07/14/2008
IRI M/KM

1 M/KM = 69 in/mi
Transverse Cracking

Graph showing the number of transverse cracks over time, with data points for dates ranging from 11/21/08 to 11/21/14.
# 6 Spectacular

Lauren Wood  
Daughter # 2
Rutting
### MnROAD Mainline WB Lanes

<table>
<thead>
<tr>
<th></th>
<th>Passing</th>
<th>Driving</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Vehicles</td>
<td>29,479,935</td>
<td>28,966,801</td>
<td>58,446,736</td>
</tr>
<tr>
<td>Trucks</td>
<td>1,853,728</td>
<td>6,423,768</td>
<td>8,277,496</td>
</tr>
<tr>
<td>MnROAD AADT Adjusted (1-way)</td>
<td>9,983</td>
<td>9,809</td>
<td>19,792</td>
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<tr>
<td>HCA DT</td>
<td>628</td>
<td>2,175</td>
<td>2,803</td>
</tr>
<tr>
<td>BESALs</td>
<td>1,499,926</td>
<td>5,896,628</td>
<td>7,396,554</td>
</tr>
<tr>
<td>CESALs</td>
<td>2,245,017</td>
<td>6,697,017</td>
<td>11,172,034</td>
</tr>
<tr>
<td>Percent of Total Westbound Traffic</td>
<td></td>
<td></td>
<td>72.2%</td>
</tr>
</tbody>
</table>
# 7 Spectacular

Jacob Wood
# 1 Son
Micro Milling
Micro Milling With Micro Surfacing
Before and After 2 Yrs.
# 8 Spectacular

Jessica Rauschke
Daughter
# 3
Micro Surfacing Research
Micro Surfacing Research

- Issues
  - Reflective cracking
  - Snow plow chatter
  - Wear off in 5 to 7 years on high ADT roadways
Hypothesis

- Softer asphalt should reduce cracking
- CQS-1h 40 to 90 pen or PG 64-22 normally used
- Used softer base Asphalts
  - 90 to 200 pen (PG 58-28) CQS-1
  - 200 to 300 pen (PG 49-34) CQS-1S
Micro Surfacing Research

Hypothesis

- More asphalt = increased durability
- Increased emulsion from national ave. 12% to as high as 16%
- No bleeding or shoving
Micro Surfacing Research

- Asphalt to Fines ratio
  - .74 A to 1.0 F Normal
  - .87 A to 1.0 F 14% emulsion
  - .99 A to 1.0 F 16% emulsion

- HMA normally has asphalt to fines ratio of 1 to 1

- Looks more like HMA than Micro
# 9 Spectacular
Value of Fog Sealing
Why Fog Sealing Shoulders
(Picture taken in 2009)

Fog Seal applied 2001
Fog Sealing still working after 4 years
# 10 Spectacular
Pavement Markings
Dealing with in place Pavement Markings

- Trouble with de-bonding of chip seal
- 2 Options
  - Grind off
    - Cost $0.85 to $1.00 linear foot
  - Prime
    - CRS-2p 0.10 to 0.15 gal/y²
    - Cost $0.02 to $0.03 linear foot
# 11 Spectacular
New Role
New Role

- ISSA Executive Technical Director
  - Out reach
  - Update Technical Information
  - Training
  - Support
  - Promote Preventive Maintenance
# 12 Spectacular

The New Boss
Andrea Blanchette
Things I Learned in 38 Years

- Drainage & Compaction
- We have time to do it right
- Doing it right is the cheapest option
- No question is dumb
- When in doubt go with your heart
- Saying No does not mean you’re a bad person
Things I Learned in 38 Years

• It’s only rock and asphalt
• Drainage and compaction
• The shortest path is a straight line
• The best path, the correct path, is not always the shortest path
• Pay attention to the little details
• The simplest answer is usually the best answer
# 13 Spectacular
Ask the Speaker Anything
Play Video
Thank You

New Tractor
LLSS
1500 HP+