



**Something
Spectacular**

Tom Wood
Pavement Specialist

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

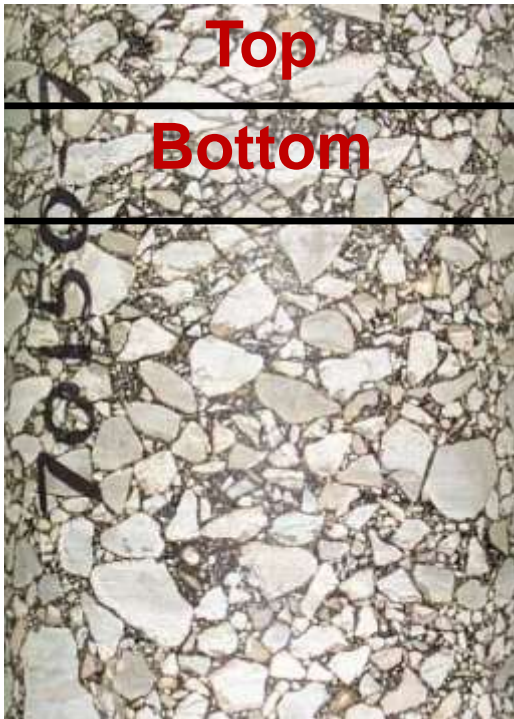
MINNESOTA TH 56 SITE LAYOUT				
14 TO 15	13 TO 14	12 TO 13	11 TO 12	10 TO 11
2000	2001	2002	2003	CONTROL
1 YEAR	2 YEAR	3 YEAR	4 YEAR	Age when treated
ORIGINAL CONSTRUCTION- 1999				

2 Spectacular

Oldest Grandchild
Emma Bongartz
5



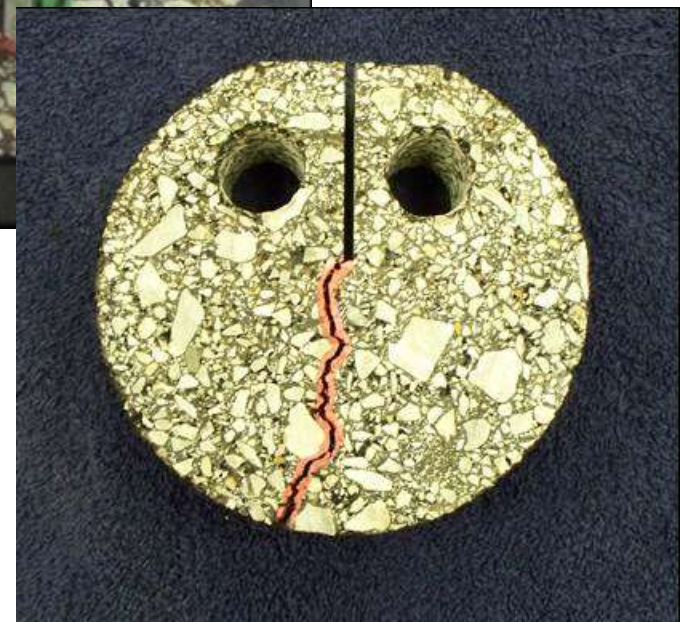
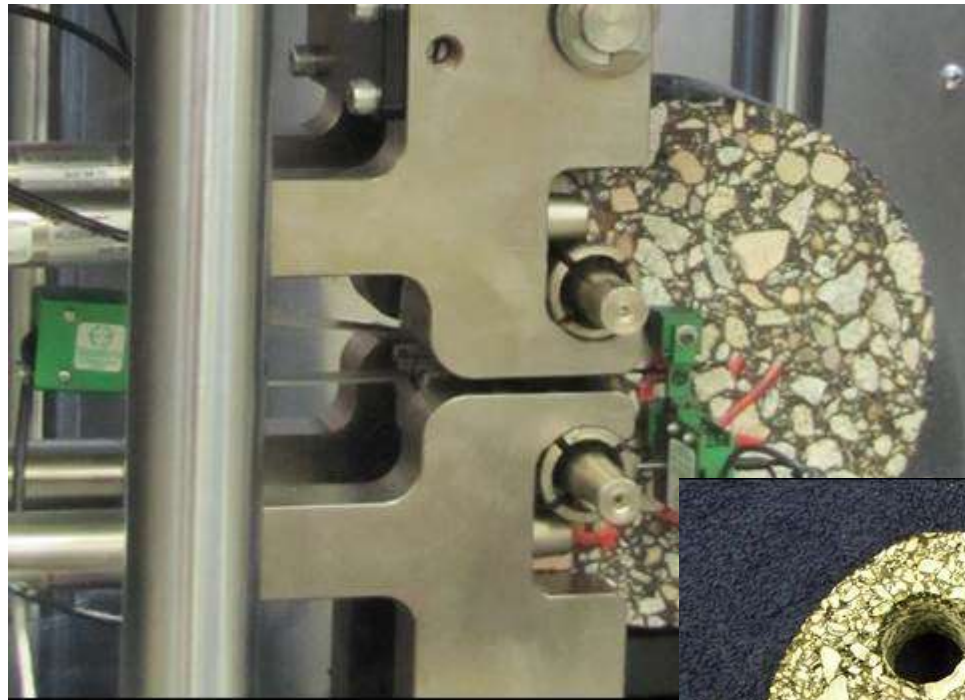
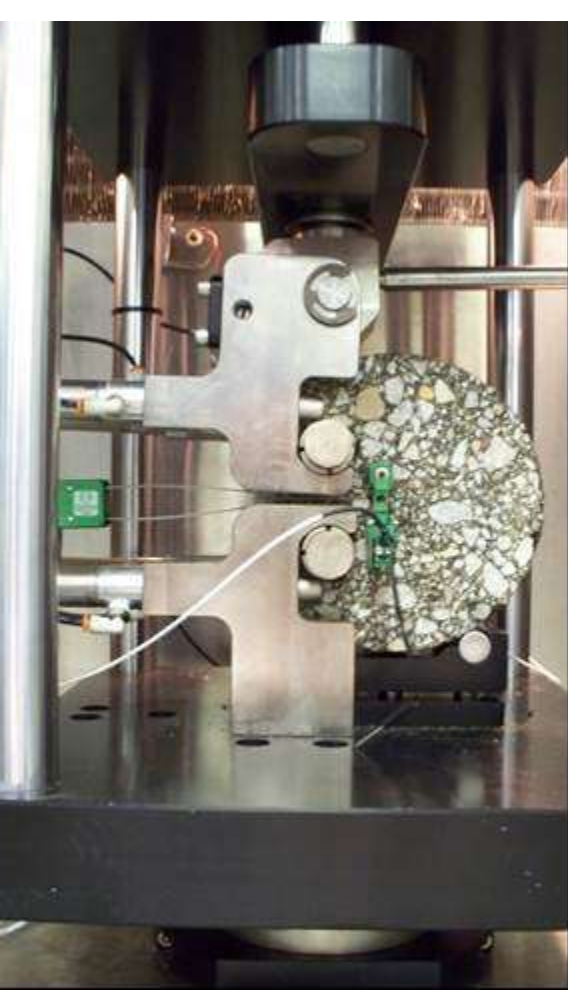
TH56 Cores



25-
mm

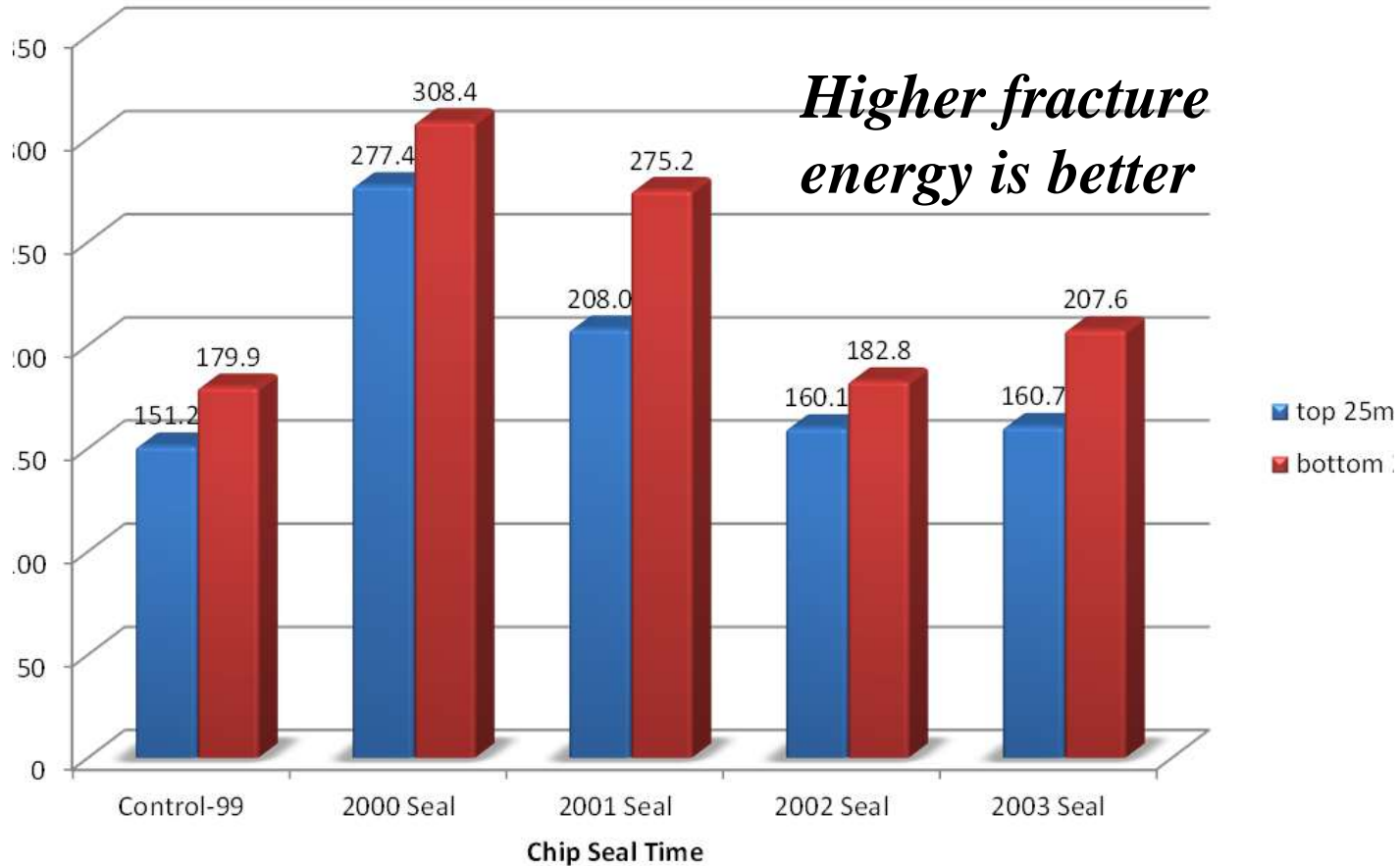
- Cores
 - Remove chip seal (if any)
 - Cut into two 25-mm layers
 - Test for fracture energy (cracking potential)
 - Recover component asphalt to check aging

Disk-Shaped Compact Tension Test: DC(T)



DC(T) Results: TH-56

TH56: DC(t) Data @ -24°C





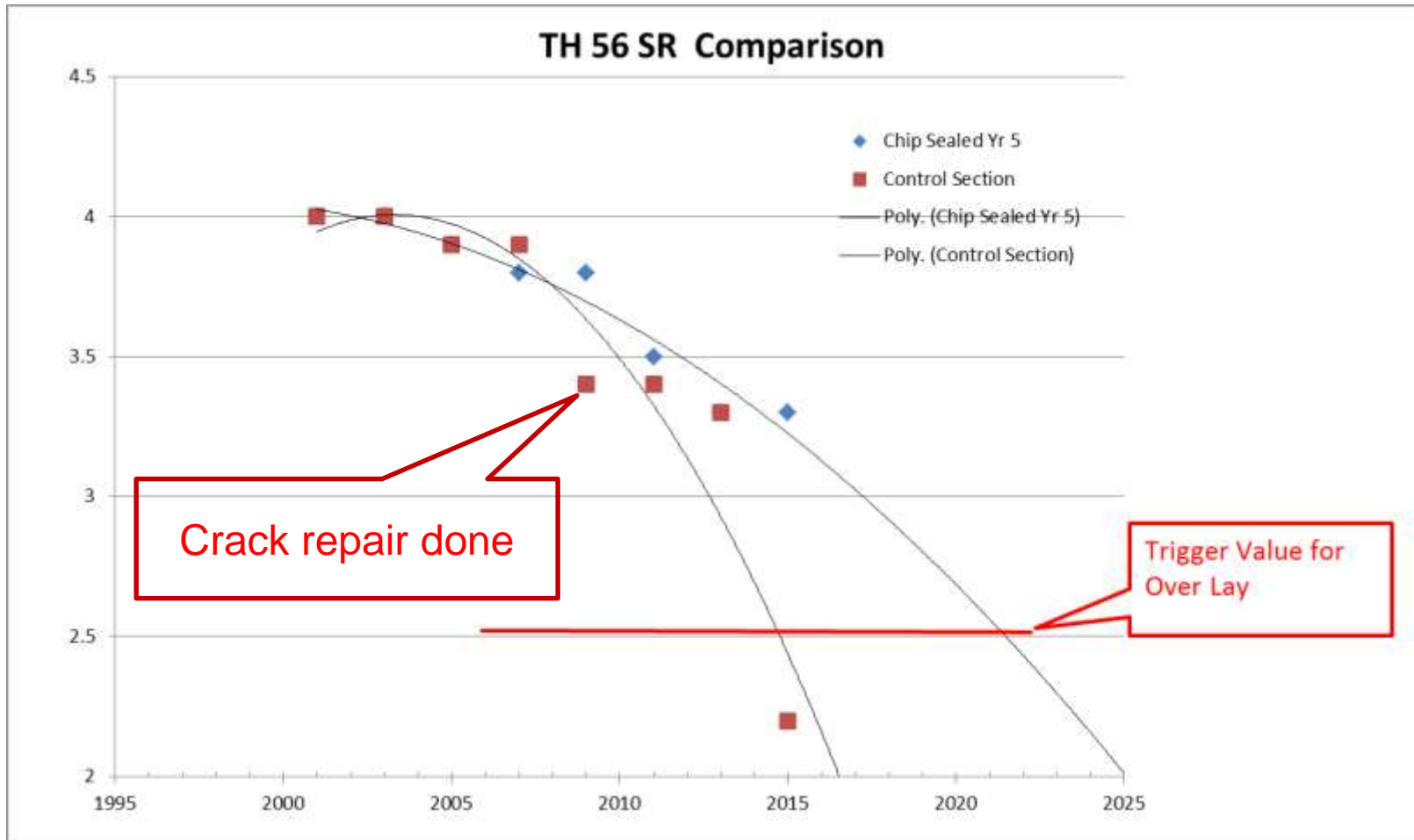
3 Spectacular



Jake Bongartz
3
Future Puller

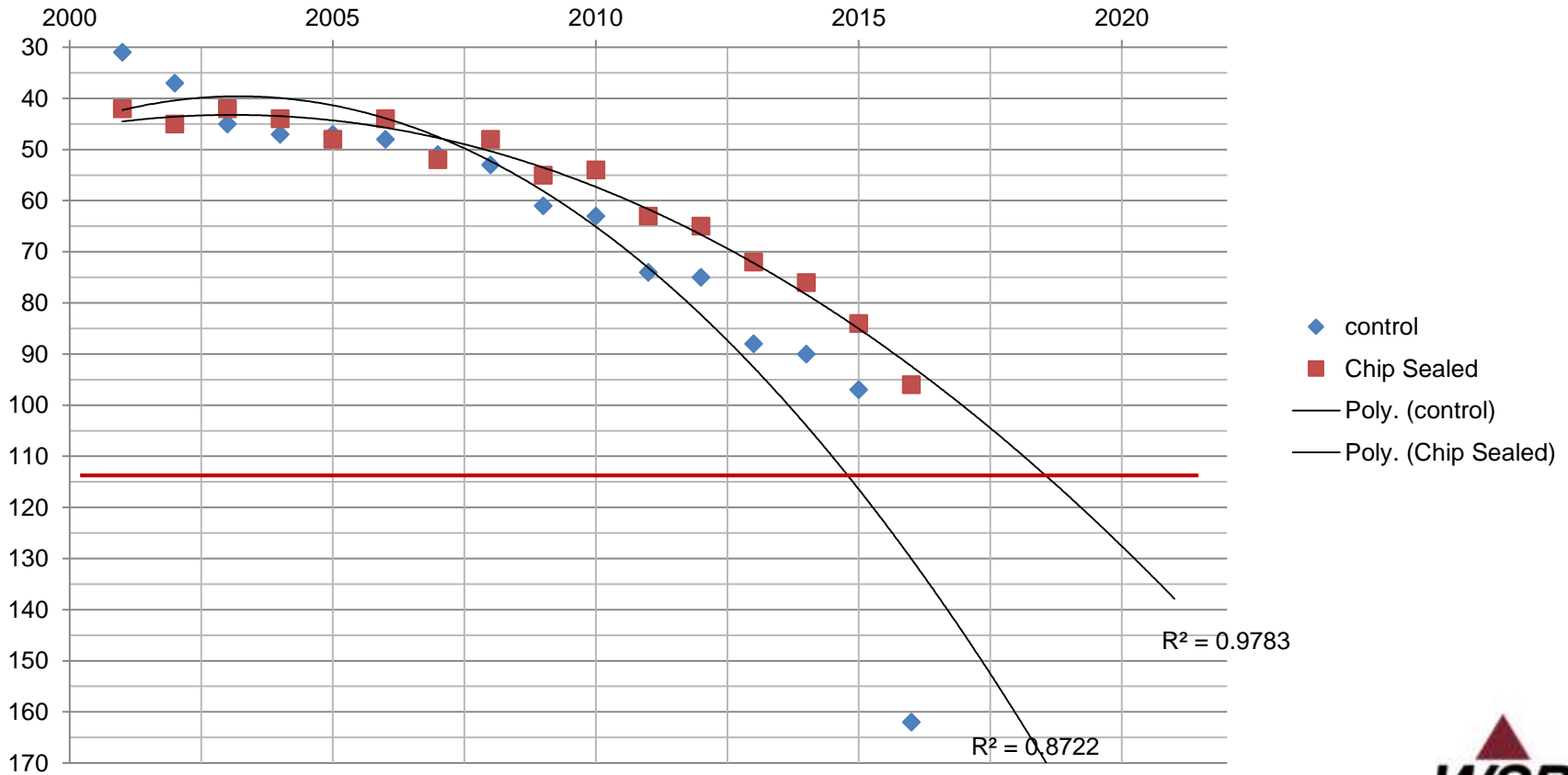


Aging Study Update



Aging Study Update

TH56 Average IRI



4 Spectacular

Lovely Bride of 37+ years



Doing the
Grandma thing



Telling





Telling





5 Spectacular



Jennifer
Bongartz # 1
Daughter

SFDR



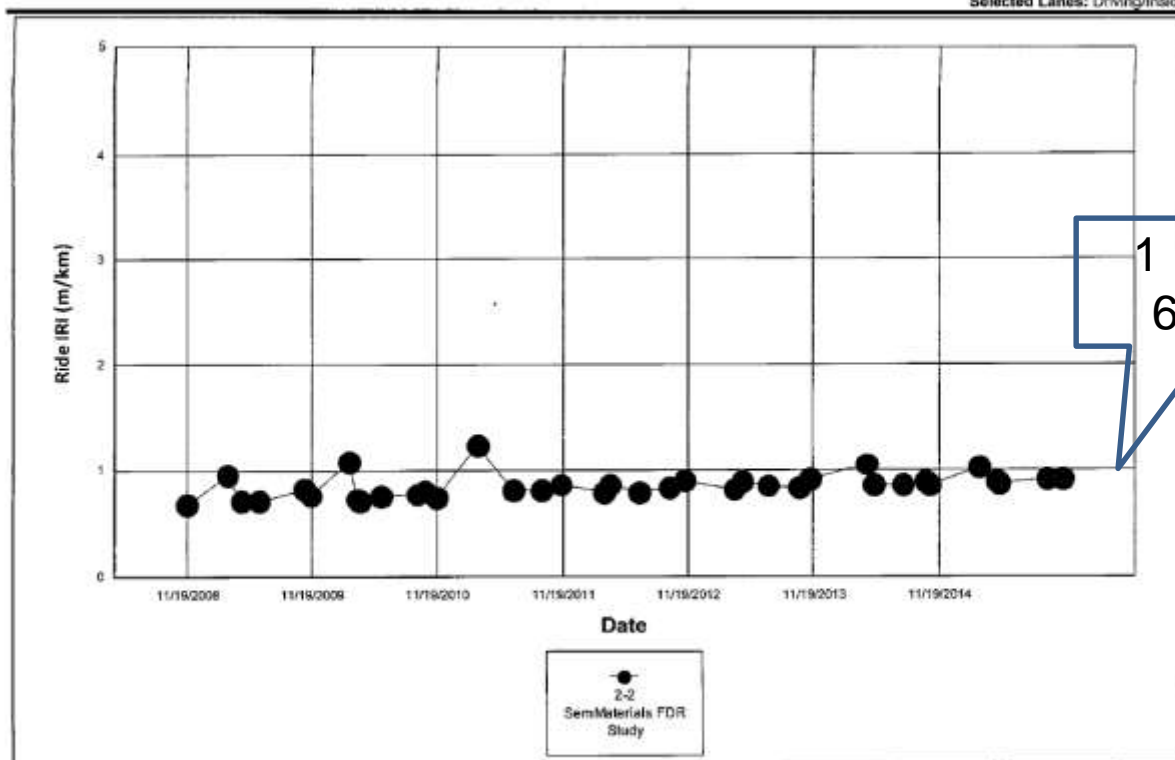
Stabilized Full Depth Reclamation		
2	3	4
1" TBWC	1" TBWC	1" 64-34
2" 64-34	2" 64-34	2" 64-34
6" FDR + EE	6" FDR + EE	8" FDR + EE
6" FDR	2" FDR	9" FDR + Fly Ash
26" Class 4	2" CI 5	
	33" Class 3	Clay
Clay		



IRI M/KM

MnROAD Pavement Performance (Ride-IRI) Report

Selected Lanes: Driving/Inside



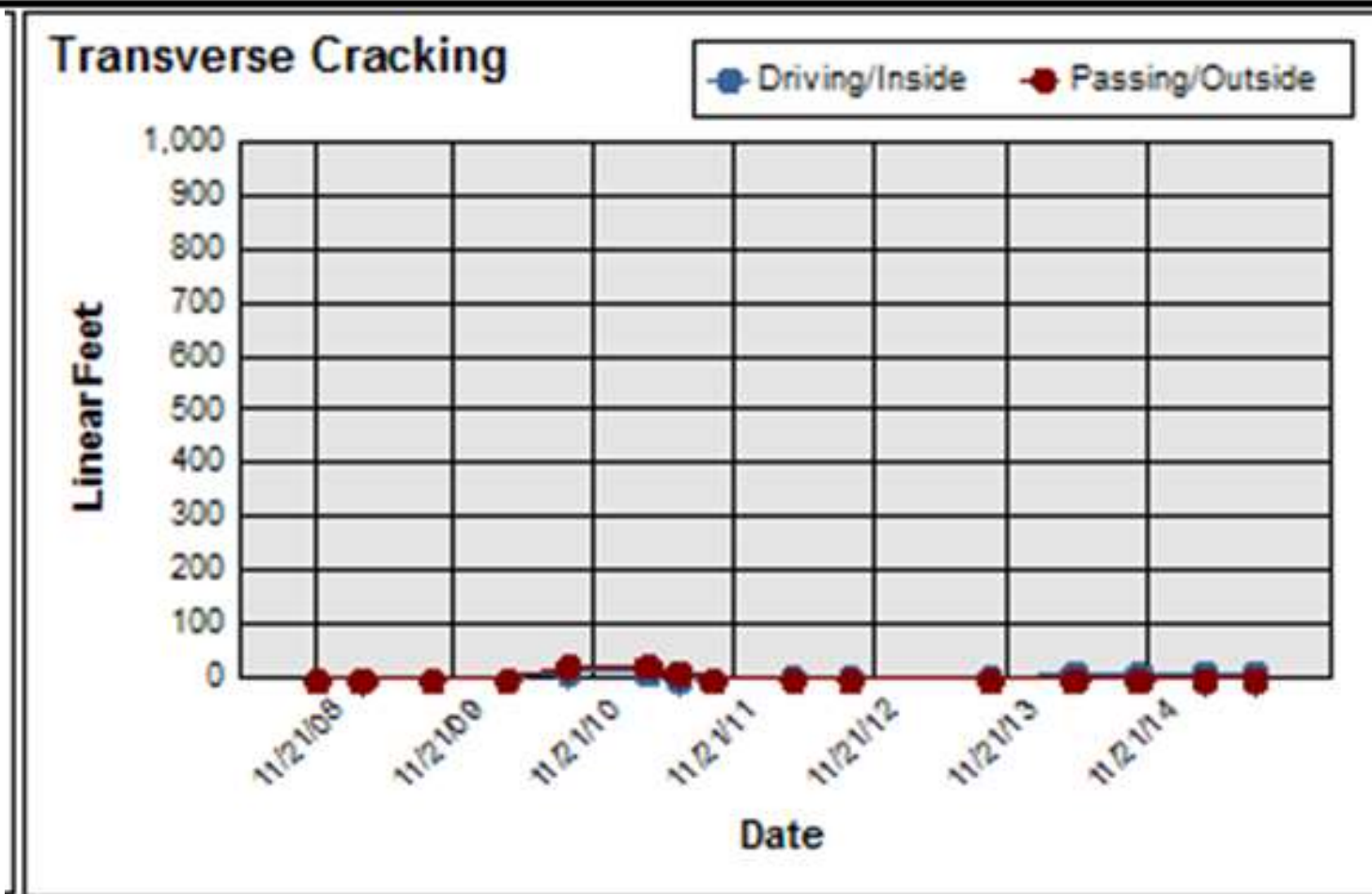
NOTE: This is only a summary of the MnROAD data. Please contact Ben Worst at ben.worst@state.mn.us for a complete set of data for any analysis work.

Report Date: 3/9/2017 12:24:35PM
Version: 17.03.06

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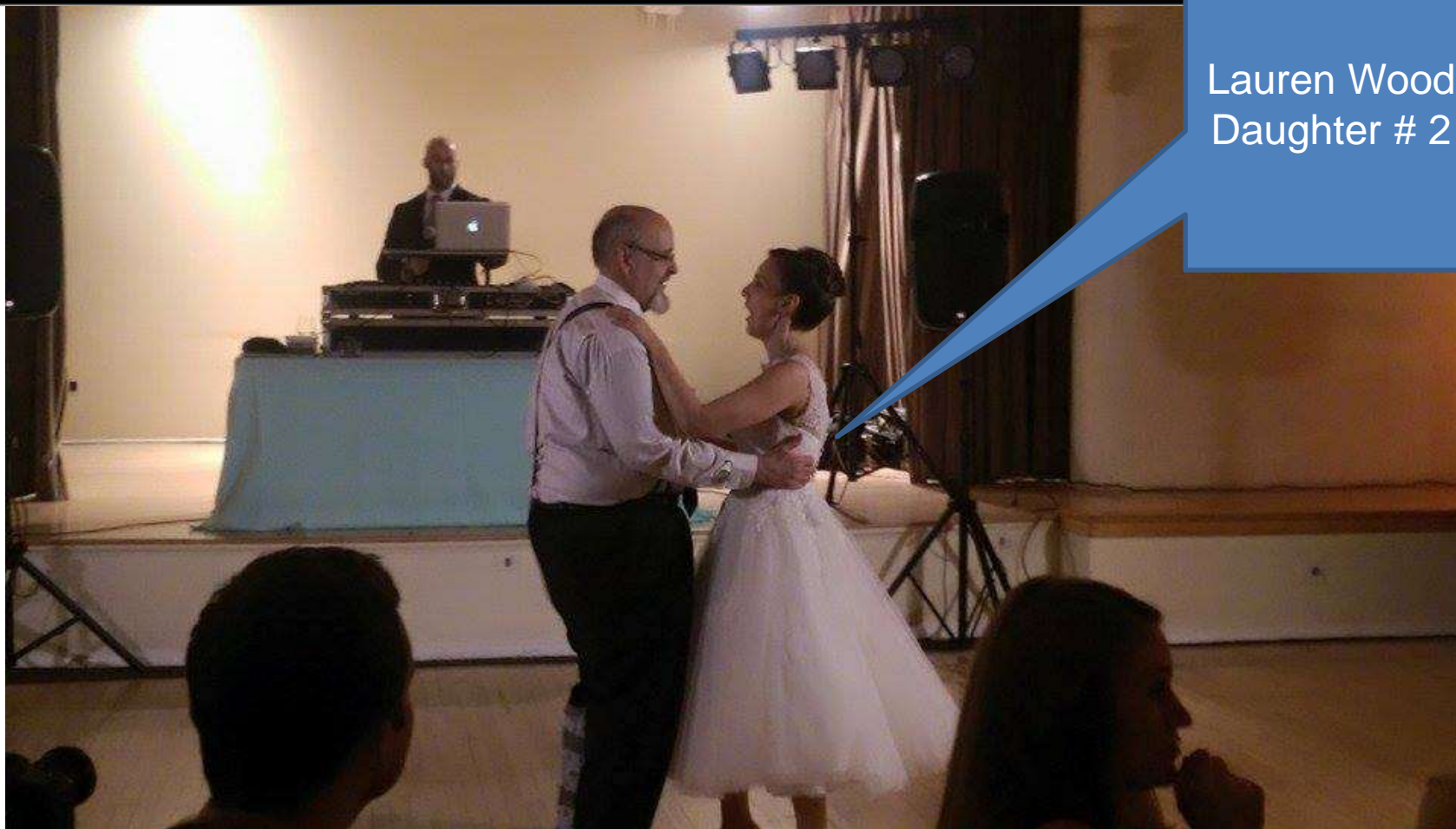
Transverse Cracking





6 Spectacular

Lauren Wood
Daughter # 2





Rutting





3.5 million BESAL Design

MnROAD Mainline WB Lanes			
	Passing	Driving	Total
All Vehicles	29,479,935	28,966,801	58,446,736
Trucks	1,853,728	6,423,768	8,277,496
MnROAD AADT Adjusted (1-way)	9,983	9,809	19,792
HCADT	628	2,175	2,803
BESALs	1,499,926	5,896,628	7,396,554
CESALs	2,245,017	8,927,017	11,172,034
Percent of Total Westbound Traffic			72.2%



7 Spectacular



Jacob Wood
1 Son

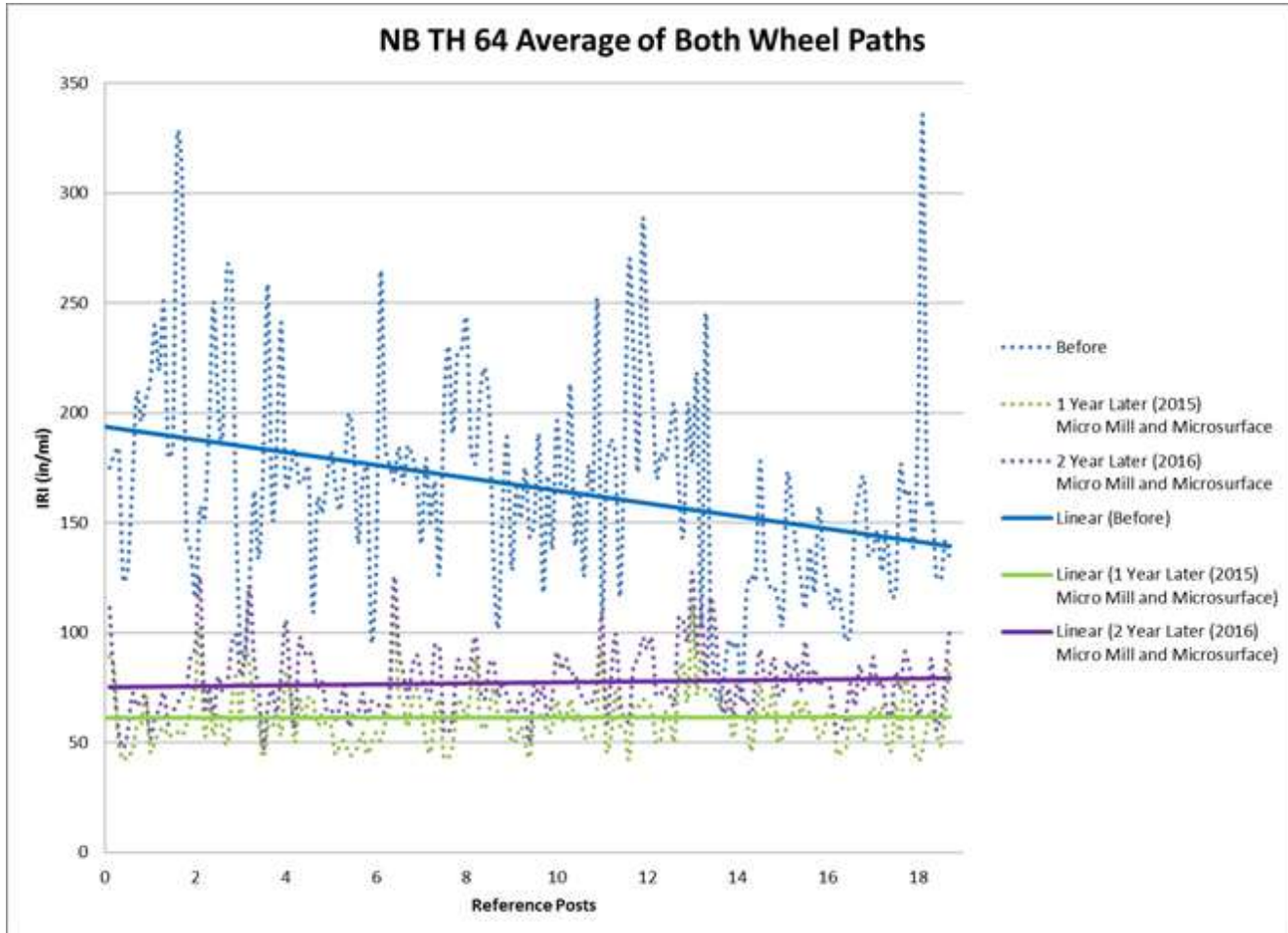


Micro Milling





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



Micro Surfacing Research

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



07/18/2014 10:35

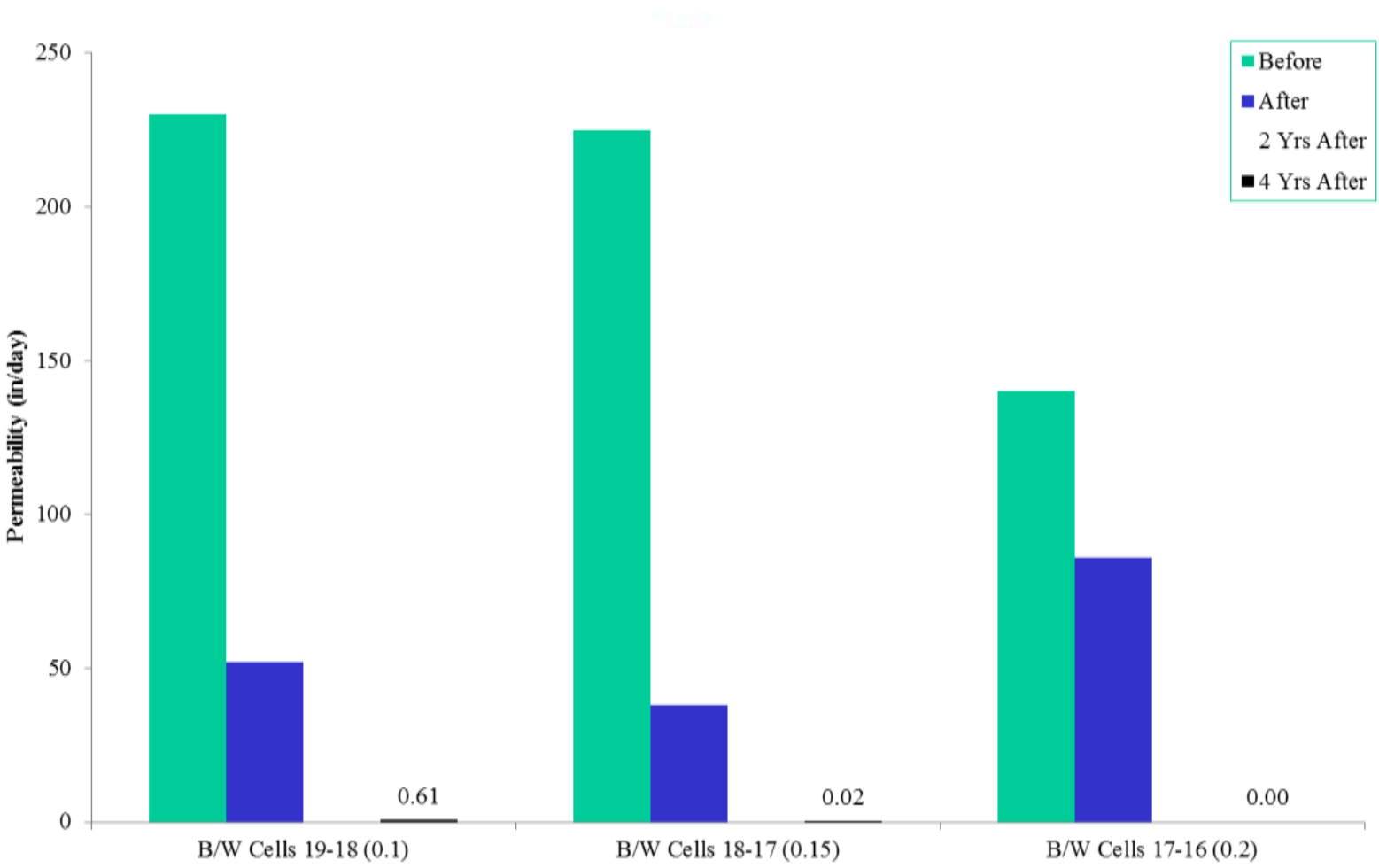


Why Fog Sealing Shoulders (Picture taken in 2009)



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





07/16/2014 16:22

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+

