



SHRP2 SOLUTIONS

STRATEGIC HIGHWAY RESEARCH PROGRAM

R26 Preservation Of High Traffic Volume Roadways

SEPPP May 30, 2014
MPPP and R26
Jerry Geib

U.S. Department of Transportation

Federal Highway Administration

MINNESOTA

MPPP

Sept 2-3, noon-noon

R26, PP for High Traffic Volume Roadways

Sept 3-5, noon-noon

MINNESOTA

- Minnesota data
- MPPP
- R 26 High Volume roads
  MnROAD

MN and KY

- MINNESOTA
- 5th in lane miles
  - 285,180
- 12th is total area
  - 86,935 sq. miles
- 21st in population
  - 5,420,000

- KENTUCKY
- 25th 165,403
- 37th 40,408
- 26th 4,395,000

MN

- 14,339 Roadway miles
  - 16% PCC, 23% BOC, 62% HMA
  - About 30,000 lane miles

- 67.6% GOOD RQI>3.0
- 4.7% POOR RQI<2.0

- FY 2014 $1.9B, $247M/yr for PP

MINNESOTA

U.S. Department of Transportation
Federal Highway Administration

MINNESOTA

U.S. Department of Transportation
Federal Highway Administration

MPPP

Day 1. Sept 2, 2014. Tuesday 1pm

- Business meeting
- Task forces: Products, Research, Certification
- Roundtable: Share information, quantify deliverables
- Roundtable: Emulsion task force, specs

MPPP

Day 2. Sept 3, 2014. Wed am

- Agency Reports: successes, challenge, future direction, Q&A
- Discussion of Treatments and Processes: concrete preservation, inplace recycling, scrub seals, crack sealing/filling, micro surfacing/slurry, chip sealing/for sealing

R26 Pvmt Pres for High Volume Roads

Day 2. Sept 3, 2014. Wed pm

- PP – Jim Moulthrop
- R26 David Peshkin
- CIR and Thin HMA
- PCC rehab

R26 Pvmt Pres for High Volume Roads

Day 3. Sept 4, 2014. Thursday

AASHTO, FHWA,TFHRC

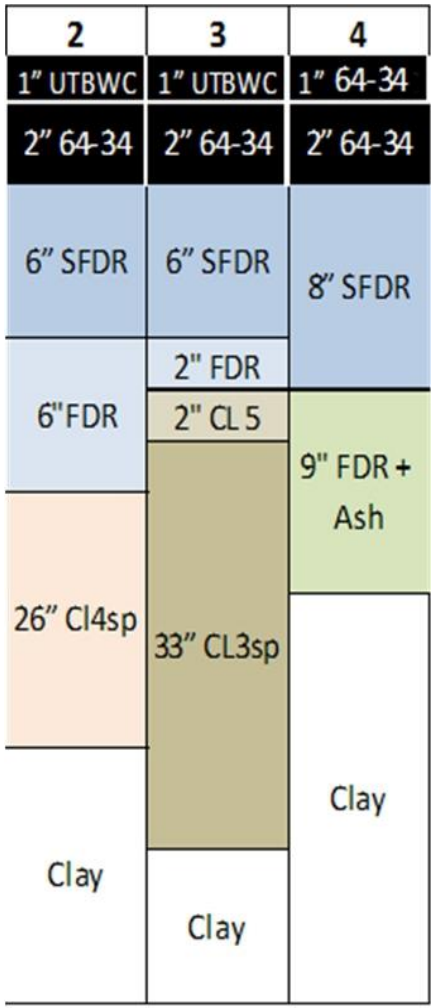
MnROAD HMA and PCC activities

MnROAD tour

MnROAD

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

Ultra Thin Bonded Wear Course



U.S. Department of Transportation
Federal Highway Administration

- 2 ¾ -3" HMA on Interstate
- Stabilized FDR
- Performance:
  - 3.5 Million ESALs – very little distress

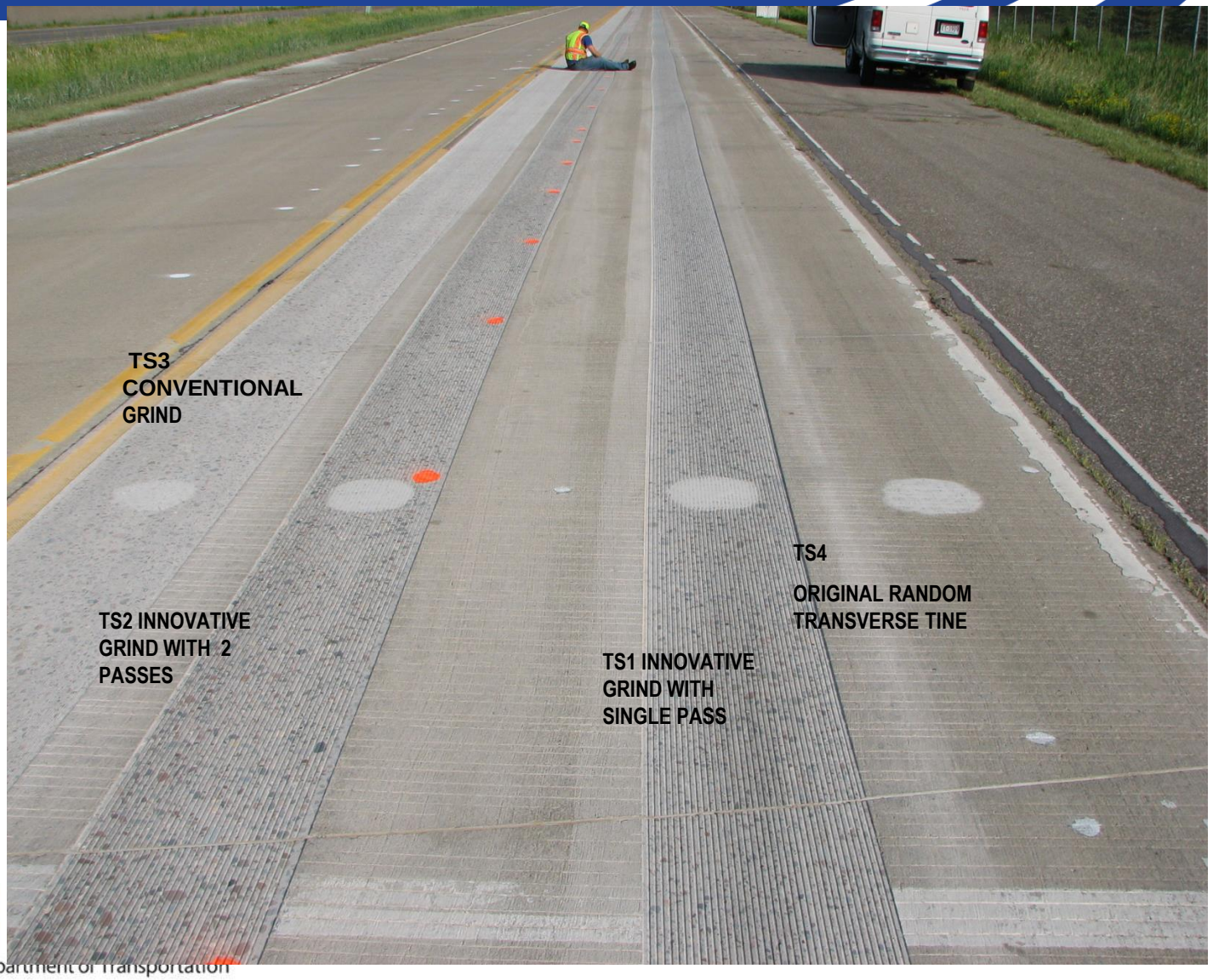
Quick fix, beyond true preventive maintenance

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

INNOVATIVE GRIND



PCC Surface Characteristics (Diamond Grinding)

Results

- Noise/Durable/Safety Improvements
- Partnership with industry, states, FHWA
- Working with the environmental groups
- Cost are becoming more competitive

Benefits

- Implementation:94 Clearwater, 52, 35 Duluth
- Good for areas where no room for noise walls
- Other states are requesting spec

R26 Pvmt Pres for High Volume Roads

Day 4. Sept 5, 2014. Friday am

- How to WORKSHOP
  - Emulsion
  - Chip sealing, micro surfacing
  - PCC repair
- Summary and Take Aways

REPORT S2 – R26 – RR - 1

Pavements with high reductions in conditions:

- > 4 or 5 PCI/PCR
- > 7 to 8 in./mi of IRI per year

Likely affected by structural or subsurface material issues.

NOT good PP candidates

MINNESOTA

http://www.mrr.dot.state.mn.us/research/seasonal_load_limits/thawindex/frost/fs_marshall.asp

Marshall County Frozen Soi...

File Edit View Favorites Tools Help

FWD | Lync 2010 Help | Research Tracking - Hom... | RAP and 864 | Roadway Data Glossary - ... | Welcome to StayWell Onli... | Learning Center | Tools and Resources

MnDOT Materials & Road Research

FROST and THAW DEPTHS

Office of Materials & Road Research

Search | E-mail | Help

Seasonal Load Limits

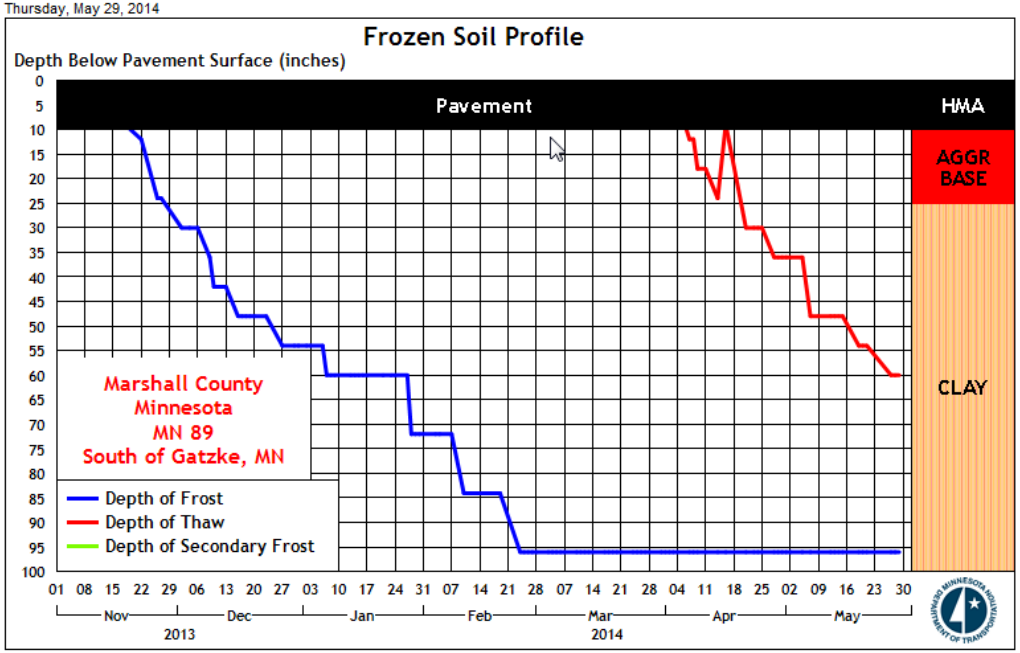
MnDOT Home
FAQ
Topics A to Z
Search MnDOT
Info@DOT

511mn.org

Get Adobe Reader

Marshall County Frozen Soil Profile
(operating sensors to a maximum depth of 96 inches)

Thursday, May 29, 2014



4:50 PM
5/29/2014

Contact Information

Jerry Geib
MnDOT
651-366-5496
jerry.geib@state.mn.us

MnROAD

Subtitle

- Level 1
  - Level 2

MnROAD

Subtitle

- Level 1
  - Level 2

MINNESOTA

ADT	I	US	MN	total	%
>2,000	-	866	4,314	5,180	43.6
2-5,000	-	1,084	2,059	3,143	26.4
5-10k	162	600	784	1,546	13.0
10-50k	521	693	571	1,785	15.0
50-100k	135	-	-	135	1.1
>100k	96	-	-	96	0.8

U.S. Department of Transportation
Federal Highway Administration

Micro Surfacing
Cell 1

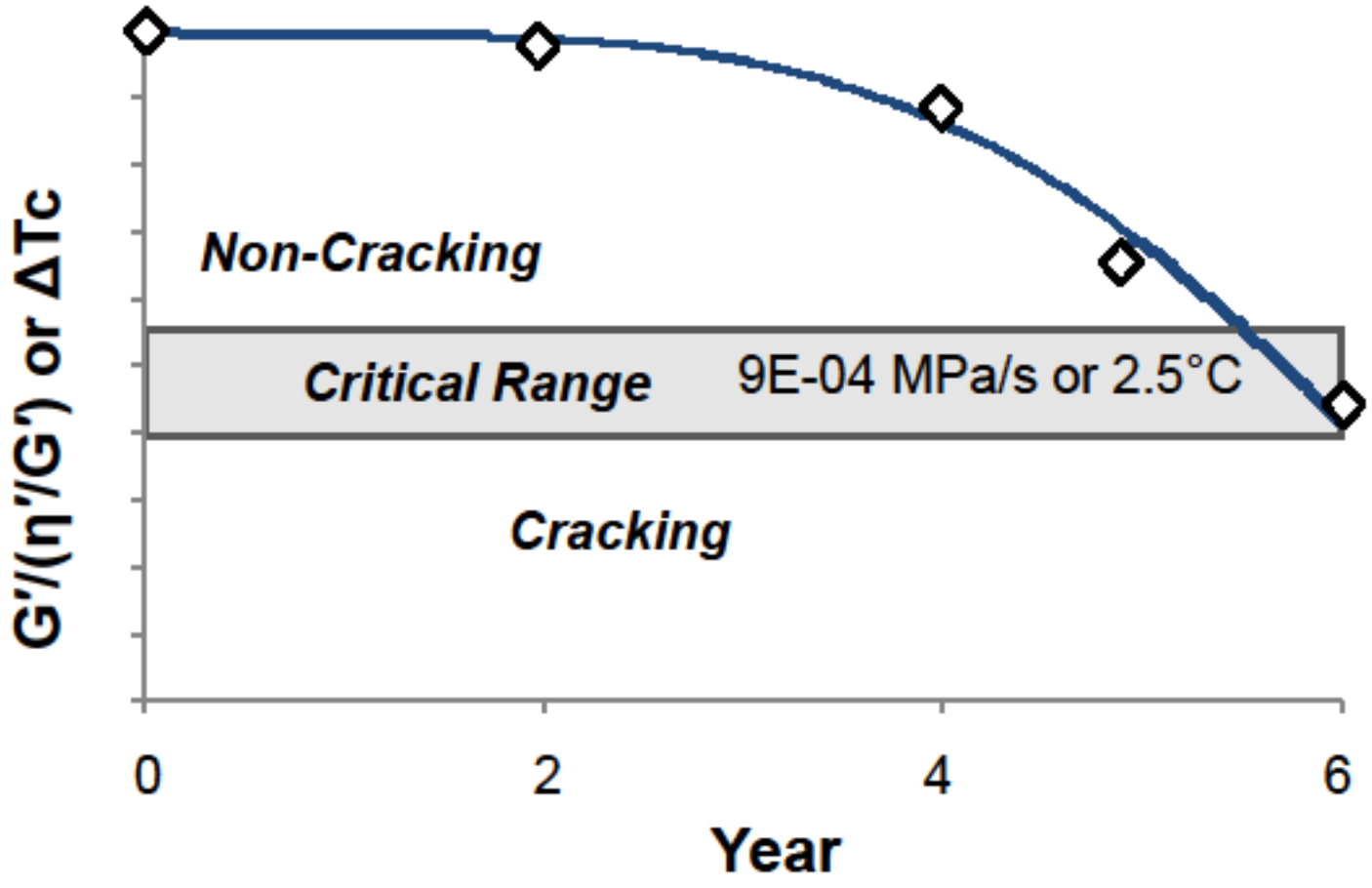
- 6” HMA+ 33” CL 4, 1993
- Severe transverse & Longitudinal wheel path
- 2006 Right lane:1½ inch mill & fill PG 52 - 34

- Goal:

Find a better “cheap fix” for worn out pavements

U.S. Department of Transportation
Federal Highway Administration

Concept


G'/(η'/G') or ΔTc
Non-Cracking
Critical Range
9E-04 MPa/s or 2.5°C
Cracking
0
2
4
6
Year