

## MnROAD-NCAT Pavement Preservation Study




SEAUPG  
Williamsburg, Va.  
Mary Robbins, PhD, NCAT  
Jerry Geib, MnDOT  
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## MnROAD-NCAT Partnership










**Focusing on 2 National Research Needs**  
National Pavement Preservation Study  
Development of a National Cracking Test




## Pavement Preservation

**RIGHT TREATMENT  
RIGHT PAVEMENT  
RIGHT TIME**  
BE **PROACTIVE** 'NOT' REACTIVE!

## Pavement Preservation

“A program employing a network level, long-term strategy that enhances pavement performance by using an integrated, cost-effective set of practices that extend pavement life, improve safety and meet motorist expectations”

- FHWA Pavement Preservation Expert Task Group




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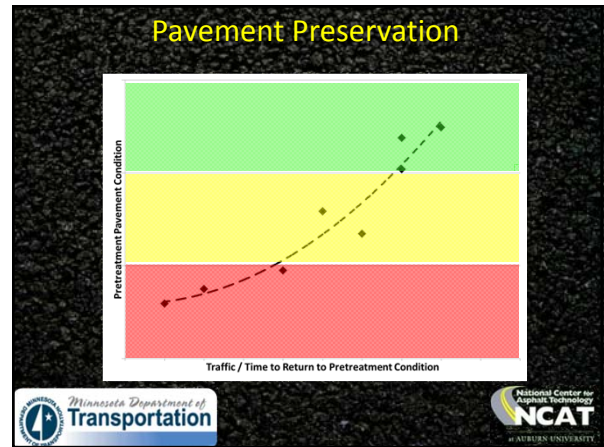
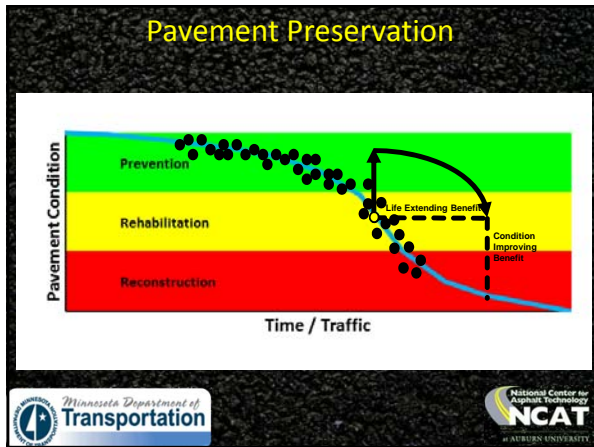
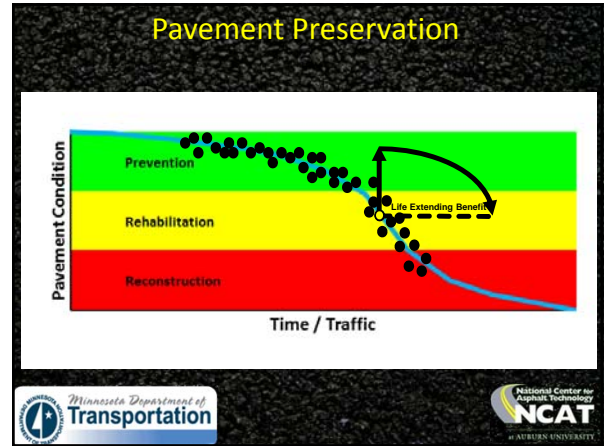
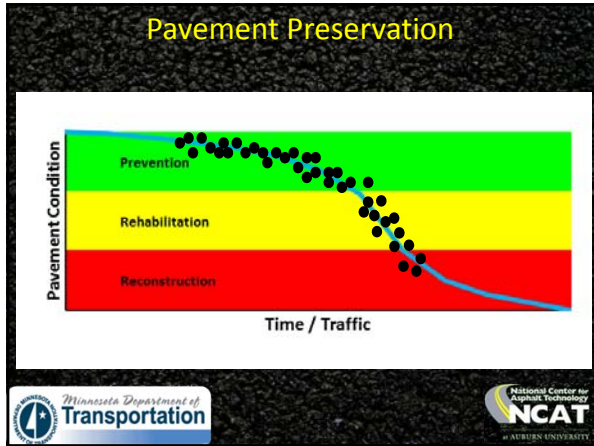



## Pavement Preservation Study

**Objectives:**

- 1) Quantify life extending benefit of study treatments
- 2) Sampling/testing methods for construction quality

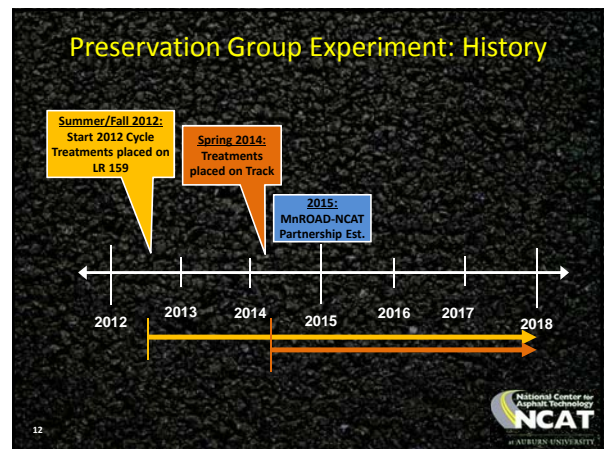


Lee Road 159, Auburn, Alabama

## PG 2012

Minnesota Department of Transportation


National Center for Asphalt Technology  
NCAT  
AUBURN UNIVERSITY





**Lee Road 159**  
**Pavement Preservation Experiment**  
**to Reduce the Cost to Maintain Your Roads**

**Funding Provided by:**  
 Alabama, Mississippi, Missouri, North Carolina,  
 Oklahoma, South Carolina, Tennessee, and FP2 via  
 Auburn University and the Lee County Commission



**Pavement Preservation on Lee Road 159**



- Low ADT roadway
- Very high % trucks
- 14-year old 5½" pavement
- Diverse pavement condition
- Load data provided by quarry and asphalt plant

**Pavement Preservation on Lee Road 159**

1. Rejuvenating Fog Seal	14. Fiberbat + Microsurfacing (Cape)
2. Fiberbat	15. Scrub Seal + Microsurfacing (Cape)
3. Control	16. Scrub Seal
4. Control	17. Distress Demo Section
5. Crack Seal (CS)	18. Fiberbat + HMA Thinlay (HMA Cape)
6. Single Layer Chip Seal	19. HMA Thinlay (PG 67-22)
7. CS + Single Layer Chip Seal	20. HMA + 100% Foamed Recycle Inlay
8. Triple Layer Chip Seal	21. HMA Thinlay (PG 76-22)
9. Double Layer Chip Seal	22. Ultra Thin Bonded Wearing Course
10. Microsurfacing + Single Chip (Cape)	23. HMA Thinlay (50% RAP)
11. Microsurfacing	24. HMA Thinlay (5% PC-RAS)
12. CS + Microsurfacing	25. HMA Thinlay (High Polymer)
13. Double Layer Microsurfacing	






**Track "PG" Traffic Continuation**




**Pavement Preservation Data Collection**

- Rutting, roughness, texture
- Surface friction
- Subgrade moisture contents
- Falling weight deflectometer (FWD)
- Visual and video based cracking measurement

**MNROAD-NCAT PARTNERSHIP**  
**PG 2015**




### MnROAD & NCAT Partnership

- Development
  - Informal in the past
  - June 2014 @ MnROAD
  - October 2014 @ NCAT
  - Formalized in 2015
  - FP<sup>2</sup> / NCPP Participation
- Partnership Benefits
  - Individual Strengths of Each Other
  - Operations / Data Sharing / Analysis
  - Greater National Appeal



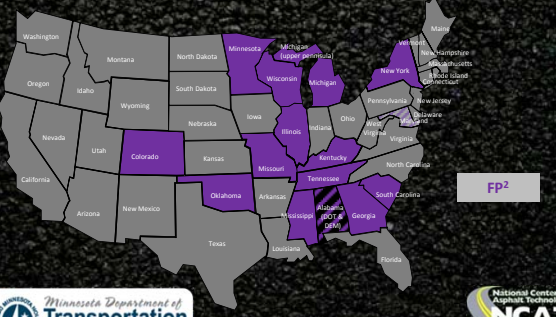




### PG 2012 Research Sponsors








### PG 2015 Research Sponsors







### One Project, Two Climates

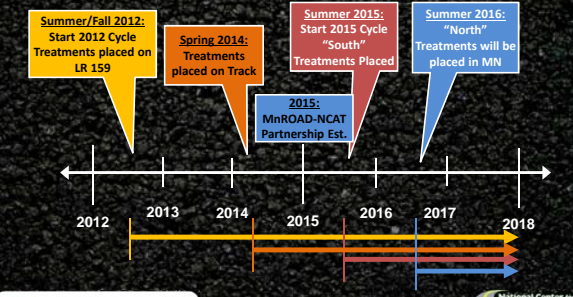






### 2015 Preservation: One Project, Two Climates, Four Sites

- Continue monitoring '12 sections (Track & 159)
  - To capture life extending benefit curve data
- Partnership with MnROAD for nationwide scope
  - Build low-volume and high-volume sections in MN
  - Build high-volume sections in AL

### Preservation Group Experiment: History



### Higher ADT Off-Track Preservation

- US-280 3 miles to east of Track
- 17,000 ADT, ≈9 year old surface
- Westbound outside lane
- ≥ MP 128.0 to MP 132.6
- Tenth mile sections

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### Treatment Types

- Control Sections
- Surface Treatments
  - Crack Sealing
  - Fog Seal
  - Chip Seals
  - Scrub Seals
  - Microsurfacing
  - Combinations (Cape Seals)
- Cold Recycling + 1" overlay
  - Cold-in-place (CIR)
  - Cold Central Plant Recycle (CCPR)
- Thin Overlays (3/4")
  - Dense Graded (4.75 mm) ABR, Virgin
  - OGFC
  - UTBWC
  - Combinations

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### South Treatments Placed Aug/Sept 2015

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### South Treatments – Calibration

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### South Treatments – Verification

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### Timeline

Timeline of project milestones:

- Spring/Summer 2015: "South" Treatment Layout/Designs
- Aug/Sept 2015: "South" Construction
- Dec 2015: Sponsor Meeting @ NCAT
- 2015-2016: "North" Treatment Layout/Designs
- Spring 2016: Sponsor Meeting @ NCAT
- Summer 2016: MnROAD Construction
- Fall 2016: Sponsor Meeting @ MnROAD

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Questions ?



**Dr. Mary M. Robbins**  
*Assistant Research Professor*

277 Technology Parkway  
Auburn, AL 36830

Phone: (334) 844-7303  
Cell: (334) 750-2076  
Email: [mmr0001@auburn.edu](mailto:mmr0001@auburn.edu)

[www.ncat.us](http://www.ncat.us)

