MnROAD-NCAT Partnership
Focusing on 2 National Research Needs
National Pavement Preservation Study
Development of a National Cracking Test

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

Pavement Preservation Study
Objectives:
1) Quantify life extending benefit of study treatments
2) Sampling/testing methods for construction quality
Pavement Preservation

Life Extending Benefit

Pavement Preservation Condition Improving Benefit

Pavement Preservation

Pavement Condition

Prevention

Rehabilitation

Reconstruction

Time / Traffic

Pavement Preservation

Pavement Condition

Prevention

Rehabilitation

Reconstruction

Time / Traffic

Preservation Group Experiment: History

Summer/Fall 2012:
Start 2012 Cycle
Treatments placed at LR 159

Spring 2013:
Treatments placed on Track

2015: MnROAD-NCAT Partnership Est.

Lee Road 159, Auburn, Alabama

PG 2012
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

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

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
    - FP2 / 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

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
  - OGFG
  - UTBWC
  - Combinations

South Treatments Placed Aug/Sept 2015

South Treatments — Calibration

South Treatments — Verification

Timeline

- Spring/Summer 2015: South Treatment Layout/Design
- Aug/Sep 2015: South Construction
- Dec 2015: Sponsor Meeting @ NCAT
- 2016-2017: North Treatment Layout/Design
- Fall 2016: Sponsor Meeting @ MnROAD
- Spring 2016: Sponsor Meeting @ MnROAD
- Summer 2016: MnROAD Construction
- 2015-2016: “North” Treatment Layout/Design
- 2017: Summer 2016: MnROAD Construction

2015

2016

2017
Questions?

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