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 the life extending benefits of study treatments
2. Provide guidance on appropriate inspection and sampling and testing methods for use in construction quality assurance.
Pavement Preservation

Pavement Condition

Prevention

Rehabilitation

Reconstruction

Time / Traffic
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
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 (Cape)
11. Microsurfacing
12. CS + Microsurfacing
13. Double Layer Microsurfacing
14. Fibermat + Microsurfacing (Cape)
15. Scrub Seal + Microsurfacing (Cape)
16. Scrub Seal
17. Distress Demo Section
18. Fibermat + HMA thinlay (HMA Cape)
19. HMA Thinlay (PG 67-22)
20. HMA + 100% Foamed Recycle Inlay
21. HMA Thinlay (PG 76-22)
22. Ultra Thin Bonded Wearing Course
23. HMA Thinlay (50% RAP)
24. HMA Thinlay (5% PCRA$)
25. HMA Thinlay (High Polymer)
Pavement Preservation on Lee Road 159

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

MnROAD-NCAT Partnership

Focusing on 2 National Research Needs
National Pavement Preservation Study
Validation of Cracking Test(s) for Mix Design and QA
Thermal Crack

We all have a stake in A to B
National Pavement Preservation Effort

- **Partnership Development**
  - Partnership formalized in July 2015
  - Build off the strength of NCAT and MnROAD
  - States / Academia / Industry involvement
  - FP² / National Center for Pavement Preservation

- **Study / Test Sections**
  - North (Minnesota) / South (Alabama) Climatic Zones
  - Low and High Volume Roads both locations
  - Common (Core) Treatments in study
  - Provide consistently collected data / analysis

PG 2015 Research Sponsors
2015 Preservation Continuation/Expansion

- Continue monitoring sections on LR 159
- Build new sections on higher ADT roadway in Alabama
- MnROAD to build low and high traffic experiment in 2016 with same core treatments for cold climate.

Higher ADT Off-Track Preservation

- US-280 3 miles to east of Track
- 17,000 ADT, ≈9 year old surface
- Westbound outside lane
- Tenth mile sections
- Repeat Lee Road 159 (±)
- Add CCPR, CIR
- Thin overlays with RAP & RAS
Treatments

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

Crack Sealing
Scrub Seal

Fibermat Chip Seal