Preventive Maintenance on High Speed Roadways – Operational Issues

SHRP 2 R26 Preservation of High-Traffic-Volume Roadways

September 3, 2014, Minneapolis, MN

Mark Watson, MnDOT Maintenance
Outline

Introduction -
  • Minnesota DOT (MnDOT) - Metro District
  • Budget & Funding Levels
  • Treatments & Program

Issues
  • Striping
  • Traffic
  • Managing Public Expectations
  • ADA

Summary
• ~3M people (55% of State population)
• $141.7B Economy
• $357M Annual Construction Program
• 145 Average No. of Construction Projects
• 4,064 Lane Miles (1,095 Centerline Miles)
Bridge & Road Construction ("BARC") - Not PM

- ~$1.2M Contract Pavement Project
- ~$350k Materials “In-House” Maintenance

Preventive Maintenance (PM) $4.5 - $5.0M
- Dist. Set-Aside (Programmed $ not Projs.)
- Contract Work
- Supportive Materials Engineer
- PM Program for 14+ Years
Treatments

Surface Treatments

- Ultra-Thin Bonded Wear Course (UTBWC) NovaChip Type Spec
- Micro-Surface
- Chip Seal & Cape Seals
- Fog Sealing (Shoulder Only)

Localized Treatments

- Crack/Joint Sealing
- Mastic

Concrete Pavement Repair (CPR)

Bridge PM (Epoxy Chip Seals, Joint Seals)
Treatments
Treatments
Striping

- #1 Issue Impacting Preservation Treatments
- Chemical & Mechanical (Plows)
- Life of Markings vs. Life of Pavement
Striping

- Two Coat System Creates Recessed Area
- Before Recessing: 40-90% Loss
- After Recessing: 80-90% Retained
Evaluation of Pavement Markings on Challenging Surfaces

- CTRE at Iowa State University, MnDOT, Vogel, DOW, VISILOK
- Evaluating 10 Test Sections:
  - MicroSurface (4-lane) & Chip Seal (2 lane)
  - HighBuild, Latex, HPS4 (Epoxy), MFUA-10 (MnDOT Modified Urethane)
  - With/Without Primer
  - Centerline, Edgeline
Traffic

Restricts Treatment Type & Work Times

- More Micros & less Chip Seals
- Start-Stops
- Intersections
### Allowable Lane Closure

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**Totals:**

- MON: 81681
- TUE: 83720
- WED: 85195
- THU: 87214
- FRI: 89708
- SAT: 85503
- SUN: 73730
- **Total:** 61476
Managing Expectations

Difference B/W “Worst First” & PM

• Metro uses same treatments for both applications
• “How come we got this & not a new road!”
• “You were just here!”

Texture, Noise

• Near Homes & Businesses
• Not just cars - bikers
Now required on all Micro & CapeSeal Projects

- Lengthens/complicates project delivery
- Existing Slopes
- Increased Costs
Summary

• MnDOT has 14+ years experience of coordinated preservation efforts
• Close collaboration within Dept. & Contractors Supplier is critical for success
• Funding Challenges (Needs > Resources)
• Making Progress on Striping
• Communication & Outreach can be improved
• ADA will now be incorporated into projects
• In-spite of Issues & Challenges, PM has yielded substantial benefits & has wide support
Summary

No Seal

Seal