Pavement Preservation – Need and Return

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Presentation Outline

• What is FP² Inc.?
  ➢ Supporters
• Pavement Preservation-what is it?
• Project Selection & Flexible Techniques
• The NEED
• The RETURN
• Q/A
What is FP²

- What is FP² Inc?
  - An Industry supported trade association
- Purpose of FP² Inc?
  - Promoting the importance of protecting and preserving the huge investment in our nation’s pavement infrastructure
Supporters

• Who supports FP² Inc?
  ➢ Associations
  ➢ Contractors
  ➢ Material Suppliers
  ➢ Chemical suppliers
  ➢ Equipment manufactures
  ➢ Consultants
What do we do?

• **Purpose**
  - *Advocacy*: educate public officials at all levels.
  - *Promotion*: sponsor key events, publish the Pavement Preservation Journal, distribute educational materials
  - *Research*: promote the U.S. Federal Highway Administration System (FHWA) Preservation Roadmap; serve on several Transportation Research Board (TRB) committees
What do we do?

• FP² Inc. financially supports
  ➢ The National Center for Pavement Preservation at Michigan State University

• FP² Inc. works closely with
  ➢ Regional Preservation Center in California
  ➢ Regional Preservation Partnerships in the Northeast, Southeast, Midwest, and Rocky Mountain West
  ➢ Federal Highway Administration
Pavement Preservation-what is it?

“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-what is it?

- Most agencies practice some form of pavement preservation
- Not universally programmatic at this point
- Lack of funding has had an impact
Pavement Preservation—what is it?

• Some agencies have established a Pavement Preservation Engineer position

• Significant progress in the last 5 years

• Continued support from FHWA and others

• MAP-21 language
Project Selection

Preservation Candidate?
Project Selection

Preservation Candidate?

- Shallow Swale
- Center Line Cracking
- Raveling
Treatments for Flexible Surfaces

Seals

- Crack Sealing
- Thin Cold Seals
  - Fog Seal
  - Chip Seal
  - Slurry Seal
  - Scrub Seal
  - Microsurfacing
  - Cape Seal

Plant Mixes

- Thin/Ultra Thin Hot Mix Asphalt Overlays
  - Warm Mix
  - Dense Graded mixes
  - Porous Friction Courses
  - Bonded wearing course
  - AR modified
  - RAP-RAS
  - Polymers
The NEED

Asphalt Deterioration Curve

- Excellent
- Good
- Fair
- Poor
- Very Poor
- Failed

Time (Years)

1. Fog Seal Rejuvenation
2. Slurry Seal, Chip Seal or Microsurfacing (Single)
3. Chip Seal or Microsurfacing (Double)
4. Cape Seal
5. HMA Overlay
6. Mill & HMA Overlay
7. In-Place Recycling & Overlay
8. Full Depth Reconstruction
9. Crack Filling (as needed)
The NEED (Treatment Limitations)

- A robust Pavement Management System
- Lack of QA requirements for non-HMA/WMA treatments
- Loss of knowledge in agencies
- Qualified contractors
- Poor project selection
- Lack of Performance Related Specs
The NEED

Progressive Pavement Management

Preservation vs. Rehabilitation

Preservation Strategy:
- Years 5, 14, 30 & 39: Cracksealing
- Years 10 & 35: Microsurfacing (Double)
- Years 17 & 42: Bonded Wearing Course
- Year 25: Mill & Pave

Total Cost/SY over 50 years = $28.20

Rehabilitation Strategy:
- Year 15: FDR plus 4" Hot Mix Overlay
- Year 30: FDR plus 4" Hot Mix Overlay
- Year 45: FDR plus 4" Hot Mix Overlay

Total Cost/SY over 50 years = $60.10
The NEED

• Current budgets constraints - all agencies
• Pavement Condition – TRIP reports
• Data from the FHWA/NCPP assessments
• Training for agencies
• Contractors QC capabilities
“The cost-efficient approach to keeping good highways in good condition is well proven. It’s far more expensive, as much as 20 times more costly, to rebuild a road once it has failed”¹

¹ Commissioner Christopher D. Clement, Sr.  
New Hampshire Department of Transportation
The RETURN

- Economics
- Sustainability
- Customer satisfaction
The RETURN

• Economics
  ➢ Maximize pavement life at minimum cost
  ➢ Money spent early in the life of the pavement-PCI > 70
  ➢ Can save as much as 4 times the amount if the pavement reaches a PCI of 40
The RETURN

• **Sustainability**
  - Less use of natural resources
  - Use of reclaimed materials
    - RAP
    - RAS
  - Energy savings
  - Use of environmentally-friendly products
The RETURN

• Customer satisfaction
  ➢ Smoother, durable, longer lasting pavement
  ➢ Improve functional characteristics
  ➢ Technics are rapid get→in get→out stay→out
Comments!!

Questions?