Why We do Preventive Maintenance

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Presentation Outline

• What is FP² Inc.?
  ➢ Mission

• Preventive Maintenance
  ➢ Definition
  ➢ PM vs. Pavement Preservation
  ➢ Why do we do it?

• FP² Inc.
  ➢ Advocacy, Research, Communications
  ➢ Supporters
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
What do we do?

• Mission

  ➢ **Advocacy**: educate public officials at all levels & involved with legislation.

  ➢ **Research**: Funding partner in NCAT 2012 PG study and 2015 NCAT/MN Road PG project

  ➢ **Communication**: sponsor key events, publish the Pavement Preservation Journal, distribute educational materials
Definitions

Preventive Maintenance vs. Pavement Preservation
Preventive Maintenance

• What is preventive maintenance?

MAP-21, SEC. 1507, Maintenance. Section §116 of 23 U.S.C Definitions

“The term ‘preventive maintenance’ includes pavement preservation programs and activities”
Preventive Maintenance

2/25/16 FHWA Memo-Guidance on Highway Preservation and Maintenance

“Preventive maintenance is a cost-effective means of extending the useful life of the Federal-aid highway (23 U.S.C.§116 (3))
Preventive Maintenance

• What’s the difference?

➢ MAP-21, “includes pavement preservation programs and activities”

➢ Guidance Document-”cost-effective means of extending useful life of the Federal-aid highway”.
Pavement Preservation

• MAP-21, SEC. 1507, Maintenance. Section §116 of 23 U.S.C Definitions.

• The term “pavement preservation programs and activities’ means programs and activities 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 road user expectations”
“Preservation consists of work that is planned and performed to improve or sustain the condition of the transportation facility in a state of good repair. do not add capacity or structural value.. restore overall condition”
Pavement Preservation

- What’s the difference?
  - MAP-21- “network level, long term strategy, enhance pavement performance, cost-effective practices, extend pavement life”
  - Guidance Document- “work that is planned and performed, improve or sustain condition of a transportation facility in a state of good repair”
PM vs. Pavement Preservation

- Extending the useful life of the Federal-aid highway vs. planned and performed work to improve or sustain the facility in a state of good repair
- Are these different?
- Both are eligible for Federal funding!!
Preventive Maintenance

• So why do PM?
  ➢ Keep our system in good condition
  ➢ $$$-budgetary constraints
  ➢ The condition of our highway network, ASCE recently rated it a D. In fact it has been a D or D- since 2005! See http://www.infrastructurereportcard.org/
  ➢ The last increase in the Federal user fee (gas tax) was 1993 and the CCI has increased by 300% since then
Preventive Maintenance

• So if I want to do PM, where do I begin?

  1. Develop a Strategy
  2. Perform a condition survey, visual or automated, to determine the properties of the system
  3. Choose the “right road” for a PM treatment
Develop a Strategy

• Inputs to know:
  ➢ Available Budget
  ➢ Lane Miles of Network
  ➢ Unit Costs of Work Types
  ➢ Life Extensions of Preventive Maintenance Treatments
  ➢ Design Life of Reconstruction & Rehabilitation Work
Preventive Maintenance Candidate?
Preventive Maintenance Candidate?
Preventive Maintenance Candidate?
Pavement Preservation

It's Less Expensive to Work with Good Pavements

- Fog Seal REJUVENATORS: $0.65 SY
- Fog Seal COATINGS: $0.85 - $1.25 SY
  - Scrubb Seals
  - Sand Seals
- Surface Treatments:
  - Slurry Seals: $1.25 - $3.25 SY
  - Micro-Surfacing
  - Chip Seals
- Conventional Approach:
  - Overlay: $5.00 - $12.00 SY
  - Mill & Overlay
- Reconstruct/Rebuild: $20-$50 SY

PCI

100
85
70
60
50
40
30
20
10
0

PAVEMENT AGE (Years)
Preventive Maintenance

• So now I want to do PM, what do I do next?

4. Determine the most cost-effective treatment to keep a “good road good” or extend it’s useful life

5. Chose from a variety of treatments for both flexible and rigid pavements

6. There is no “silver bullet”, each have their limitations

7. Commonly used flexible and rigid pavement treatments
Flexible Pavement Treatments

**Seals**
- Crack Sealing
- Thin Cold Seals
  - Fog Seal
  - Chip Seal
  - Slurry Seal
  - Scrub Seal
  - Micro surfacing
  - Cape Seal
- CIR-HIR

**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

¹ SHRP 2 Report S2-R-26
Rigid Pavement Treatments

- Crack Sealing
- Undersealing
- Spall Repair
- Partial Depth Repair
- Full Depth Repair
- Diamond Grooving

- Joint Resealing
- Dowel Bar Retrofit
- Cross Stitching - longitudinal cracks & joints
- Diamond Grinding
- CPR
Advocacy, Research, and Communications

Supporters
Advocacy Effort

- FP2 has a contract with Williams and Jenson to represent the Pavement Preservation (PP) industry
- FP2 was very instrumental in getting PP language in MAP 21
- Have had many meetings with Transportation committees as well as key members of Congress and their staff
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
NCAT/MN ROAD Research Partnership

To facilitate high value pavement research that addresses national needs using full-scale pavement testing facilities in both warm and cold climates on flexible, rigid, and composite pavement structures.
Communication Efforts

- FP2 Inc. Website – fp2.org
James B. Sorenson Excellence in Preservation Award

Jim Sorenson
Questions?
Contact Information

FP²
FOR PAVEMENT PRESERVATION

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