Pavement Preservation in the USA

“Preserving the Investment in Our Highways”
What is Pavement Preservation?

**Includes:**
- Preventive Maintenance
- Minor Rehabilitation (non-structural)
- *Some Routine Maintenance*

**Does Not Include:**
- New Pavement Construction
- Reconstruction
- Major Rehabilitation (increase in structural capacity)
- Corrective Maintenance
Concept of Pavement Preservation (P²)

- Original Pavement
- Optimal Timing
- Preventive Trigger
- Rehabilitation Trigger

$\text{Pavement Condition}$

$\text{Time / Traffic}$
Preservation Treatments

Asphalt:
- Chip Seals
- Fog Seals
- Slurry Surfacing
- Surface Seals
- Micro-Surfacing
- Thin Overlays
- Profile Milling
- Crack Sealing

PCC:
- Joint Resealing
- Crack Sealing
- Spall Repair
- Dowel Bar Retrofit
- Full and Partial Depth Repair
- Diamond Grinding
Other $P^2$ Treatments

- Paver Placed Surface Seal (Nova Chip)
- Compound Surface Seal (DRM)
- Macro-Surfacing (Road Armor)
- Medium and High Volume Ultra-Thin Overlays
- Concrete Longitudinal Joint Repair
- Ultra-Thin White Topping
- Hot In-Place HMA Recycling
Preventive Maintenance

As defined by AASHTO:

“Preventive maintenance is a planned strategy of cost effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system (without substantially increasing structural capacity).”
Philosophy of Preventive Maintenance

Applying the right treatment

... To the right pavement

... At the right time
Importance of Preventive Maintenance

As we move into the 21st century, it is clear that the Federal-Aid highway program is undergoing a significant transition from its original focus on new construction to that of preservation of the highway system.

- FHWA Program Development Office
The Preventive Maintenance Concept

$1.00 for preventive maintenance here . . .

. . . delays spending $4.00 to $5.00 on more extensive treatments here.
Preventive Maintenance

Key Objective

• Improve the overall pavement condition of the network
Michigan DOT Example

+$315$ million Rehabilitation and Reconstruction

$190$ million Rehabilitation and Reconstruction

$+10$ million Preventive Maintenance

Achieved same results for $115$ million less
Meeting The Challenge

Through Partnerships:

• AASHTO
• FHWA
• LTAP
• FP², ARRA, AEMA, ISSA, TAI, ACPA…
• Other industries and stakeholders
Current Partnership Initiatives

- Expert Task Group (ETG)
- FHWA NHI Training Course Series
- Research Projects
- AASHTO Subcommittee on Maintenance
- Publications
- Preventive Maintenance Workshops
- P² International Scanning Tour
  - France
  - South Africa
  - Australia
Expert Task Group

• Industry/agency cross cutting team representing various disciplines
• Input and technical support for all FHWA sponsored activities in Pavement Preservation
• Meets periodically to discuss current and plan future activities
P² Training Courses

- Funded by FHWA and Industry
- Guided by the ETG and technical panels
- Series of four Courses
NHI Course Listing

• “The Preventive Maintenance Concept” NHI Course #130154
• “Selecting Pavements for PM” NHI Course #130158
• “Design and Construction of Quality PM Treatments” – Winter 03/04
• “Integrating PM into Pavement Management Systems” – Winter 03/04
Research Projects

• NCHRP 14-14 “Guide for Optimal Timing of Pavement Preventive Maintenance Treatment Application”

• NCHRP 20-50 “Effectiveness of Maintenance and Rehabilitation”

• TPF-5 (045) — National Pooled Fund for “Development of Guidelines for the Selections of Crack Sealants”

• Spray Applied Polymer Emulsion Field Studies
AASHTO Subcommittee on Maintenance

- Promote P² Activities through Focus Groups, Workshops, Publications, etc.
- 10th AASHTO/TRB Maintenance Management Conference
  Duluth, Minnesota
  July 13-17, 2003

- Web Site: http://transportation.org/committee/maintenance/
Publications – FHWA and FP²

- P² Checklists – Series of 10, 6 complete and available July 2003, final 4 to be completed Winter ’03/’04
- P² CD-2 “State of the Practice” is available
- P² Updated Toolbox and CD – available in July.
- P² Forum CD – articles and presentations from the P² Forum – available in July.
- P² Compendium: Compilation of recent papers and articles about P² – available in July.
P² Checklists

Ten Checklists covering HMA and PCCP
P² International Scanning Tour
Different Approach to Pavements
Different Approach to Pavements
Demo of Geotextile-Reinforced Sprayed Seal
Workshops – Conferences - Partnerships

• Over 35 workshops, seminars and presentations supported by industry/agencies
• Sharing information / developing a better understanding
• Midwestern Pavement Preservation Partnership
• State & local gov’ts considering P² programs with dedicated funding
Future Initiatives

• National Conference on Pavement Preservation- Spring 2004
• P² clearinghouse (www.FP2.org or www.fhwa.dot.gov/preservation)
• Continue research and training/workshop development
• And . . .
5th National Transportation Asset Management Conference & Workshop

Atlanta, GA    September 29-30, 2003
and
Seattle, WA    October 21-22, 2003

www.mrutc.org/about/5th_National_Transportation_Aasset_Management_Conference.pdf
Contacts

• FHWA P² Web Site
  – http://www.fhwa.dot.gov/preservation/

• Foundation for Pavement Preservation Web Site : http://www.fp2.org
THANK YOU!