


UT/TDOT Pavement Preventive Maintenance Research


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Preventive Maintenance


- Division offices should proactively work with their State partners to establish a preservation component, which is composed of various preventive maintenance activities and treatments. These include:
 - roadway activities such as joint repair, seal coats, pavement patching, thin overlays, shoulder repair, restoration of drainage systems
 - and bridge activities such as crack sealing, joint repair, seismic retrofit, scour countermeasures, and painting.

Preventive Maintenance Eligibility Memo
King Gee 10-8-04




Why this topic?

- Resurfacing Program Typically State Funded
- SAFETEA-LU Increased Federal Funding
- Increased Competition for State Funds
- FHWA allows Preventive Maintenance Funding of Projects, but not specifically Maintenance (Routine)
- Maintenance Needs have continued to increase over past several years



Preventive Maintenance (Stewardship and Oversight Agreement 2006)

- Preventive Maintenance: The lowest level of 3R work. In general, any work that 1) prevents the intrusion of water into the pavement or pavement base (crack or joint sealing, underdrains, restoration of drainage systems); 2) prevents deterioration of bridges including painting, scour protection, deck repair, deck drain cleaning, and seismic retrofit; 3) restores pavement rideability by profiling, milling, overlaying, or replacing a portion of the pavement structure



Preventive Maintenance

- Timely preventive maintenance and preservation activities are necessary to ensure proper performance of the transportation infrastructure. Experience has shown that when properly applied, preventive maintenance is a cost-effective way of extending the service life of highway facilities and therefore is eligible for Federal-aid funding.

Preventive Maintenance Eligibility Memo
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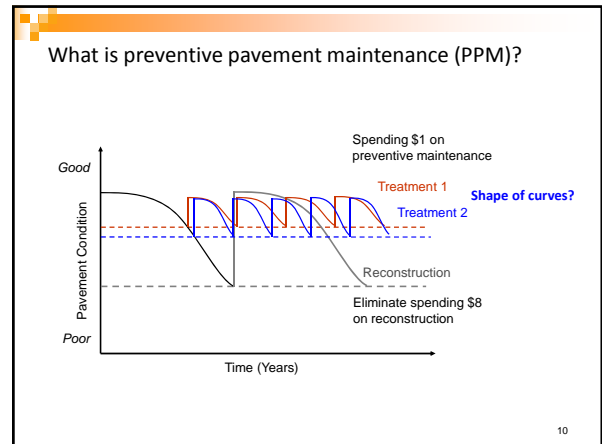


Preventive Maintenance in Tennessee

- Pavement Preservation
 - Seal coats
 - Microsurfacing
 - Thin Overlays (<1.5 inches including Mill and Fill)
- Bridge Preservation
 - Seismic Retrofit
 - Deck Repair
 - Structural Painting

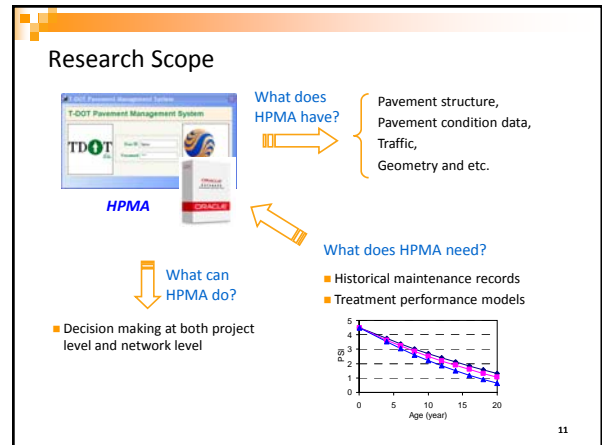
TDOT FHWA Stewardship and Oversight Agreement

WORK ACTIVITY	TDOT ACTION	FHWA ACTION	OUTCOME
Routine Maintenance Of Federal-aid highways	Adequately maintain highways	Conduct workload and PR/PE reviews and in-depth inspections	Division will provide all findings to appropriate TDOT personnel
Federally funded PM (individual activities)	Identify individual PM activities or projects for Federal eligibility	Review and Approve (10 days)	List of Approved Activities
Federally funded PM (program)	Develop annual PM program of eligible projects.	Review and Approve Program as needed. Assist TDOT in developing and implementing PM	Approved and Implemented Annual PM Program
Monitor Federally funded PM accomplishments	Prepare Accomplishment Report	Review and Recommend changes to Plan, information	Annual Report and Improved Program
PM Technology Transfer	Identify and Propose technology transfer activities	Assist TDOT in identification, marketing, and implementation	Improved PM program



List of Approved Activities

Treatments	PQI / Distress Selection Guidelines	Typical ADT Range	Expected Service Life Extension
Thin Mix Overlays 1" – 1.5" Thick	≥ 3.5 / Low to moderate fatigue cracking, oxidized pavement, raveling, and rutting in wheel paths < 0.25"	No Limit	12 Years
Ultra Thin Mix Overlays <1"	≥ 3.8 / Low fatigue cracking oxidized pavement, loss of fines on pavement surface.	0 – 5000	6 – 8 Years
Micro-Surfacing	≥ 3.8 / Low fatigue cracking oxidized pavement, loss of fines on pavement surface.	0 – 5000	6 – 8 Years
Chip Seal	N/A / moderate fatigue cracking, oxidized pavement, raveling, and rutting in wheel paths < 0.25"	< 2000	6 – 8 Years
Crack Seal	N/A / Longitudinal and Transverse Cracks (1/8" -1/2")	No Limit	3 – 5 Years
Miscellaneous Pavement Sealants	N/A / Slight loss of fines	Varies	2 – 3 Years



Cost Effectiveness

- We are currently exploring, through a research project with the University of Tennessee, the cost effectiveness and optimal timing of various treatments that will be utilized in Tennessee. It is our plan to have a summary of the results of this research by January 2010 to document the cost effectiveness in Tennessee.....

TDOT FHWA Oversight Agreement – List of Individual Preventive Maintenance Activities Eligible for Federal Funding Eligibility Memo Paul Degges 1-8-09

