Implementation of a Pavement Preservation Program in Illinois

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Outline

• Background—IDOT Preservation Guidelines Development
• Details of New Preservation Guidelines
• Challenges of Implementing New Preservation Program
• Conclusions
Background – IDOT Preservation Guidelines Development

• Initial funding of preservation projects in 2004
  – Rough guidelines used for treatment selection

• Revised guidelines in 2005
  – No specific treatment selection criteria
  – No details of policy needs for local roads/streets
Background – IDOT Preservation Guidelines Development (cont)

• Initiated in 2007 to develop guidelines for state roadway system and local agency roads/streets
  – Joint development
  – Industry driven
  – Statewide training
Details of New Preservation Guidelines

- Local agency guidelines (BLRS)
- State-level guidelines (BMPR)
Local Agency Pavement Preservation Guidelines

- History of preservation treatment use
- Some guidance available, but need for detailed preservation guidelines
- Preservation guidelines included:
  - Process for program approval
  - Summary of treatments
  - Guidelines for treatment selection
Process for Local Agency Program Approval

- Funding sources to conduct preservation activities
- Pavement management required for tracking performance
- Steps in the preservation process
  1. Program Approval
  2. Preservation Plan Development
  3. Pavement Preservation Plan Annual Update
Summary of Pavement Preservation Treatments for Local Agencies

- Treatment descriptions
- Pavement conditions addressed
- Application limitations
- Construction considerations
- Traffic considerations
- Expected performance
- Relative cost
- Construction steps
# Preservation & Minor Rehab Treatments

Available for Local Agency Use

<table>
<thead>
<tr>
<th>Treatments for Flexible Pavements</th>
<th>Treatments for Rigid Pavements</th>
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<tbody>
<tr>
<td>Crack Filling</td>
<td>Crack Sealing</td>
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<tr>
<td>Crack Sealing</td>
<td>Joint Resealing</td>
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<tr>
<td>Fog Seals</td>
<td>Diamond Grinding</td>
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<td>Sand Seals</td>
<td>Diamond Grooving</td>
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<td>Scrub Seals</td>
<td>Full-Depth Repairs</td>
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<td>Rejuvenators</td>
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<td>Slurry Seals</td>
<td>Load Transfer Restoration (LTR)</td>
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<td>Micro-surfacing</td>
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<td>Chip Seas</td>
<td>Pavement Subsealing/Undersealing</td>
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<td>Cape Seals</td>
<td>Drainage Preservation</td>
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<td>Cold In-place Recycling (CIR)</td>
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<td>Hot In-place Recycling (HIR)</td>
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<tr>
<td>Thin Asphalt Concrete Overlay</td>
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<tr>
<td>Ultra-Thin Bonded Wearing Course</td>
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<tr>
<td>Ultra-Thin Whitetopping (UTW)</td>
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<td>Cold Milling</td>
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<td>Drainage Preservation</td>
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Pavement Preservation Treatment Selection for Local Agencies

• Guidance in treatment selection on current condition and distress types present

• 5-step selection process
  1. Gather pavement information (from PMS)
  2. Assess pavement condition
  3. Evaluate pavement data
  4. Identify feasible preservation treatments
  5. Select most appropriate preservation treatment
State-Level Pavement Preservation Guidelines

- History of using HMA overlays to maintain state roads
- Initial use of preservation (2005) → $3M total
  - Bituminous surface treatment (BST)
  - Slurry seal
  - Microsurfacing
  - Cape seal
- Increased funding (2008) → $7M total
Summary of State-Level Preservation Projects Since 2005

<table>
<thead>
<tr>
<th>Treatment Type</th>
<th>Number of Projects Completed</th>
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<tbody>
<tr>
<td>BST (Single-Pass)</td>
<td>6</td>
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<tr>
<td>Single-Pass Slurry Seal</td>
<td>5</td>
</tr>
<tr>
<td>Single-Pass Microsurfacing</td>
<td>15</td>
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<tr>
<td>Double-Pass Microsurfacing</td>
<td>23</td>
</tr>
<tr>
<td>Cape Seal (Single-Pass BST &amp; Single-Pass Microsurfacing)</td>
<td>14</td>
</tr>
<tr>
<td>Half-SMART Overlay (Leveling Binder and Single-Pass BST)</td>
<td>8</td>
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</tbody>
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State-Level Pavement Preservation Guidelines

- Additional guidance on treatments eligible for preservation funding in *Special Provisions*
- Final guidance being developed
  - General performance information
  - Detailed summary of available preservation treatments
  - Treatment selection details
Challenges of Implementing New Local-level Preservation Program

• Confusion with definitions/terminology
  – Pavement preservation vs. preventive maintenance vs. reactive maintenance

• Lack of pavement management
  – IRIS at state-level

• Procurement using Federal Funds

• Statewide specifications
  – Reliance on contractors, material suppliers for specs
Challenges of Implementing New State-level Preservation Program

- Inadequate funding for highway maintenance
- Condition of the highway network
  - Impact of increased bridge work needs
- Proper treatment selection
  - Reflective cracking issue on composite pavements
- Public perception
  - Anything other than HMA overlay is inferior
  - Transition from “worst-first” to preservation approach
Conclusions

• Preservation embraced
• Unique program development aspects
• Various challenges ahead
• Technology transfer key to long-term success