Pavement Preservation

at the Connecticut Department of Transportation
2006-2007

Presented by Edgardo D. Block
Pavement Management Unit
Overview

- 2006 Pavement Preservation Technical Assessment Visit (FHWA)
- ConnDOT initiatives since visit
- Current status
Connecticut Paving Needs
(worst-first analysis)

Paving Needs, 2005-2009

Year
2005 2006 2007 2008 2009

Two-lane miles (2LM)
-300 -200 -100 0 100 200 300 400

Surplus (Backlog) (b)
Surplus (Backlog)(a)
Surplus (Backlog)(c)
Paving Needs
Reduced VIP
250-2LM VIP

a: With OOC 25 2LM/yr
b: With OOC 45 2LM/yr
c: With OOC 45 2LM/yr and reduced VIP
Technical Assessment (FHWA)

- July 2006
  - Business process review through interviews
    - Executives
    - Managers
    - Districts

- Closeout meeting December 2006
  - Final report
ConnDOT Activities since Technical Assessment

- Working group formed
  - Maintenance, Asset Management, Pavement Management, FHWA

- Activities:
  - Develop an implementation strategy
  - Identify eligible treatments
  - Develop a programmatic approach
ConnDOT Activities (cont’d)

- Activities:
  - Begin with one treatment
  - Add treatments over time

- First treatment:
  - Ultra-thin HMA overlay
ConnDOT Activities (cont’d)

- Project Selection Process:
  - Analyze pavement condition data
  - Find distress threshold
  - Filter candidates using Photolog
  - Conduct field review

- Estimate cost-benefit relationship

- Eventually, use PMS software to guide program
ConnDOT Activities 2006

- **Treatment:**
  - Ultra-thin Hot-Mix Asphalt (HMA) – 0.1875” Superpave, 1” thick

- **Project Selection Process:**
  - “Secondary” highways, speed limit < 50 mph
  - Used cracking “threshold” and age (7+ yrs)
    - If greater than threshold, eliminate from consideration
    - Age was modified to 6+
  - Filtered candidates using HD Photolog images
  - Conducted field review

- **Cost-benefit relationship used to guide prioritization**
  - Ranked by age (older=higher) and cracking (less=higher)
ConnDOT Activities 2007

- **Treatment:**
  - Thin Hot-Mix Asphalt (HMA) – 0.375” Superpave, 1.5” thick

- **Project Selection Process:**
  - Interstate and Expressways
  - Used cracking, roughness, rutting, pavement type
    - If greater than threshold, eliminate from consideration
  - Filtered candidates using HD Photolog images (PM, AM)

- **Cost-benefit relationship used to guide prioritization**
  - Ranked by age (older=higher) and cracking (less=higher)
ConnDOT Activities 2007

- **Pavement Preservation Roadmap Document**
  - Outlines program guiding principles, roles and responsibilities
  - Included in recommendation memo from Policy and Planning
  - Awaiting implementation

- **Safety Assessment**
  - FHWA developed guidance for safety review guidelines that comply with FHWA memorandum

- **Project Execution**
  - 9 projects forwarded to Engineering for preliminary design

- **Crack Sealing Specifications**

- **Rubberized Chip Seal Specifications**
Status

- Awaiting formalization of program
- Moving forward with thin HMA projects
- Developing full pavement-preservation “matrix” for selecting treatment
- Have taken delivery of PMS software (analysis modules)
ConnDOT Activities 2008

- Develop pavement-preservation “matrix”
- Complete the formalization of the program
- Re-evaluate implementation strategy
- Execute projects in Engineering
- Refine project-selection criteria
Lessons Learned

- Pavement Preservation should be part of an *integrated, holistic approach to network management*
  - Structural rehabilitation
  - Major rehabilitation
  - Reconstruction

- Timing of preservation projects places premium on data collection:
  - Distress needs to be detected in early stages
Pavement Preservation

Questions?