PMS Performance Models

Deighton Associates Limited
2011 Northeast Pavement Preservation Partnership Meeting
Boston, Massachusetts – November 8th 2011
dTIMS
The industry leading Commercial Off-the-Shelf (COTS) Asset Management Solution

Manages the roadway asset lifecycle at all levels:

- Strategic Asset Management
- Tactical Asset Management
- Operational Asset Management
Deighton’s World Market Share
40% of the US State DOTs use dTIMS
Performance Models

PAVEMENT PRESERVATION
Performance Modeling Life Cycle

- Collect Data
- Generate Indices
- Define Families or Site-specific
- Model Development
  - Regression
    - Linear
    - Polynomial
    - Logarithmic
    - Etc.
  - Historical Data
  - External Tools
  - Expert Opinion
  - FHWA (LTAP)
  - Research

- Implement Program
- Generate Reports
- Run Analysis
- Model Implementation
- Engineering Judgement

Model development is not a black box! Models Should be re-evaluated regularly

Is the data valid?
Why or why not?
Is additional data required?
Schedule a revisit
Current State of the States

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<th>VT</th>
<th>MA</th>
<th>RI</th>
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<td><strong>Deterministic or Probabilistic Models</strong></td>
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<td><strong>Families or Site Specific Models</strong></td>
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<td><strong>Every few years or Continuous</strong></td>
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**Rehabilitation Treatments include:**
Thick overlay, Functional overlay, Pulverize, Rubbilize, Stabilization, Crack and Seat, Break and Set, Full depth reconstruction, New Pavement

**Preservation Treatments include:**
Crack seal, Chip seal, Micro-surfacing, Thin overlay, Leveling, Diamond grinding, Micro-milling

* Treatment families
Performance, Impacts and Resets

Dependent Variable

Independent Variable
Performance, Impacts and Resets