Understanding Long Term Pavement Warranties

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What is a long-term warranty?

- Not a short term performance bond
- Greater than 10 years
- At least one rehabilitation cycle
- Performance-defined, not prescriptive
- Contractor is responsible for design, construction, and maintenance
- Contractor assumes risks as well
What a long-term warranty really is:

• A substantial change in the business model
• A change in the project delivery system
State of the Industry

- Traditionally low-bid driven
  - Served well for initial costs
  - State owns all risks for performance
- Moving towards long-term performance
  - Manage overall costs, not just initial costs
  - Concern with performance
If you tell someone what to do and how to do it…

how can you make them fix it if it doesn’t perform?
Thinking Long-Term

• Consider overall costs
  – Initial, maintenance, user, and agency
• Overall performance
  – Initial and long-term
• Aligned incentives
  – Contractor responsibility and risk
  – Fixed costs
Agency Need

- Economic development
- Transferred risk
- Fixed maintenance budget
- Reduced staff
- Assistance with financing
  - Bonds, tolls, TIFIA, shadow tolls, bridge loans
Project Selection

- Innovation needed
- Fixed budgets
- Better performance
- Faster completion
Project Types

- Full corridors
- Major upgrades
- Interstate replacements
- New facilities
Agency Expectations

• Performance
• Innovation
• Reduced level of involvement
  – Day-to-day
• Less time, reduced costs, & higher quality
• Contractor assumes more responsibility
Warranty Expectations

• Warranty scope
• Be specific on when warranty starts
  – Open to traffic
  – Final completion
• Warranty contract stands on its own
Deal Structure

- Design Build Warrant
  - Not an option for every state
- Design Bid Build Warrant
  - Professional Services Agreement
Design Build Warrant

- Consortium often formed
- Lump sum price
- Faster delivery
- Fixed schedule
- Warranty ties quality to the fixed cost and faster schedule
Design Bid Build Warrant

- All contractors have a chance to bid
- Competition enables lowest bid price
- Service provider acts as agent
- Agency has construction cost risk
Agency Commitment & Resources

- Determining who is the lead
- Commitment for offices and districts to be involved
- Sub-structure for managing warranty contract
- Staff in place or assigned before the project starts
Review and Approval Process needed for:

- Design
- Specifications
- Inspections
- Documentation
Development & Construction

- Establish milestones throughout the project
- Determine how much review/approval agency will require
- Proper time allotments for review and response
- Procedure for dispute resolution
- Clarify roles for each party (construction)
Warranty Preparation

• Ability to contract for work
• Traffic usage counting in place
• Payment or reimbursement process established
• Internal department communication process in place
Bottom Line

- Allow for innovation
- Be specific about performance expectations
- Transfer risk
- Define limits and scope of the warranty
Warranty Start

- Be specific and clear on when warranty starts
  - Open to traffic
  - Final completion
- Ensure that agency resources are in place
- Procedures in place for doing work for warranty
- Clarify roles of each party
Warranty Roles
VA 288

**VDOT**
- Traffic counts
- Weight - Weigh in Motion
- Snow removal
- Emergency Repairs
- Inspection anytime
- Optional participation in KPRI inspections.

**KPRI**
- Inspect condition - annually
- Review condition - quarterly
- Automated Distress ID Vehicle - annual report
- Report work plans to DOT
- Pavement Repair specified criteria
- Preventive maintenance
- Report ESAL’s DOT data
- Pay for emergency repairs
Condition Monitoring

- Determine the criteria and their limits
- Select the procedures to test pavement
- Establish the frequency of testing and reporting
Warranty Operations

- Use individual criteria, not combined indexes
- Use objective measures, not subjective
  - IRI, Crack width, Crack spacing, Rut depth
- Individual criteria must always be met
- Contractor responsible for selecting maintenance treatment to meet performance criteria
# NM 44 Warranty Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Measure</th>
<th>Extent</th>
<th>Severity</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yrs 1-5</td>
</tr>
<tr>
<td>Smoothness</td>
<td>IRI (in/mile)</td>
<td>Mainline</td>
<td>Ave / 2 miles</td>
</tr>
<tr>
<td>Crack Spacing</td>
<td>Distance (feet)</td>
<td>Mainline &amp; Shlds.</td>
<td>Transverse</td>
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<tr>
<td>Bleeding</td>
<td>Coeff. of Friction (f)</td>
<td>Mainline</td>
<td>300 sq. ft.</td>
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<td>Pot Holes</td>
<td>Depth (inch)</td>
<td>Mainline &amp; Shlds.</td>
<td>0.5 ft.wide</td>
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<tr>
<td>Bumps or Dips</td>
<td>Depth (inch)</td>
<td>Mainline</td>
<td>Per 10'</td>
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<tr>
<td>Delamination</td>
<td></td>
<td>Mainline</td>
<td>Any</td>
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</table>
Warranty Limitations

- Private companies cannot take unlimited liability
- Determine which party best can manage the risk
  - Limits on total cost, traffic usage, inflation
Warranty - Risk Allocation

- 3rd Party Liability
- Inflation
- Traffic Loads
- Time
- Maint. Costs

Amount of Risk

Agency

Warrantor
Warranty Security - Bonding

• Similar to construction bonding
• Bonding is available for warranties
• Bonding liability is booked against the firm’s bonding capacity
• Not always necessary
  – Depends on company’s financial strength
Summary

• Warranties ensure fiscal responsibility throughout the project
• Require integration of all engineering services
• Agencies get a fixed maintenance budget for an extended period of time
• Warrantor is accepting the performance risk