

# 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

			Warranty	Criteria			
					Severity		
Criteria	Measure		Extent	Yrs 1-5	Yrs 6-10	Yrs 11-15	Yrs 16-20
Smoothness	IRI (in/mile)	Mainline	Ave / 2 miles	80	110	135	160
Rutting/Shoving	Depth (inch)	Mainline	Ave / 2 miles	3/8	3/8	3/8	3/8
Cracks/Joints	Width (inch)	Mainline & Shlds.	Trans. & Long.	3/8	3/8	3/8	3/8
Crack Spacing	Distance (feet)	Mainline & Shlds.	Transverse	15	10	5	5
Bleeding	Coeff. of Friction (f)	Mainline	300 sq. ft.	0.15	0.15	0.15	0.15
Ravelling/Weathering	Depth (inch)	Mainline & Shlds.	55 sq. ft.	3/8	3/8	3/8	3/8
Pot Holes	Depth (inch)	Mainline & Shlds.	0.5 ft.wide	3/8	3/8	3/8	3/8
Bumps or Dips	Depth (inch)	Mainline	Per 10'	5/8	7/10	3/4	9/10
Delamination		Mainline	Any	none	none	none	none



# 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

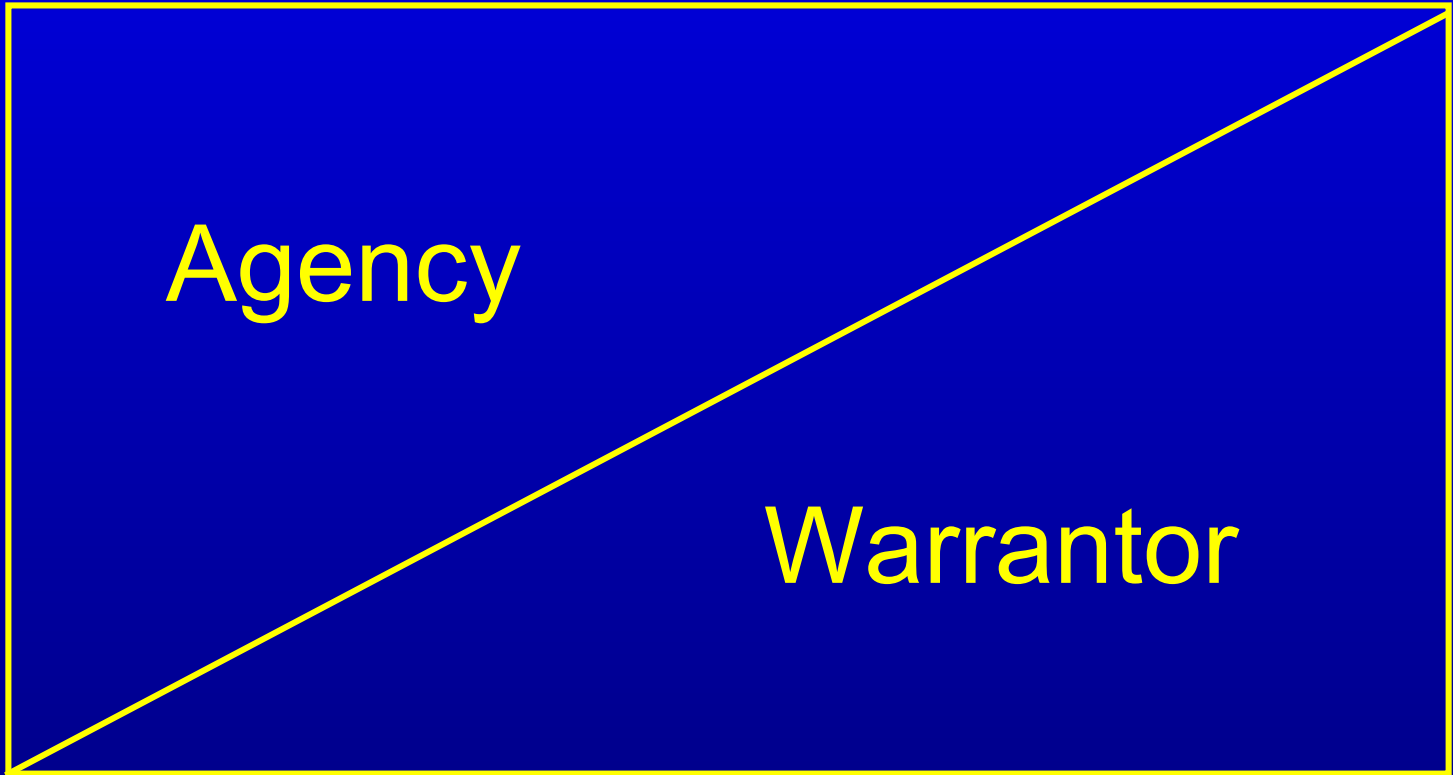
Time

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



Thank You

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