

*2002 Warranty Presentations
Oregon and Washington DOT's*



WARRANTED
PAVEMENTS

WARRANTED PAVEMENTS

Origination



- Politics
- Motivated Chief Engineer
- INDOT / Industry Team
- AASHTO Task Group
- INDOT / Industry / FHWA Team

WARRANTED PAVEMENTS

White Paper Development

- Team - 3 INDOT, 3 Industry, & FHWA
- 3 Day Lock in
 - No Pagers
 - No Cell Phones
 - No Faxes
 - Pizza Delivered For Lunch
 - NO DISTRACTIONS
- BRAINSTORM

WARRANTED PAVEMENTS

White Paper Model



- What's Important
 - Public
 - Agency
 - Contractor
 - FHWA

WARRANTED PAVEMENTS

What's Important - Public

- Comfortable Ride
- Safe Ride
 - Surface Friction
 - Non - Rutted

WARRANTED PAVEMENTS

What's Important - Agency

- Road That Won't Fall Apart
- Meet Specifications
 - No Testing
 - No Oversight
- Economical
- Timely
- Innovation

WARRANTED PAVEMENTS

What's Important - Contractor



- Profitability
- Level Playing Field
- Liability
- Past Performance
 - 5 Year IRI
- Bonding

WARRANTED PAVEMENTS

What's Important - FHWA

- Final Blessing

WARRANTED PAVEMENTS

20 Year Expectations



- IRI
- Rutting
- Surface Friction
- Transverse Cracking
- Longitudinal Cracking

WARRANTED PAVEMENTS

Threshold Values (100 m sections)

- IRI - 2.1 m/km (133 in/mi)
- Rut Depth - 9 mm (3/8 in)
- Surface Friction - avg 35; none less than 25
- Transverse Cracking - severity 2
- Longitudinal Cracking - 5.5 m (18 ft)
 - monitored 152.5 m (500 ft)

WARRANTED PAVEMENTS Specification



- Description
- Warranty
- Conflict Resolution Team
- Warranty Work
- Distress Indicators, Thresholds, & Remedial Action
- Elective / Preventive Action

WARRANTED PAVEMENTS

Specification (cont.)



- Department Maintenance
- Method of Measurement
- Bases of Payment

WARRANTED PAVEMENTS

Specification (Description)



- ESAL Loading
- Aggregate Properties
 - Consensus
 - Source
- Minimum PG Binder
- Mix Design Method

WARRANTED PAVEMENTS

Specification (Warranty)

- Quality Control Plan
 - Describe the Plan of Operations
 - Submitted to Department
- 5 Year Warranty
- Bond
 - Equal to Surface replacement cost

WARRANTED PAVEMENTS

Specification (CRT)

- Conflict Resolution Team
 - Two Contractor Representatives
 - Two INDOT Representatives
 - One Mutual Representative

WARRANTED PAVEMENTS

Specification (Warranty Work)

- Remedial Work
 - No Cost to the Department
 - Lane Rental Charges in effect
- INDOT Approval
- Emergency Repairs
 - Contractor
 - INDOT

WARRANTED PAVEMENTS

Specification (Distress)

- Alligator Cracks
- Flushing
- Longitudinal Cracks
- Transverse Cracks
- Longitudinal Distortion
- Potholes / Raveling
- Rutting
- Low Friction

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Specification (PM)



- Contractor's Option
- Lane Charges not Assessed

WARRANTED PAVEMENTS

Specification (INDOT)

- Department Maintenance
 - Snow Plowing
 - Deicing Chemical
 - Safety (i.e. Guardrail)
 - Pavement Markings
 - Mowing
 - Sign Maintenance

WARRANTED PAVEMENTS

Specification (Meas. & Pay)

- HMA Mixtures, Warranted (mg)
 - Mixture Placed
 - Warranty Bond
 - Warranty Work
 - Job Mix Formula
 - Quality Control Plan
 - Sampling & Testing
 - Record Keeping
 - Traffic Control

WARRANTED PAVEMENTS

Construction Spec



- **A + B + C**
 - Cost
 - Time
 - Warranty

WARRANTED PAVEMENTS

Construction Spec

- 1996 First Warranted HMA Pavement
 - I-70
 - 40,000 ADT
 - 29 % Trucks
- Lane Charges
 - Peak - \$13,800/lane/period
 - Non Peak - \$4,600/lane/period

WARRANTED PAVEMENTS

Construction



- **Number of Contract Days**
 - Bid - 135
 - Used - 84
- **Peak Lane Closure**
 - Bid - 177 days
 - Used - 127 days
- **Non Peak Closure**
 - Bid - 277 periods
 - Used - 139 periods

WARRANTED PAVEMENTS
Construction

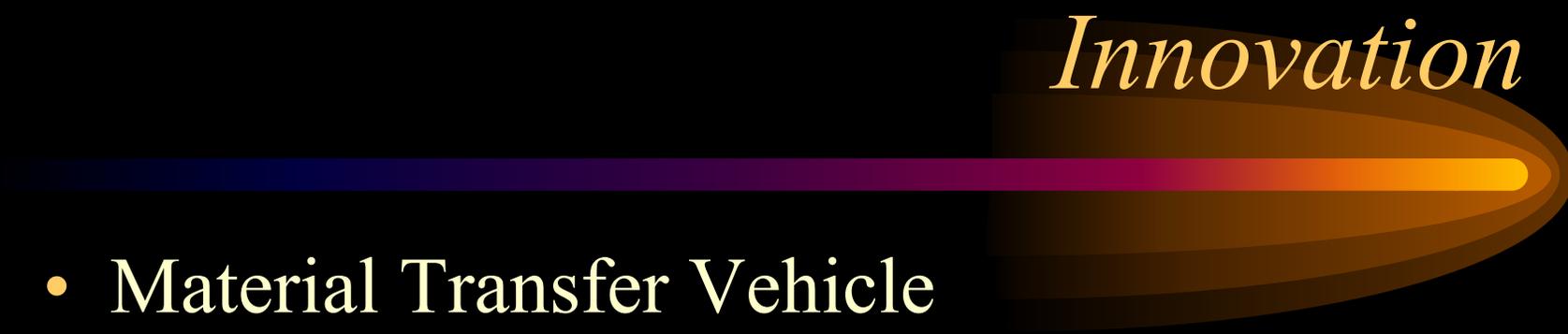


BONUS

\$1,352,000

WARRANTED PAVEMENTS

Innovation



- Material Transfer Vehicle
- Joint Maker
- Joint Tape
- APT Testing
- Purwheel Testing
- Double Shifts

WARRANTED PAVEMENTS

Final Acceptance



- Surface Friction
 - Mill & Resurface
- Project Accepted 2001

WARRANTED PAVEMENTS

Notables - PE

- Different Attitude of Contractor
- 3rd Roller Automatic
- Trucks Always Tarped
- More Care With Joints
- Cleaner Roadway
- Material Transfer Vehicle Used

WARRANTED PAVEMENTS

Notables - Contractor

- APT / Purwheel Testing
- Did More Quality Control
 - Nuclear gauge
 - Cores
- Joints
 - Used Special Products

WARRANTED PAVEMENTS

Future



- High Profile Projects
 - Heavy Traffic
 - Time Constraints
- Limit to 2 to 3 max per year