Rising expectations of traveling public and commercial carriers

Constrained agency funding and staffing

Reliable, timely, specific reports of conditions difficult to obtain

Some weather conditions are difficult to forecast

Pavement response to weather conditions and maintenance treatments is not well established

Effects and effectiveness of innovative maintenance treatments not entirely understood

Retiring maintenance staff replaced by less experienced workers
If you know…
- Road characteristics
- Current conditions
- Weather forecast
- Physics & chemistry of snow, ice, chemicals
- Available resources (material, equipment, schedule)

Then you can recommend…
- Treatment type
- Application rate
- Optimal timing

…and predict
- Future road conditions with or without treatments
Assess needs, benefits, and receptivity to MDSS in participating DOTs

Define functional and user requirements for an operational and sustainable Maintenance Decision Support System

Evaluate FHWA Functional Prototype

Build and evaluate an operational and sustainable Maintenance Decision Support System

Improve the ability to forecast road conditions in response to changing weather and applied maintenance treatments
Pooled Fund MDSs:

- Report actual road conditions
- Report maintenance treatments
- Assess past & present weather conditions
- Assess present roadway state
- Predict storm-event weather
- Recognize resource constraints
- Identify feasible maintenance treatments
- Predict road surface behavior
- Communicate recommendations to supervisors and workers
Pooled Fund MDS S:

Project Timeline (Simplified)

2002
- Assess DOT Needs, Readiness

2003
- Evaluate Functional Prototype
- Develop MDSS Software

2004
- 6-State Limited Deployment

2005
- Refine MDSS Software
- Validation Studies

2006
- 8-State Field Trials
- 10-State Field Trials

2007
- Extensive Deployment
- 13-State Field Trials
- B/C Analysis

2008
- Full Deploy
Extensive Deployment
Weather & Road Prediction Validation
In-Vehicle Instrumentation
In-Vehicle Information to Operators
Improved Physical Models
  - Difficult Weather Conditions
  - Chemical Effects
Integration with DOT Information Systems (Equipment, Scheduling, Traveler Information, etc.)
Benefit/Cost Analysis
Sustainability Issues

- Intellectual Property
  - NOT Public Domain
  - Equity for partners and non-partners

- Architecture
  - Open Architecture
  - Interface Standards
  - System Modularity

- Institutional Issues
  - Fit to specific DOT cultures & practices

- Advancing the State of Art & Practice
Partner Responsibilities

- Contribute Financially
- Contribute Intellectually
  - Project Panel Meetings
  - Conference Calls
  - Technical Product Reviews
- Conduct Field Trials
- Intellectual Property Stewardship
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