

Update on Pooled Fund MDSS Benefit/Cost Analysis

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MDSS Stakeholder Meeting #9

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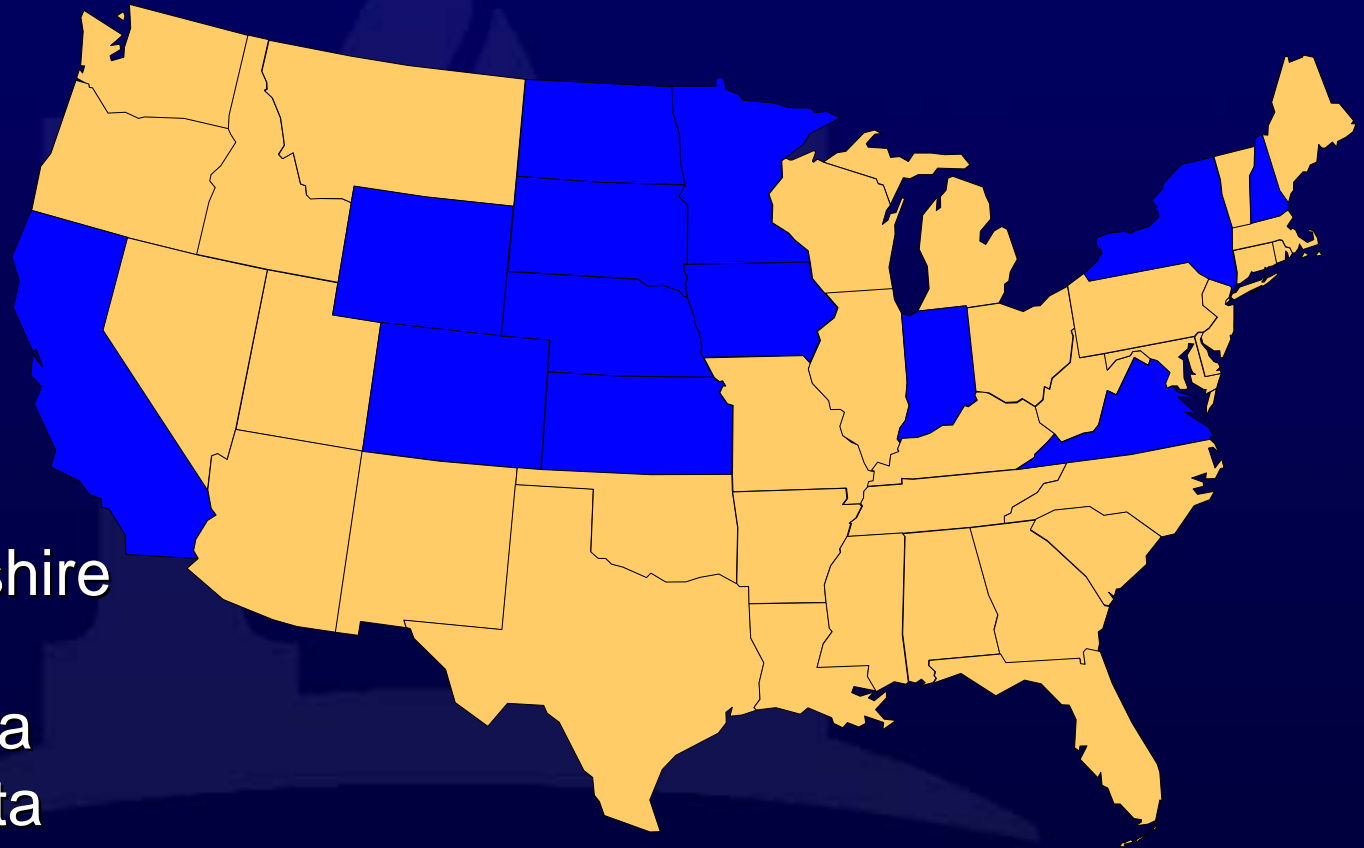
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Pooled Fund Study Partners

- California
- Colorado
- Indiana
- Iowa
- Kansas
- Minnesota
- Nebraska
- New Hampshire
- New York
- North Dakota
- South Dakota
- Virginia
- Wyoming



- Meridian Environmental Technology



Project Background

- Field tests have not examined economic benefits and costs of MDSS
- Project Objectives
 - Describe the essential functions of a winter MDSS
 - Describe the resources needed to supply the essential functions of an MDSS
 - Characterize and estimate the costs and benefits of deploying MDSS in state transportation departments



Project Approach

- Initial information gathering
 - Literature review
 - Stakeholder interviews
- Follow benefit-cost analysis methodology
 - Using MDSS as simulator, in absence of better data
- Matrix of implementation alternatives using case study approach
- Strategic outreach

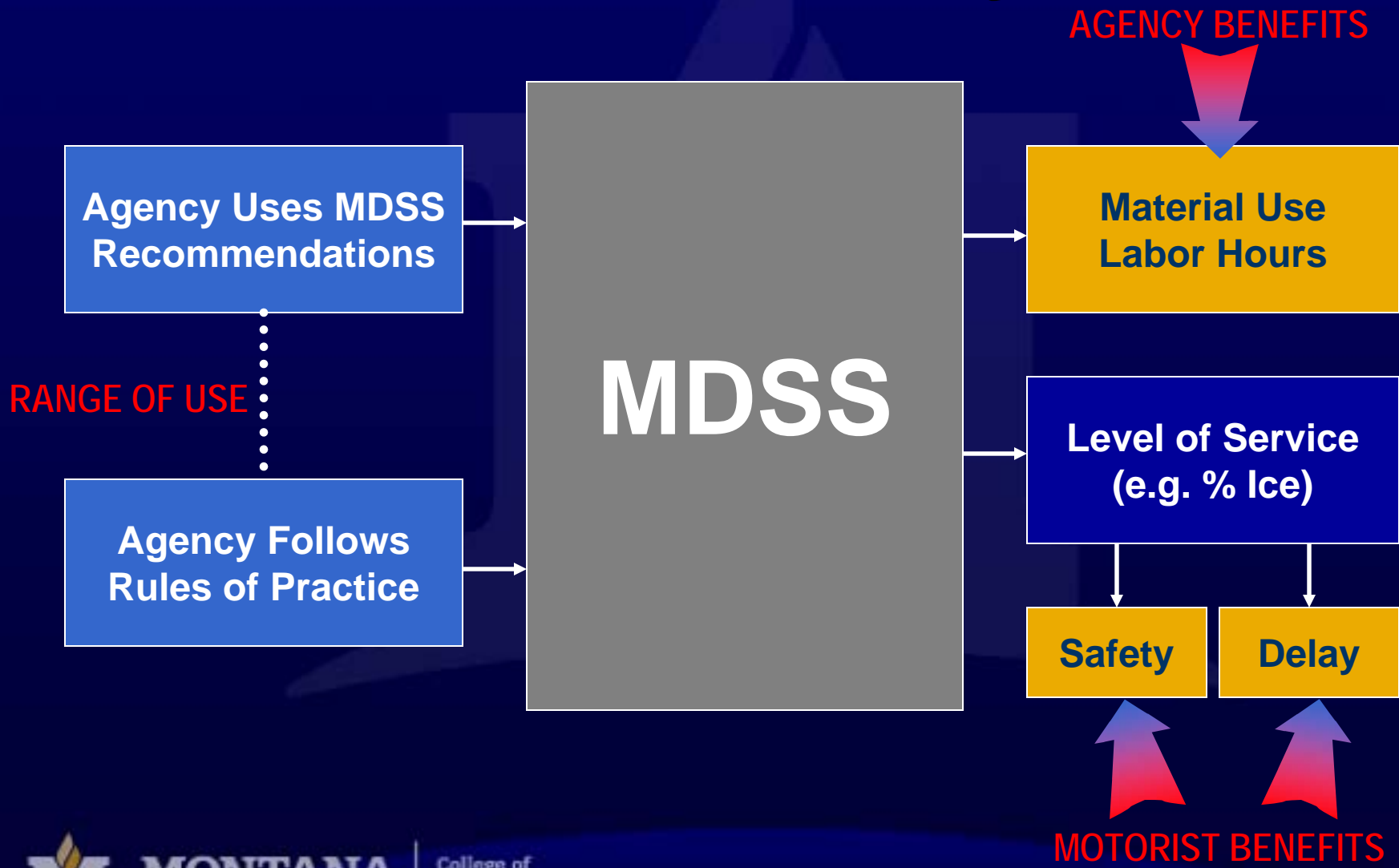


Simulation Approach

- Use MDSS as analytic tool to predict future pavement conditions resulting from various maintenance actions
- Use MDSS outputs to compare the outcomes associated with different maintenance philosophies
- Incorporate risk factors to “dampen” potential benefits



Use MDSS as Analytic Tool



Case Studies

- Three states (CO, MN, NH)
 - Representative of different climates
 - Good historical data on maintenance practices
- Multiple route segments in each state
 - Capture variety of traffic and terrain conditions
- Simulate using ~5 years of historic weather and maintenance data
 - Helps to “tune” MDSS and provide some validation
- Extrapolate to other routes in each state



Benefit-Cost Taxonomy

	Agency	Motorist	Society
Benefit	<ul style="list-style-type: none"> • Reduced labor costs • Reduced materials use • Reduced equipment use • <i>Reduced fleet replacement costs</i> 	<ul style="list-style-type: none"> • <i>Reduced response time</i> • <i>Reduced clearance time</i> • Reduced motorist delay (through improved LOS) • Improved safety (through improved LOS) 	<ul style="list-style-type: none"> • <i>Reduced environmental degradation</i>
Cost	<ul style="list-style-type: none"> • Software and support • Communications • In-vehicle computer hardware • Training • Administration • Weather forecast provider 		

Bold – included in methodology
Italics – not included in methodology

Initial Proposed Result Format

	Case 1	Case 2	Case 3
Alt. 1	xx to yy	xx to yy	xx to yy
Alt. 2	xx to yy	xx to yy	xx to yy
Alt.3	xx to yy	xx to yy	xx to yy

- Uses ranges for benefit-cost ratios (xx, yy) based on range of risks, sensitivity
- Alternatives based on factors such as mobile data collection, adherence to recommendations



Next Steps

Finish simulation activities	Oct 2007
Finish analysis of simulation results	Dec 2007
Presentation of results to PFS	Jan/Feb 2008
Draft & final report	Feb 2008



For more information...

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