Program Risk

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WSDOT Experience

Risk and Performance Management Improving agency performance





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Risk and Asset Management Peer Exchange

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What got us here: using safety and preservation as examples

1. HISTORIC PERSPECTIVE



Highway Construction Program



Telling the story

Pavement:

Target lowest lifecycle cost

Addressing the Pavement Rehabilitation Backlog						
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Funding crisis & meeting pavement preservation goals

Risk: declining funding:

 Maintaining over 20,000 lane miles while funding dropped by \$600 million in 10 years (27% reduction)

Mitigation strategies: Create efficiencies

 Target lowest life-cycle cost – WSDOT achieves pavement condition goals amidst funding crisis

Pavement preservation funding FY 1992 - 2018





Recent Inflation Trend



Gas tax purchasing power declines over time

Gas tax not indexed to inflation

Promise to deliver on time and on budget

...and compelling communication of risk is more important than ever

Funding crisis

- Revenue significantly under projections
- Inflation increasing cost of maintenance and construction
- Challenge in getting another tax increase





Tracking cost versus pavement performance



Pavement:

Innovations to lower costs, preserve life

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Pavement Conditions	in addition	to 2,000 la	ne miles of	namps	1	cial use lanes. These	wads consist of three	
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In 2010, 92.7% of WSDOT-	implement o	out saving	methods to	det	he state's	reads last longer and	cost less. The agency's	
fair or better condition.	Washington State Pavement Jackagement System (W3PMS) has been recognized as one of the best in the nation. It focuses on alternative preservation strategies based on lowest life-cycle							
WSDOT inspictors	costs (LLCC), and has	succeeded i	in main	taining (9% of pavement in fa	ir or better condition	
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Mitigating Risks WSDOT's pavement technology innovations help offset declining investments

WSDOT uses pavement technology to make the state's roads last longer and cost less. Efficiencies include:

- Dowel bar retrofits on concrete pavements
- Selective panel replacement and diamond grinding on concrete pavements
- Converting higher cost asphalt pavements to lower cost chip seal pavements (\$151 million saved as of December 2011)

State highway pavement trends, 1990–2010

All pavement types; good/fair or poor condition; Pavement preservation expenditures in millions of 2011 dollars











Asphalt Pavement Preservation Decisions



Decisions and Outcomes



Uses for Economic Performance Methodologies

- Evaluation of Pavement Management
 - How efficiently are pavements performing?
 - Are the most cost-effective decisions being implemented?
- Evaluation of Pavement Design
 - Is pavement structure over designed or under designed?
- Evaluation of Freight Corridors
 - Are freight corridors designed with the most efficient pavements?

1990-2010: Changes in Pavement Asset Management

Then (1990) Worst first Allocation funding WSPMS as sideline Hveem mix design protocol Volumetrics in the lab Concrete Total Replacement Dowel bar retrofit Thick overlays (>2"+) No westside BST BST only if ADT <2000 ADT

5,000-10,000 No RAP No RAS No clear pavement selection No dowel bar selection Now (2010) Lowest life cycle cost Need based funding WSPMS as key decision making tool Superpave mix design Volumetrics in the field Dowel bar retrofit Triage protocol P-1 protocol (2" overlays for all HMA) All west side regions doing BST BST on all routes under 5,000 ADT and consideration for routes between

Consuming all the RAP produced in the state Test project with RAS Pavement Type Selection Protocol Dowel Bar Selection Protocol

