New Hampshire Department of Transportation Transportation Management Center Road & Weather Program

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TMC Functionality

- Lead Agency
 ITS Program
- Support Agency
 R & W Program

Where does the ITS and R&W Program Overlap? RWIS Sites VSL's



RWIS Inheritance

Communication Links < 50% active Atmospheric & Pavement Sensors Off-line No Monitoring Program No In-house Maintenance Program No longer any buy-in from Maintenance Personnel 10+ sites are programmed for construction in FY 2010



Step 1 - Restore Reliability

Communication Link System Atmospheric Sensors Pavement Sensors

- Started In-house Monitoring
- In-house Maintenance Response < 24 hours
- Today on-line 98%



Monitoring/Maintenance Flow Diagram





RWIS Daily Tracking Sample

	Air			
	Temperatur			
4AM	е	13 F	Visibility	1.11 miles
	Dewpoint			
	Temperatur		Precipitation	
4AM	е	9 F	Туре	None
	Relative		Precipitation	
4AM	Humidity	83%	Intensity	None
	Wind Speed		Wind Dir.	
4AM	(avg)	1 mph	(avg)	S
	Surface		/	
	Temperatur		Surface	
4AM	е	12 F	Conditions	Ice Watch



Step 2 - Ground Truth Baseline Data

- RWIS Scan Web Data
- NWS
- MDSS
- DTN Weather Sentry
- Clarus



RWIS Storm Comparison Data

- Surface Temperature
- Atmospheric Temperature
- Dew Point
- Validated Alert System



Plymouth State University Validation Report

Results

- Atmospheric Sensors Reliable
- Pavement Sensors Problematic
- Forecasting experience at departmental level
- Maintenance personnel request:
 - Storm Activation Notifications
 - Storm Termination Notifications



PSU Task #1: Forecasting Experience

TMC Operators certified in Weather Forecasting through Penn State On-line Courses





PSU Task #2: Map RWIS Data to Storm Activations

- TMC Operators Track Storm Paths
- Alert Notifications sent to District Offices of impending Storm Arrival
- Actual Storm Arrival Tracked
- Activation of Personnel mapped to Storm Arrival



RWIS Storm Activation Mapping



Goal: To close the gap with activations and de-activations

New Kampshire

Map Accidents to Time of Day

December 2008





Road & Weather Operations





Goal: How can we minimize personnel costs and maximize safety?



In Summary:

- Improve Reliability
- Ground truth the RWIS data
- Respond to PSU Validation Study Tasks
- Mapping the R&W Alerts to Storm Activation Data
- LTG: Evaluate Operational & Material Costs



Questions??

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