

Road Weather Management Program – Decision Support Tools

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Road weather affects the safety and mobility of the traveling public. In order to mitigate these road weather impacts, decision support tools must be made available to maintenance and operations staff within the DOTs. Additionally, decision makers in general must also have decision support tools – for instance, school superintendents deciding whether it is safe to run buses; dispatchers routing trucks to make sure the cargo arrives on time; and the little-league coach that needs to decide on cancelling the game. Each of these need decision support tools to make decisions about the reasonableness of travelling, but more importantly – they need decision support tools that will tell them the **impact** of the weather on the roadway; i.e., the impact of **road weather** on their trip. In this presentation, we will explore the following topics:

- Weather affects all of us, but road weather affects our transportation system impacting the roadways and traveler behavior.
- What road weather decision support tools are available today or are under development?
 - Weather Data Environment – a system that collects observations from fixed and mobile sensors, quality checks the observations, and disseminates the observations through on-demand and subscription services
 - Integrated Mobile Observations – a system that deploys road weather sensors on vehicles, collects the observations, and makes the observations available to other systems including decision support systems
 - Pikalert System – a system that collects mobile observations and more traditional weather datasets, assigns these observations to road segments, determines the road weather conditions of the segment, creates impact messages for travelers, and creates forecasts for maintenance and operations.
 - Integrated Model for Road Condition Prediction (IMRCP) - an integrated model for predicting road conditions that incorporates transportation and non-transportation data, deterministic and probabilistic data, and measured and reported data.
 - Road Weather Performance Management (RW-PM) Tool – a tool that works to integrate and optimize existing or planned traffic control and road weather maintenance strategies. The intent of the RW-PM Tool is to leverage connected vehicle and other data sources to support 1) Integration of traffic mobility, road weather maintenance, and motorist advisory management, 2) Continuous real-time assessment of response effectiveness, 3) Continuous real-time adjustment and optimization of traffic control, RW maintenance, and motorist advisory response strategies, and 4) Use of traffic control and road weather maintenance strategies preferred by a DOT for its specific weather hazards and response objectives.

Question: What does road weather affect?

- Roadways
- Traveler Behavior
- Freight Operations
- Automated Vehicles
- All of the above