
Weather Responsive Traffic Management

Concept of Operations

Presented by

***Federal Highway Administration
Office of Operations***

With support from

***Cambridge Systematics, Inc.
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Weather Impacts on Surface Transportation

- **Safety – 452,475 people are injured, and 6,482 people die yearly in crashes that occur during adverse weather**
- **Mobility – 24 percent increase in travel time during peak periods**
- **Productivity – \$3.5 billion lost due to weather-related travel time delay for the freight industry**

Weather Responsive Traffic Management

Goals

- **To better operate the transportation system to alleviate the impacts of adverse weather on safety, mobility, and productivity**
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Weather Responsive Traffic Management Objectives

- **To develop a Concept of Operations to frame the weather discussion**
- **To identify tools and practices for transportation managers**
- **To Improve weather information for travelers and transportation managers**
- **To build a relationship between transportation and weather communities**

Audience is primarily transportation managers, but requires coordination with maintenance and emergency management

Weather Responsive Traffic Management

Concept of Operations

- **Examines response strategies for weather events that impact safety and mobility**
 - **Incorporates strategies for weather responsive transportation management that are currently deployed, but may not be used for weather events**
 - **Used to identify needs/roadblocks to fully integrating weather response into transportation management**
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Strategies for Potentially Mitigating the Effects of Weather

- **Advisory Strategies**
 - **511, websites, HAR, roadside message boards**
 - **Control Strategies**
 - **Weather-responsive traffic signal timings, variable speed limits, road closures, HOV restrictions**
 - **Treatment Strategies**
 - **Snow/ice removal, debris removal**
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Lessons Learned

- **Effective enactment of weather responsive strategies must be supported by:**
 - **An understanding of weather forecasts and the impacts of weather on the roadway**
 - **Specific and measurable performance objectives**
 - **Coordination and information sharing**
 - **Maintenance and operations**
 - **State and local; cross-jurisdictions**
 - **Freeways and arterials**
 - **Specific, shared information on roadway conditions**
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Weather Responsive Traffic Management

Key Needs Identified

- **How does weather affect traffic flow and driver behavior**
 - **How should weather information be integrated into existing transportation management systems?**
 - **Decision support systems**
 - **Traffic modeling**
 - **What is needed to quantify the benefits of weather-responsive transportation management?**
 - **Performance measuring**
 - **How can technology help? How much is needed?**
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Next Steps

- **Continue documenting the state-of-the practice**
 - **Refine the Concept of Operations based on input from practitioners and researchers, and move to advance the state-of-the-art**
 - **Document the effects of weather on operations at a more detailed level**
 - **Encourage institutional cooperation at all levels by documenting and sharing weather impacts and quantifying benefits of weather responsive transportation management**
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 - **Visit <http://ops.fhwa.dot.gov/weather>**
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