



Research Project Statement 19-E01 FY 2019 Annual Program

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| Title: | Weather-Responsive Management Strategies |
| The Problem: | <p>Weather-responsive traffic management (WRTM) strategies increase the effectiveness of traffic operations during adverse road weather conditions and weather-responsive maintenance management (WRMM) strategies help reduce costs associated with winter maintenance. Over the last 10 years, vehicle crashes have averaged more than 5.7 million per year. Nearly 1.21 million crashes, or 21 percent of annual vehicle crashes, occurred under adverse weather conditions. On average, nearly 6,000 people are killed and over 445,000 are injured in weather-related crashes each year. Likewise, the delays associated with weather can be profound, resulting in significant losses in efficiency. About 25 percent of non-recurring delays are due to weather. Congestion costs about \$9.5 billion per year in 85 urban areas. Weather-related delays add about \$3.4 billion per year to freight costs. Chemicals used for anti-icing and de-icing affect watersheds, air quality and infrastructure.</p> <p>WRTM strategies provide relevant and timely information to agencies on the need for appropriate traffic intervention methods to mitigate the impacts of weather-related road and traffic conditions. The result is improved mobility, reduced delays, and safer travel during inclement weather. WRMM strategies are also used by agencies to improve mobility and safety in adverse weather, as well as reduce the negative environmental impacts and costs associated with road salt use.</p> |
| Technical Objectives: | <ol style="list-style-type: none"> 1. Use mobile and connected vehicle data to increase the effectiveness of traffic operations and reduce costs associated with maintenance during adverse road weather conditions. 2. Maximize the use of mobile road weather data to support DOTs and local transportation agencies in implementing traffic and maintenance management strategies during inclement weather. 3. Improve safety and reliability, and maximize environmental impacts of weather, on the transportation system. 4. Develop a weather-responsive maintenance strategy (WRMS) that can be tested up to a demonstration stage in the Innovation Implementation Stage scale. 5. The expectation of this project is that the end product will obtain a TRL level 6. |
| Desired Deliverables: | <ol style="list-style-type: none"> 1. Technical memorandum for each task completed. 2. Monthly progress reports. 3. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the research report. 4. Research report documenting the findings of the research, including including development and effectiveness of the WRMS. 5. Project Summary Report. |
| Proposal Requirements: | <ol style="list-style-type: none"> 1. Utilize the deliverable based templates (see the appendices provided). 2. Proposals will be considered non-responsive and will not be accepted for technical evaluation if they are not received by the deadline or do not meet the requirements stated in RTI's University Handbook. 3. Proposals should be submitted in PDF format, 1 PDF file per proposal. The PDF File name should include Project Statement Title, Project Statement Number and abbreviated Performing Agency(ies) Name. 4. This project will be tracked during the life of the project using a Technology Readiness Level (TRL) scale. More information about the use of a TRL can be found at https://www.fhwa.dot.gov/publications/research/ear/17047/17047.pdf. |

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| Pre-Proposal Meeting Information: | Friday, December 7, 2018 10:00 AM - 11:30 AM Austin Riverside Campus 118 E. Riverside Drive RTI Conference Room, 1st Floor Webex Information: 1. See attached Webex meeting notification. 2. If requested, enter your name and email address. 3. If a password is required, enter the meeting password: De8Mft7N 4. Click "Join". Teleconference information: Provide your phone number when you join the meeting to receive a call back. Alternatively, you can call: Call-in toll-free number: 1-855-437-3563 (US) Conference Code: 734 619 030 |
| Proposal Deadline: | Proposals are due to RTI by 3:00 PM Central Time, Thursday, January 24, 2019. Email proposal submissions are to be sent to RTIMain@txdot.gov . |