ROAD WEATHER RESEARCH AND DEVELOPMENT PROGRAM

INVESTMENT OPPORTUNITIES

In the U.S. each year, more than 7,000 highway deaths and 470,000 injuries are associated with poor weather-related driving conditions. The annual economic toll of these deaths and injuries is estimated at $42B. Continued support for the Road Weather Research and Development Program (Ref SAFETEA-LU Sec 5308) is required to address transportation safety, mobility, and environmental quality by reducing the impacts of weather and poor road conditions on the national surface transportation system.

EXPECTED OUTCOMES

Enhanced Mobility – Five hundred million hours of delay occur during poor weather each year. Improved knowledge of adverse weather and road conditions will be used by commercial operators, DOTs, and the traveling public to avoid hazards and to optimize routing. Advanced road condition information will allow Traffic Management Centers (TMCs) to optimize mobility by taking proactive control measures.

Preserving the Environment - Through improved snow and ice control information, DOTs will have significantly improved guidance on how to treat the roadways during winter weather conditions resulting in a reduction in human resources and anti-icing chemicals. Improved route planning systems will allow travelers to reduce the impact of congestion and hence emissions.

Preventing Accidents - Through improved road condition monitoring, utilization of vehicle probe data, and human factors research, drivers will be able to receive real-time safety critical weather and road hazard products in the vehicle allowing them to avoid dangerous situations.

Improved Weather & Road Condition Prediction - A seamless road-weather data collection, processing, and dissemination system would be completed enabling the transportation industry to develop and implement critical road hazard products. Weather forecasts will be more accurate as fixed and mobile surface transportation observations are incorporated into public (e.g., NOAA) and private weather service products.

Connected Vehicle Road Weather Products - Vehicle probe data will become available and be used to improve real-time weather, air quality, and road condition hazard products for DOT system operators, drivers, and public health officials.

Pavement Condition Diagnosis and Prediction - An improved understanding of the weather-road interface will improve road weather decision support system technologies for traffic, incident, and emergency management, maintenance operations, and in-vehicle information systems.

Instrument Technology – Robust pavement condition monitoring requires the development of new remote and in situ sensors that will provide safety critical information on the condition of the roadway to transportation system decision-makers.