RESEARCH IN PROGRESS

Leveraging connected vehicle technology for use in road weather management

Keeping close track of weather-related road conditions is crucial for driver safety and convenience. Existing road weather information systems collect data from various sources to help transportation agencies decide how, when, and where to deploy road maintenance resources and issue travel advisories. Gaps in data coverage persist, however, as no weather-related data source is ubiquitous. Drivers may not be aware of road conditions where they plan to travel.

Iowa DOT and other Aurora program pooled fund member states have traditionally used dynamic message signs, plow cams, and websites to communicate road conditions. "We've developed some great tools to convey road condition information to drivers,"

explained Tina Greenfield, Iowa DOT's road weather information system coordinator. "But we need a communication method for drivers to use while driving because they can't keep looking down at their phones."

As the lead state of the Aurora program, Iowa DOT is working with other stakeholders to determine road weather tracking needs that could benefit from connected vehicle (CV) communications. An in-depth review of the current state of technology, devices, and equipment requirements, as well as what's on the horizon, could help identify feasible applications to enhance road weather system capabilities.

The research will culminate in a concept of operations that will describe the potential applications of CV communications and data

to improve road weather tracking from a state DOT perspective. Greenfield noted that there are many variables to consider, such as understanding information standards for vehicle computers and identifying the Federal Communications Commission channels that are available. "We need to understand the state of affairs," she said, "to know if there are any solid ideas to move forward."

The research is expected to conclude in April 2024.

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