



## ABOUT THIS PROJECT

**PROJECT NAME:** An Intelligent Human-Centric Communication System for Adverse Weather and Road Conditions

**PROJECT NUMBER:** TPF-5(435)

**PROJECT FUNDING PROGRAM:**  
Aurora Pooled Fund, a 19-state collaborative research effort

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**PROJECT CHAMPION:**  
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# RESEARCH IN PROGRESS

## New technology for alerting drivers to adverse road conditions

Severe weather conditions create potential safety issues for Iowa's drivers throughout the year, so access to current information is essential. Technology-enabled tools have become commonplace in smartphones and onboard vehicle computers. These tools provide access to some road information, such as traffic patterns, road closures, and weather updates, to help drivers make informed planning decisions. Artificial intelligence (AI) presents a further step in the evolution of navigation and forecasting technologies with its ability to interact in response to a driver's spoken request.

Recognizing the potential of AI, Iowa DOT has proposed the development of Conversational AI for Road Weather Information Systems

(CARWIS). This system would allow a driver to verbally request specific information about weather and road conditions; the system would then draw from multiple weather data sources to provide up-to-date details.

"Many drivers are comfortable receiving real-time traffic information from apps and other devices in their cars," said Tina Greenfield, Iowa DOT's road weather information system coordinator. "The system we envision could offer that same benefit for dangerous weather and road conditions while ensuring that drivers focus on the road."

Information is already available in many online locations, including Iowa DOT's 511 travel information webpage ([511ia.org](http://511ia.org)). However, once drivers are on Iowa's roads, they

cannot legally access these sites via cellphone while driving, so they may not realize when conditions shift.

"Crowdsourced apps like Waze and Apple Maps update drivers on road conditions when other app users are present," Greenfield said. "But Iowans also rely on our less-traveled rural roads. We want to make this critical safety information accessible to everyone throughout the state."

The project is expected to conclude in July 2025.

To learn more about this project and subscribe to updates, visit [Idea #3499](#).

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