

About ENTERPRISE

Evaluating New Technologies for Road Program Initiatives in Safety and Efficiency

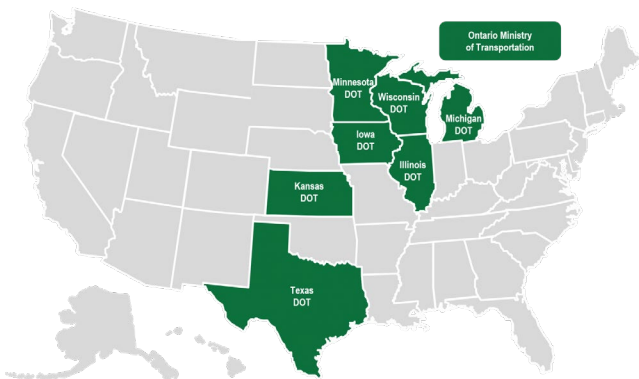
Established in 1991 when Intelligent Transportation Systems (ITS) technologies were early in their development, the ENTERPRISE pooled fund study has been a consistent leader in the development and application of ITS innovations. ENTERPRISE has facilitated collaboration among numerous state DOT and Canadian transportation organizations for a quarter century, producing more than 80 research products that advance the highway operations strategies of member agencies and the entire transportation community. The lead state for the current pooled fund study, [TPF-5\(490\)](#), is the Michigan Department of Transportation.

Benefits of Membership

ENTERPRISE addresses the challenges of transportation operations by sharing members' ITS solutions and by developing new approaches based on scientific research. Member agencies identify needs, choose research goals, evaluate progress and implement results, all from a practitioner's perspective.

Members accelerate research in tune with emerging needs and newly available technologies, always with an eye to integrating effective solutions into day-to-day operations.

ENTERPRISE membership is open to federal, state, local agencies and other industry organizations. Current members include state DOTs in Illinois, Iowa, Kansas, Michigan, Minnesota, Texas and Wisconsin, and the Ontario Ministry of Transportation.



Current ENTERPRISE Projects

State of the Art Roadway Sensors – Phase 1/Phase 2

There are a variety of existing and innovative types of roadway sensors available to gather data and/or communicate with vehicles as part of roadway operations. To understand the potential benefits and drawbacks of each sensor type, as well as operational and maintenance considerations, Phase I is working to identify the commercially available options that collect data beyond the current state of practice. Phase 2 will build upon this work by narrowing the options to a list of specific sensors and possible approaches for future test bed assessments.

New Methods of Traffic Data Collection

This project explores emerging methodologies for collecting the traffic data transportation agencies need to improve Highway Performance Monitoring System reporting, with a focus on the costs and benefits as compared with more traditional methods.

Potential Approaches for Wrong Way Driving Applications – Phase 2

Phase 1 of this project explored the potential for in-vehicle navigation systems and mobile apps to provide wrong way driving (WWD) alerts. The current phase continues to expand outreach efforts to industry and public entities and further explores the potential for in-vehicle navigation systems and mobile apps to provide WWD alerts.

Procurement Specification for Physical Security of ITS

ITS field devices and infrastructure are vulnerable to theft, vandalism, and security breaches. This project documents best practices for securing and procuring field equipment, and creates "model" performance specifications for boxes, shelters and cabinets.

Novel Uses of UAS in ITS

A growing body of research has investigated the use of drones to monitor traffic and special events. This project explores these and other use cases to demonstrate ways to optimize UAS integration with ITS.



QR code to all research projects.

2021-2022 ENTERPRISE Completed Projects

Final Reports available at: <https://enterprise.prog.org/research-projects/>

Potential Approaches for Wrong-Way Driving Applications

Wrong-way driving is a growing concern on roadways because resulting crashes are often severe or even fatal. Transportation agencies are deploying on-road countermeasures at select locations, but these only go so far to reduce wrong-way crashes. In-vehicle navigation systems and mobile apps could reach many more drivers by providing alerts whenever and wherever the app is being used. For this project, outreach to automobile manufacturers and mobile app developers explored the potential for in-vehicle navigation systems and mobile apps to provide wrong-way driving alerts.

State of Practice for Automated Traffic Incident Detection

Traffic management center (TMC) operators need to be alerted of roadway incidents in a timely manner to initiate response efforts and manage traffic implications. This project researched the state of practice for commercially available automated incident detection (AID) systems, focusing on products and tools that can detect multiple types of common roadway incidents and provide alerts to TMC operators.

Best Practices in Future Proofing for Emerging Technologies

Transportation agencies invest significant resources to deploy and operate emerging technologies and ITS assets in both urban and rural areas. To ensure these investments will continue to have value in the future, this project explored best practices and approaches for maintaining transportation ITS assets. After identifying seven categories of potential threats, including natural, human interactions, functional performance, extended use, financial, license/policy/regulatory, and security threats, the researchers offered strategies to mitigate and manage the risks.

Establishing a Framework for Communicating DOT Map Updates to Mapping Companies

Road closures, detours and changes to road alignments can all affect the accuracy of driving apps and navigational maps offered by companies like Google, Waze, Apple, and others. Many transportation agencies would like to provide updates to ensure maps are accurate but aren't sure of each company's process. This project developed a framework that agencies can use to communicate updates to each company and identifies additional efforts states may collectively consider for defining and standardizing the process nationally in the future.

Understanding Infrastructure Operations Impacts Based on AV Demos

Automated vehicle (AV) demonstrations are becoming more widespread but the infrastructure changes and needs required for AVs may not be clear to transportation agencies. To help agencies prepare for future AV demonstrations and operations, this project captured insights from agencies that have conducted low-speed AV shuttle demonstrations to understand whether infrastructure changes and the roles of agency and private-sector stakeholders are representative of needs and roles in future, long-term AV deployments.

Pedestrian Detection Systems for Improved Safety

The United States has experienced a significant increase in traffic-related pedestrian fatalities since 2009. Detection-based pedestrian safety technologies have the potential to improve safety for pedestrians. This project explored pedestrian traffic safety issues, recent advancements in detection-based pedestrian safety technologies, and opportunities for future research.

