

UTC Project Information	
Project Title	MPC-685 – MPC Regional Emergency Evacuation Analysis in Traffic with Connected and Autonomous Vehicles
University	North Dakota State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	<p>USDOT, Office of the Assistant Secretary for Research and Technology \$165,127</p> <p>North Dakota State University \$165,127</p>
Total Project Cost	\$330,254
Agency ID or Contract Number	69A3551747108
Start and End Dates	February 9, 2022 to July 31, 2024
Brief Description of Research Project	This project is proposed to address the MPC region’s urgent needs for best utilizing the existing infrastructure during emergency evacuation by natural disasters such as wild fires by taking advantages of the fast development in data collection from connected and autonomous vehicles. Such an analysis is expected to provide the emergency evacuation officials and residents suggested action plan based on the simulation predictions of hazard spreading.
Describe Implementation of Research Outcomes (or why not implemented)	The implementation of our research outcomes depends on various factors, including practicality, willingness of stakeholders, and available resources.
Place Any Photos Here	The study on Connected Vehicle Data for Wildfire Evacuations provides valuable insights for enhancing evacuation planning and real-time traffic management during wildfires. However, successful

	<p>implementation relies on local emergency management agencies embracing data-driven strategies. Similarly, the research on Driving Behavior in Wildfire Evacuations offers potential for more efficient evacuations, but it necessitates collaboration with transportation authorities to translate insights into actionable strategies. As for the study on Autonomous Vehicles in Winter Conditions, its implementation is contingent on the decisions made by the AV industry and regulatory bodies. The extent of application varies based on the readiness and adaptability of these entities.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>The impacts and benefits are significant:</p> <ol style="list-style-type: none"> a) The successful utilization of real-time data for microsimulation further advances transportation planning and safety management. If widely implemented, it can lead to quantifiable enhancements in evacuation times and traffic flow during wildfires. b) Improve evacuation planning, potentially reducing accidents and congestion, leading to safer and smoother evacuations. c) Provides valuable insights for targeted marketing and development of AV technology, potentially increasing adoption rates and providing economic benefits to the AV industry. <p>While precise quantification varies, these studies collectively contribute to enhanced safety, efficiency, and resilience in transportation and emergency response.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	<p>https://www.ugpti.org/resources/reports/details.php?id=1150</p>