

UTC Project Information	
Project Title	MPC-591 – Reliability-Based Traffic Safety Risk Assessment of Traffic System in Hazardous Driving Conditions to Promote Community Resilience
University	Colorado State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Research and Innovative Technology Administration \$56,000 Colorado State University \$56,000
Total Project Cost	\$112,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	February 26, 2019 to July 31, 2022
Brief Description of Research Project	Traffic crash risks considerably increase on bridges and connecting roadways under various hazardous driving conditions before and following some natural hazards, such as earthquakes, hurricanes, and snowstorms. During different phases of natural hazards, appropriate preparation, response and recovery efforts to improve the community resilience all depend on safe and efficient transportation even under hazardous driving conditions. This project will develop a basic framework to model traffic safety risk based on reliability theory by considering various adverse driving conditions, potential vehicle safety risks and associated uncertainties.
Describe Implementation of Research Outcomes (or why not implemented)	The proposed model may help future traffic safety modeling and prevention.
Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	It will provide an integrated tool with more accurate consideration of various adverse driving conditions, including those in work zones.
Web Links <ul style="list-style-type: none"> • Reports • Project Website 	<ul style="list-style-type: none"> • MPC Research Report – Reliability-Based Traffic Safety Risk Assessment of Traffic System in Hazardous Driving Conditions to Promote Community Resilience • CSU Doctoral Dissertation – Multi-Scale Traffic Performance Modeling of Transportation Systems Subjected to Multiple Hazards

	<ul style="list-style-type: none">• Journal Article – <u>Study of Work Zone Traffic Safety under Adverse Driving Conditions with a Microscopic Traffic Simulation Approach</u>• Journal Article – <u>Framework of Simulation-Based Vehicle Safety Performance Assessment of Highway System under Hazardous Driving Conditions</u>
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