

<b>UTC Project Information</b>	
Project Title	MPC-534 – Traffic Performance Assessment of Disrupted Roadway Networks Following Earthquakes
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 \$57,000  Faculty and student time, CSU. \$57,000
Total Project Cost	\$114,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	November 2, 2017 to July 31, 2022
Brief Description of Research Project	<p>Earthquakes can cause catastrophic damages to infrastructures in urban areas, such as buildings, bridges, pavements, communication, and energy infrastructures etc. A degraded or disrupted transportation system following a major earthquake may involve different levels of reduced functionality caused by (1) physically damaged infrastructure, (2) partially blocked roads due to debris, falling trees, poles or other facilities, or (3) limited mobility due to serious congestion and/or possible accidents under hazardous driving conditions (Sullivan et al. 2009; Mattsson and Jenelius 2015). To rationally predict the performance of degraded transportation systems before, during and following earthquakes is crucial to smooth emergency response, effective recovery and developing optimal hazard mitigation strategy. However, post-hazard performance of disrupted transportation network has been primarily studied in a large scale and simplified manner without capturing the detailed disrupted nature caused by different hazards, considering the impacts from the damage and failure of other infrastructure and predicting the corresponding impact on transportation performance.</p> <p>Research Objectives:</p> <ol style="list-style-type: none"> <li>1. Characterization of disrupted roadway scenarios following earthquakes</li> <li>2. Develop a multi-scale simulation tool for transportation performance assessment</li> <li>3. Demonstration of the proposed traffic performance assessment</li> </ol>

	<p>This study will develop an analytical framework of studying traffic performance of roadways in a transportation network following earthquakes through modeling the reduced functionality from various sources with the objectives listed above.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none"><li>• Reports</li><li>• Project Website</li></ul>	