

**EXHIBIT F**

<b>UTC Project Information</b>	
Project Title	Real-Time Recommendations for Traffic Control in an Intelligent Transportation System During an Emergency Evacuation
University	North Carolina A&T State University (N.C. A&T)
Principal Investigator	Xiuli Qu
PI Contact Information	Xiuli Qu, Ph.D., Associate Professor Department of Industrial and Systems Engineering North Carolina A&T State University 1601 E. Market Street, Greensboro, NC 27411 Phone: (336) 285-3733 Fax: (336) 334-7729 E-mail: <a href="mailto:xqu@ncat.edu">xqu@ncat.edu</a>
Funding Source(s) and Amounts Provided (by each agency or organization)	DOT Center for Advanced Transportation Mobility (CATM): \$ 149,938  NC A&T: \$ 75,008
Total Project Cost	\$ 224,946
Agency ID or Contract Number	
Start and End Dates	6/1/2020 – 8/31/2021
Brief Description of Research Project	Recent hurricanes caused mass evacuations and brought attention to many issues and challenges during these mass evacuations. Effective and proper traffic control is crucial during an emergency evacuation, and intelligent transportation systems (ITSs) can play an important role in mass emergency evacuations. Moreover, diversity in human evacuation behavior (e.g., leaving versus staying, and different evacuation times and routes chosen by individuals) should be considered in the planning and implementation of an emergency evacuation. More ITSs incorporating information technology and smart sensors have been built in North Carolina. These ITSs provide us opportunities to improve the effectiveness and efficiency of emergency evacuations. In this project, we propose to create ecological models for human evacuation behavior prediction using Monte-Carlo simulation, Brunswik's Lens model and machine learning algorithms, which

	<p>will be integrated with optimization models to generate initial evacuation traffic control plans. We will also develop a predictive model for the changes in the number of connections of hurricane-affected airlines and airports and an optimization model to recommend personalized, multi-modal options for passengers whose flights are cancelled. The predictive and optimization models to be developed in this project will help improve the safety and mobility of people during a hurricane evacuation.</p>
<p>Describe Implementation of Research Outcomes (or why Not implemented)</p> <p>Place Any Photos Here</p>	<p>The team will develop a visualization tool that can illustrate predicted hurricane evacuation traffic flows in North Carolina under different traffic control policies.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>The proposed tool can support the choice of initial evacuation traffic control plans for a hurricane evacuation.</p>
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project Website</li> </ul>	<p><a href="https://www.ncat.edu/cobe/transportation-institute/catm.html">https://www.ncat.edu/cobe/transportation-institute/catm.html</a></p>

