EXHIBIT F

UTC Project Information	
Project Title	Multi-scale models for transportation systems under emergency
University	North Carolina A&T State University (NCAT) Embry-Riddle Aeronautical University (ERAU)
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Agency ID or Contract Number	69A3551747125
Start and End Dates	1/1/2017 – 12/31/2018
Brief Description of Research Project	The range of emergencies that can affect transportation networks varies from foreseeable weather related events (e.g., severe storms), to man-made disasters (e.g., terrorist attacks) to epidemics (e.g., 2014 Ebola disaster). Over the past decade, the frequency and intensity of these disasters has increased, causing significant disruptions in local and regional transportation systems. How to prepare for and respond to a disruption in transportation systems is a complex decision incorporating a variety of factors, from system use to system preparation. Moreover, unexpected human behaviors (e.g., disordered movements) often occur during emergency situations. The human behaviors under

	panic affect the process of evacuation and further complicate decision-making in the preparation and response to a disruption. To address these challenges, we will develop optimization and simulation models to support the decision-making processes during emergency. Optimization models will determine which actions are taken to prepare for and respond to disruptions in transportation systems. Simulation models will be used to compare and evaluate the outcomes among decisions/policies, and identify the effectiveness of policies. Analyses and models in this project will be conducted at two interdependent scales – at the local scale of individual transportation modes (e.g., airplane, subway, ferry, etc.) and transportation hubs, and at a macro-scale across geographical regions or at a network level.
Describe Implementation of Research Outcomes (or why Not implemented)	The team will try to implement research outcomes in local transportation systems, such as airports, and highway.
Impacts/Benefits of Implementation (actual, not anticipated)	Pending project completion

Web Links
   • Reports
   • Project Website
	http://www.ncat.edu/cobe/transportation-institute/Files2013/4_2-EmergencyAbstract.pdf