**EXHIBIT F**

| **UTC Project Information** | |
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| Project Title | Particle Dynamics Model for Hurricane Evacuation and Fuel Shortage: Model Based Policy Analysis |
| University | Embry-Riddle Aeronautical University |
| Principal Investigator | Sirish Namilae |
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| Funding Source(s) and Amounts Provided (by each agency or organization) | Federal Funds (USDOT UTC Program): $50,000<br>Cost Share: $25,000 |
| Total Project Cost | $75,000 |
| Agency ID or Contract Number | 69A3551747125/270128 E |
| Start and End Dates | 02/01/2018 - 01/31/2019 |
| Brief Description of Research Project | Recent hurricanes like Mathew and Irma have led to mass evacuations. For example, News reports indicate that evacuation orders were issued to about seven million people from Florida, Georgia and South Carolina for Hurricane Irma [1]. Mass evacuations frequently lead to traffic jams because of high volume and increased incidence of road accidents. Fuel shortages have been witnessed during many recent hurricanes including Katrina, Rita, Harvey and Irma, which result in stranded cars and exacerbate traffic problems.<br><br>There is extensive research on modeling the evacuation decision making during hurricanes [5, 6], however these models are too coarse to evaluate the effects at the level of individual automobiles and gas stations. We will develop a microscale particle dynamics model of the evacuation process incorporating individual cars and gas stations that can be useful in evaluating the effect of gas shortages and traffic incidents in the evacuation process. We will use massive parallel computing to evaluate the large parameter space and identify opportunities and vulnerabilities that enable |

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| | effective policy design. |
| Describe Implementation of Research Outcomes (or why Not implemented)<br><br>Place Any Photos Here | Pending project completion |
| Impacts/Benefits of Implementation (actual, not anticipated) | Pending project completion |
| Web Links<br>• Reports<br>• Project Website | Project website under construction. Link will be updated by May 2018 |