Grant Deliverables and Reporting Requirements for UTC Grants

UTC Project Information	
Project Title	Understand the Diverted and Induced Demand of UAM
University	University of South Florida
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT: $80,535 USF: $65,227
Total Project Cost	$145,762
Agency ID or Contract Number	Sponsor Source: Federal Government CFDA #: 20.701 Agreement ID: 69A3551747119
Start and End Dates	Start date: 10/01/2020 End date: 09/30/2021
Brief Description of Research Project	Traffic congestion and consequent excessive air pollutant emissions are leading sustainability issue in the US. Urban Air Mobility (UAM) is an emerging concept proposed in recent years that uses electric vertical take-off and landing vehicles (eVTOLs), which is expected to offer an alternative way of transporting passengers and goods in urban areas with significantly improved mobility by making use of low-altitude airspace. Also, eVTOLs generate zero air pollutant emissions during operations. If the electricity (or partial of the electricity) comes from clean and renewable resources and eVTOLs are used efficiently, then UAM is also expected to be an environmentally friendly transportation mode. In current limited references, authors assumed simplified mode choice decisions for estimating diverted demand from existing ground transportation modes, and also did not estimate induced demand that could be caused by the system performance improvement due to the introduction of UAM. Such induced demand includes induced ground traffic demand due to mitigated

	traffic congestion and induced demand of UAM service due to improved mobility. In this study, the research team will design a stated preference survey questionnaire to investigate the potential of UAM in context of relieving ground congestion, willingness to pay, and mode shift. First, the current research aims to design an exploratory framework that will contribute to understanding how to approach the analysis of diverted and induced demand in case of UAM. Second, it will provide more insights on the factors (both psychological attitudes and socio-demographic characteristics) that will play a role in the adoption of UAM. Third, the study will explore how daily commute times and congestion status in respondents' current locations relate to the willingness to pay for UAM and willingness to use UAM. To answer the abovementioned research questions, both qualitative and quantitate analysis will be performed. The qualitative approach will allow to capture, analyze, and explain the behavioral component of study while the quantitative methods such as advanced statistical and econometric models will provide additional insights into the relationship between dependent variable of interest and independent variables. Lastly, utility functions with expanded transportation mode choices will be explored to estimate diverted demand and induced demand.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • Reports • Project website	https://ctech.cee.cornell.edu/final-project-reports/