Grant Deliverables and Reporting Requirements for UTC Grants

UTC Project Information	
Project Title	Reducing Airport Pollution and Consequent Health Impacts to Local Community
University	University of South Florida
Principal Investigator	Yu Zhang
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT: $59,389 USF: $33,856
Total Project Cost	$93,245
Agency ID or Contract Number	Sponsor Source: Federal Government CFDA #: 20.701 Agreement ID: 69A3551747119
Start and End Dates	Start date: 10/01/2017 End date: 09/30/2018
Brief Description of Research Project	Research shows that air pollution caused by a large airport could be equivalent to that produced by many hundreds of miles of freeway traffic. Airplane air pollution include ultrafine sulfur dioxide, nitrogen oxide and other toxic particles, which not only affect employees and passengers on airport and residents near airport but could spread to as far as 10 miles and cause health concerns of a significant amount of population. This study looks into the sources of local air pollution from aviation activities, for instance, ground access vehicles to and from the airport, aircraft taxiing at airfield surface, landing and take-off (LTO) cycle of aircraft, airport ground equipment etc. and calculate the air pollution inventory of case study airport by using FAA Aviation Environmental Design Tool (AEDT). The natural extension of this study is to estimate the benefit pools of operational improvements due to increased productivity and implementation of emerging technologies/procedures. A simulation-based scenario analysis will be performed to quantify the emission mitigations. The scenarios that are worthy of study include:

	electrification of ground support equipment (GSE); deployment of alternative aircraft taxiing systems (AATS), and integrated arrival, departure, and surface (IADS) traffic management.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	The methodology of calculating airport air pollutant emission is developed into a course module and included in the Air Transportation course being taught at USF in each spring semester.
Impacts/Benefits of Implementation (actual, not anticipated)	The research outcomes advanced the education and work force development. Students can observe how the aircraft operations affect the usage of ground support equipment so that lead to different levels of air pollutant.
Web Links • Reports • Project website	http://ctech.cee.cornell.edu/final-project-reports/