UTC Project Information	
Project Title	Vehicle Occupants and Driver Behavior: An Assessment of Vulnerable User Groups
University	Texas A&M Transportation Institute
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Start and End Dates	June 1, 2017-August 31, 2018
Brief Description of Research Project	The question of whether driver behavior differs based on vehicle occupancy—and more specifically, the characteristics (such as age and relationship) of the occupants—is an important safety question related to the Safe-D application areas of risk assessment, vulnerable users, and driver factors and interfaces; as well as the theme of big data analytics. Although the Strategic Highway Research Program 2 (SHRP2) dataset, and data collected by insurance companies that use Global Positioning System (GPS) vehicle tracking to assess discounts, capture details about the driver and their habits, they lack concrete information (i.e., age, relationships) on passengers in the vehicle for a given trip. The objective of this research is to better understand the impact of vehicle occupants in speeding driving behavior. This will be accomplish through the use of Texas Department of Transportation Travel Survey Program (TxDOT TSP) household travel survey data, which includes a 10% sample of households with a GPS component for trip capture. TxDOT TSP GPS data will be linked to roadway characteristics using the TxDOT Road Highway Inventory Network (RHiNo) data and supplemental speed data from other sources. A crash risk assessment will be developed by linking to TxDOT Crash Records Information System (CRIS) crash data. Statistical analyses of speeding behavior will be performed, with special emphasis placed on vulnerable users (i.e., older drivers, teen drivers, and potential drivers with young children). The results will be used to recommend appropriate safety countermeasures and may be of interest to TxDOT, transportation engineering and public health

	statistics students, and safe driving technology firms interested in merging traditional planning data for use in a safety application.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	1)Deliverable of final report 2)Journal article 3)Form of cleaned/aggregated data suitable for public access (see work plan for details) 4)Education and Workforce Development Plan • Real-world example that could be incorporated into a graduate level transportation or public health statistics class • Data visualization and data merging of the TxDOT TSP household GPS data, the RHiNo data, and the CRIS crash database will provide an interesting learning module for a graduate level transportation or public health GIS course • Anticipated that the results of this study will be incorporated into the transportation planning break-out session associated with the TTI Advancement via Individual Determination (AVID) middle school visit • Plan to fund a graduate student to work 20 hours a week over the 15 month course of the project in Graduate Assistant Research (GAR) position, with topic as thesis 5)Technology Transfer Plan • Documented methods of how household GPS data were cleaned and merged with the statewide roadway crash risk assessment network • Learning modules for transportation and public health courses • Incorporation in to the curriculum of the TTI AVI Middle school visit • Completion of scholarly journal article involving graduate student • Presentation of results to interested researchers in form of webinar
Impacts/Benefits of Implementation (actual, not anticipated)	• Added value shown to TxDOT Travel Survey Program data • Development of safety countermeasures related to results
Web Links • Reports • Project website	http://www.vtti.vt.edu/utc/safe-d/index.php/projects/vehicle-occupants-and-driver-behavior-an-assessment-of-vulnerable-user-groups/