

UTC Project Information	
Project Title	MPC-542 – Exploratory Modeling and Analysis for Automated Vehicles in Utah
University	University of Utah
Principal Investigator	Xiaoyue Cathy Liu
PI Contact Information	Assistant Professor University of Utah Phone: (801) 587-8858 Email: cathy.liu@utah.edu ORCID: 0000-0002-5162-891X
Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Research and Innovative Technology Administration \$50,000 Utah Department of Transportation \$50,000
Total Project Cost	\$100,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	November 15, 2017 to July 31, 2022
Brief Description of Research Project	<p>Technological advances are impacting transportation across many dimensions. Private industry is driving one of the major advances, automated vehicles (AVs), with a number of companies ranging from Google to Audi testing cars with full automation (SAE Level 5). The organizations tasked with planning for transportation facilities – DOTs and MPOs – are in a reactive mode in figuring out how best to respond.</p> <p>AV will impact mobility, congestion, and safety, and their introduction into the vehicle fleet clearly brings a great deal of uncertainty with respect to forecasting travel demand and vehicle operations. AVs will deliver mobility to historically low mobility demographics such as the elderly, disabled, and children. AVs will also reduce the burden of long travel times by enabling passengers to focus on tasks other than driving. Both of these effects suggest that AVs will amplify growth in Vehicle Mile Traveled (VMT) that is already projected to increase due to population growth in Utah. Utah is currently the fastest growing state in the U.S., and this growth will most certainly translate into higher levels of VMT in the future. AVs are likely to reinforce the traditional source of VMT growth from population and economic growth. The timing and magnitude of this VMT-augmentation are not well understood, however.</p> <p>Research Objectives:</p> <ol style="list-style-type: none"> 1. To estimate the effects of varying levels of AV market penetration in the Wasatch Front region on VMT. 2. To estimate the effects of reduced travel time burden (referred to a Value of Travel Time, VOTT) on VMT.

	<ol style="list-style-type: none"> 3. To estimate the effects of increased capacity from AV technology such as platooning. 4. Informed by addressing Objectives 1 - 3, above, to develop future (2040) VMT estimates. 5. To provide a knowledge foundation from which the issue of “zero-occupant vehicles” can be systematically investigated. <p>This research focuses on studying the impacts of AV penetration into the Utah vehicle fleet. Specifically, three aspects of such effects will be examined:</p> <ol style="list-style-type: none"> 1. Its impact on travel demand from currently mobility-challenged markets – youth and the elderly; 2. Its impact on travel demand due to the reduced disutility of travel time; 1. The potential impact on capacity from AV technologies enabling vehicle platooning.
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	