TRC TRANSPORTATION RESEARCH COMMITTEE
ArDOT

RESEARCH PROBLEM STATEMENT

DATE:	09/05/2019	PROJECT AREA:	Planning

TITLE: Forecasting Travel Demand for Autonomous Vehicles (AVs) and Shared Mobility Services in Arkansas

PROBLEM STATEMENT:

Emerging technologies and shared mobility services are quickly changing travel demands and patterns. But policymakers face great uncertainty in deciding how to harness positive and mitigate negative impacts through carefully crafted policies and investments. The AR Statewide Long-Range Intermodal Transportation Plan (LRITP) developed around personal vehicles does not account for new mobility options (ridesharing, carsharing, and the eventual proliferation of AV) for which adoption has the potential to increase driving. ARDOT's travel demand modeling tools do not comprehensively assess the likely long-term effects of AVs and shared mobility services and, as a result, it is difficult to identify and prioritize policies and investment surrounding these new technologies. The purpose of this project is to investigate long-term travel changes in response to the adoption of AVs and shared mobility services, with an emphasis on rural mobility, and to develop tools to help ARDOT better understand the effectiveness of various policy scenarios. The findings of this project will also help ARDOT identify performance measures that align with new mobility services for use in the Statewide LRITP.

OBJECTIVES:

The objectives of this project are to: 1) Identify factors driving adoption of AVs and shared mobility services (including carsharing, ridehailing and bikesharing) in Arkansas, 2) Characterize the use of mobility services in Arkansas by population demographics and regions, 3) Quantify the impacts of AVs and new mobility services on other components of travel behavior, such as the amount of individual driving, the use of public transit and walking/bicycling. The tasks include: a) design of a revealed and stated preference survey instrument, b) carry out the survey, c) estimation of statistical models to analyze adoption behavior, d) update the current AR Statewide Travel Demand Model to incorporate new mobility options.

FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:

This project will update the AR Statewide Travel Demand Model (ARSTDM) so that it considers new mobility services within the mode choice analysis. This will allow ARDOT to create and run "what-if" scenarios that consider the impacts of AVs, ridesharing, carsharing, and new mobility options. It will also inform ARDOT on policy and infrastructure investment decisions required, such as what needs to be built or what investments need to be made to accommodate these new mobility options. The research team will also work with the ARDOT Planning Division to integrate the findings into the Statewide Long-Range Intermodal Transportation Plan and other key planning documents.

Estimated Project Duration: 24 **Months**

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Standing Subcommittee Ranking	Advisory Council Ranking	Statement Combined with Statement Number(s)
7/7	N/A	