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Examining Data Needs and Implementation Process of AV-Based Microtransit Service: A Case Study in Lake Nona

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Current Situation

Autonomous vehicles (AV) were once viewed as an invention of the future—but they could now be coming to a neighborhood near you in the present. In recent years, that AV breakthrough has spurred the advancement of microtransit – on-demand, app-based transit services that can come right to your door.



Is the supporting infrastructure ready to accommodate AV transit? Here is an example of a street suitable for AV shuttles according to the AV-Based Microtransit Projects Effectiveness Evaluation Framework (AVEE Framework).

The concept is still relatively new. It had yet to be studied through the deployment of a real-world AV-based microtransit service.

Research Objectives

The objectives of this project were to 1) examine the AV-based microtransit service in the Lake Nona neighborhood of Orlando, Florida called Move Nona and 2) develop a framework for examining various aspects of the system, including policy and government support, infrastructure and technology, service and management, financial sustainability, and ridership and community impact.

The framework would help vendors select feasible AV investments and enable decision makers to learn about and compare AV projects' performances during and after implementation.

Project Activities

Following a summary of all operating AV-based microtransit services in Europe, North America, Asia, and Australia, the University of Florida research team conducted a literature review of tools for evaluating AV systems' impacts or readiness. Out of the research, the team developed the AV-based Microtransit Projects Effectiveness Evaluation Framework (AVEE Framework).

Next, the team conducted a site and demographic analysis, two field reviews, and a community survey in the Lake Nona area, then applied the AVEE Framework to the Move Nona shuttle program as a demonstration. The results were expressed through a scoring system to determine if an AV project had good performance or favorable influence.

Project Conclusions and Benefits

FDOT now has a holistic, user-friendly instrument/framework for quantifying the political, economic, technical, and social impacts of AV programs, and is better informed about the physical and technological infrastructure needs that may be required to implement a long-term AV-based microtransit public transportation system.

For more information, please see fdot.gov/research.