



Connected and automated vehicles

Autonomous vehicle shuttles

As autonomous vehicle (AV) technologies continue to advance, state and local jurisdictions and private institutions are exploring opportunities to pilot the latest innovations and effectively integrate them into their transportation service offerings. A prominent example that is available today is fixed route service using low-speed AV shuttles. These shuttles are shared, driverless vehicles with a capacity of approximately 10 to 15 passengers, capable of operating autonomously on a pre-defined repeatable route. AV shuttles can provide first/last mile transit service, run as a campus circulator at a university or office park, or supplement or replace existing service offerings.

WSP USA supports the public and private sectors in AV shuttle implementation by addressing the following considerations:

- How can AV shuttles be introduced in a particular environment in order to respond to local needs and constraints?
- How should we balance the benefits of piloting an emerging technology with the inherent risks?
- What are the current capabilities of these vehicles?
- Are desired features realistic?

Our services

Our experts leverage existing relationships nationwide in order to:

- Support the development of a pilot program
- Help address and respond to funding opportunities
- Serve as an owner's representative for an agency interested in AV shuttles
- Guide transit agencies and other transportation providers on best practices using lessons learned from previous experiences
- Act as a liaison between a contract operator and vehicle supplier
- Develop capital and operating plans and budgets, including advice on leasing and purchase agreements
- Lead planning tasks such as route development, staffing requirements and fare policies
- Enhance connected vehicle and infrastructure design to support a connected AV shuttle
- Deliver design and construction services for charging and storage facilities
- Perform systems engineering tasks to establish the framework for a system
- Provide guidance on the current regulatory context and anticipated updates
- Conduct service monitoring, including fostering a transition from the pilot phase to full implementation



Our experience

JACKSONVILLE TRANSPORTATION AUTHORITY ULTIMATE URBAN CIRCULATOR

WSP is part of the owner's engineer consulting team for the Jacksonville Transportation Authority in Florida, in support of its Ultimate Urban Circulator transforming existing skyway service to a more modular approach utilizing AV shuttles. Our team has provided next-generation project visualization services and produced an animated video with future concepts. We have also supported strategic planning, policy and financing efforts, and are bringing national expertise in technical issues specific to AVs for the project.

AV PILOT DEPLOYMENT SUPPORT FOR A CONFIDENTIAL CLIENT

WSP is supporting the development of an AV pilot deployment for a confidential Fortune 50 client as part of a major development initiative. In this role, we have developed scoping materials for the pilot, investigated AV shuttle companies, assisted in crafting requests for information, evaluated alternatives and developed performance measures. Our continued role is anticipated to include support of the pilot deployment itself and evaluation of the pilot against anticipated outcomes.

SMART COLUMBUS CONNECTED ELECTRIC AV PROJECT

After supporting the city of Columbus, Ohio's successful bid for the U.S. Department of Transportation's Smart City Challenge, we are now leading the systems engineering and design activities for the deployment of a transit service using AV shuttles. These shuttles are intended to operate on public roadways in a commercial area at a high frequency to address first/last mile challenges. It is expected that ambassadors will be available onboard and/or at stop locations during initial operations to monitor the vehicles and explain the technology to passengers.

This project will benefit the surrounding community by:

- Decreasing travel time and increasing travel time reliability by transit to job centers in the area by enabling easy transfers between traditional transit buses and AV shuttles.
- Encouraging visitors who access the area by personal vehicle to park just once and use the AV shuttles to travel within the area, rather than moving their personal vehicles, therefore alleviating congestion, increasing mobility and enhancing visitor satisfaction.
- Demonstrating the potential of this emerging technology to local stakeholders and the public, allowing for quicker adoption of future innovations.

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