TASK FORCE ON AUTONOMOUS VEHICLES

Framing the Future for Autonomous Vehicles in Oregon

MEMORANDUM

To: Task Force on Autonomous Vehicles, Subcommittee on Public Transit
From: ODOT Staff/TriMet
Date: August 7, 2019
Re: Samples of Public Transit and Autonomous Vehicle Partnerships

DRAFT

Introduction

This memo highlights select sample initiatives underway through partnerships between local jurisdictions, transit agencies and autonomous vehicle manufacturers to prepare for automated vehicle technology integration with public transit. The samples below provide an overview of some pilots and work in this field, but are not intended to be comprehensive.

Sample Partnerships

Utah Department of Transportation and Utah Transit Authority

The Utah Department of Transportation and Utah Transit Authority started a year-long pilot of autonomous shuttle technology in April of 2019. The shuttle, provided by EasyMile, operates on several fixed routes throughout Utah. The purpose of the pilot is to identify opportunities for the application of autonomous vehicle technology and to educate the public about autonomous vehicles. More information about the Utah Autonomous Shuttle Pilot can be found here: http://www.avshuttleutah.com/

Contra Costa Transportation Authority (CCTA) and GoMentum Station

The Contra Costa Transportation Authority (CCTA) and GoMentum Station are testing an autonomous shuttle at Bishop Ranch, the largest mixed-use business community in Northern California, located in the city of San Ramon. This marks the first time the California Department of Motor Vehicles (DMV) has allowed a shared autonomous vehicle to travel on public roads in the state. After successful testing at the GoMentum Station autonomous vehicle proving grounds in Concord, California and in parking lots at Bishop Ranch, CCTA is advancing to the third phase of testing. The vehicles are currently staffed by trained testers. It is anticipated that additional predetermined testers and evaluators chosen from employees of various employers within Bishop Ranch will be able to ride the vehicles as they traverse public streets within the business park. More information about this test can be found here: https://ccta.net/2018/10/16/first-autonomous-shuttle-test-on-public-roads-in-ca/

Livermore Amador Valley Transit Authority (LAVTA) Shared Autonomous Vehicle (SAV)

The Livermore Amador Valley Transit Authority (LAVTA), operators of the popular Wheels and Rapid bus services and the Go Dublin partnership with transportation network companies, is exploring an innovative shared autonomous vehicle demonstration project within the City of Dublin in collaboration with the City of Dublin, Contra Costa County Transportation Authority, First Transit and the GoMentum Station in Concord, California. One project site is the East Dublin/Pleasanton BART station. LAVTA's goals for the shared autonomous vehicle demonstration project include: Creating a mode shift from single occupant vehicles to transit to decrease congestion and improve the environment; Improving trip reliability and safety; Increasing transit jobs by increasing transit ridership and demand; and: Increasing farebox recovery for transit operations. More information can be found here: https://www.wheelsbus.com/sav/ and here: https://www.wheelsbus.com/wp-content/uploads/2017/08/SAV-Brochure_Web.pdf

Houston METRO and Texas Southern University

Houston METRO has partnered with Texas Southern University for a pilot program in which an autonomous shuttle will operate on a 1-mile, closed-loop route along TSU's Tiger Walk. To ensure customer safety, an attendant will be on board the shuttle during this pilot program but will not actually be operating it. The all-electric vehicle seats six people, with standing room for six others and operates on weekdays only. A 2017 statute approved the operation of autonomous vehicles on Texas roads. More information can be found here: https://www.ridemetro.org/Pages/Autonomous-Vehicles.aspx

Denver Regional Transportation District (RTD) 61AV Pilot

After a six month pilot, Denver RTD concluded service of their self driving shuttle that connected passengers from the 61st and Peña commuter rail station to the Panasonic and EasyMile offices. The 61AV aimed to evaluate the use of an autonomous vehicle to offer first- and last-mile connections. RTD collaborated with the city and county of Denver, EasyMile, which supplied the vehicle, Panasonic, Transdev and L.C. Fulenwider, Inc. RTD explained that in addition to testing AV technology in a transit environment, the pilot program provided the partners with the ability to learn how such vehicles can be used in a variety of community settings. RTD staff will present the results of the pilot program to the RTD Board of Directors with the intent of exploring other opportunities to test self-driving shuttles as an option for moving RTD passengers. More at: https://www.masstransitmag.com/alt-mobility/shared-mobility/bicycle-scooter-sharing/press-release/21091581/regional-transportation-district-rtd-denver-rtd-wraps-up-61av-autonomous-pilot

Phoenix Valley Metro and Waymo

Valley Metro, which operates regional transit services in Phoenix, Arizona, has partnered with Waymo to pilot the use of automated vehicles for first and last mile trips to public transit stops. The pilot began in August 2018 and has been limited to Valley Metro employees. It gave approximately 1000 rides to 30-40 individuals between August 2018 and April 2019. The second phase of the pilot will expand to serve customers of Valley Metro's RideChoice program, an on-demand taxi service offering discounted rates for seniors or people with disabilities. Valley Metro contributed $200,000 dollars to cover costs associated with the pilot. The pilot is currently set to last until July 2020. More information about this pilot can be found here: https://www.valleymetro.org/future

Columbus Smart Circuit Automated Shuttle Pilot

A low-speed, automated shuttle is operating in downtown Columbus, Ohio on a pilot basis until fall 2019. The shuttle carries up to six passengers at a time and operates on a 1.5 mile loop with a handful of stops at popular tourist destinations. A fleet attendant is on board the vehicle. The pilot had served 9000+ riders as of April 30, 2019. It is planned to expand to serve a 2.7 mile residential route later this year. This pilot was sponsored by a partnership among City of Columbus, Ohio Department of Transportation, Ohio State University, and automated shuttle manufacturer May Mobility. More information about the Smart Circuit pilot can be found here: https://smartcircuitcbus.com/

Mercedes-Benz Future Bus

The semi-automated city bus uses CityPilot to operate even more safely, efficiently and comfortably than conventional buses. Connectivity plus camera and radar systems with data fusion are catapulting the city bus into the future. The CityPilot is able to recognize traffic lights, communicate with them and safely negotiate junctions controlled by them. It can also recognize obstacles, especially pedestrians on the road, and brake autonomously. It approaches bus stops automatically, where it opens and closes its doors. It is also able to drive through tunnels. More information about this project can be found here: https://www.daimler.com/innovation/autonomous-driving/future-bus.html

Seimens Mobility Autonomous Tram

Siemens Mobility, together with ViP Verkehrsbetrieb Potsdam GmbH, presented a research project on the world's first autonomous tram at InnoTrans 2018, with a demonstration running in real traffic along a six kilometer section of the tram network in Pottsdam, Germany. The experimental tram being used to demonstrate autonomous driving at the world premiere is not designed for commercial use. The current project aims at identifying the technological challenges of autonomous driving under real-life conditions, then developing and testing solutions for them. More on this project can be found here: https://press.siemens.com/global/en/pressrelease/siemens-mobility-presents-worlds-first-autonomous-tram?content[]=MO