

To: Board of Directors

Date: 11/03/17

From: Rashidi Barnes
Dir. Of Shared Mobility and Innovation

Reviewed by:

SUBJECT: Shared Autonomous Vehicle Project Agreement Between County Connection and Livermore Amador Valley Transportation Authority

Background

AB 1444, introduced by Assembly Member Baker, allows Livermore Amador Valley Transit (LAVTA) to demonstrate a shared autonomous vehicle (SAV) on public roads for testing purposes. This bill authorizes LAVTA to test a SAV that does not have a driver seated in the driver's seat and is not equipped with a steering wheel, a brake pedal, or an accelerator. This bill would make these provisions inoperative on May 1, 2018, and would repeal it as of January 1, 2019. The goal of this project is to demonstrate SAV's function as a reliable feeder service to frequent public transit options like BART. Project publications have been included in your board packet for detailed information.

Interagency Agreement

This agreement is intended to facilitate a symbiotic development and evaluation program that will meet the public transportation needs of CCCTA and LAVTA's service population through the demonstration of a SAV in Dublin. Furthermore, it underscores each party's willingness to work together with the underlying goal of increasing the areas public transportation options through innovation, reducing congestion along the I-680 corridor and increase interagency connectivity to support a seamless transportation ecosystem.

Partnership Roles

LAVTA has secured a grant from the Bay Area Air Quality Management District (BAAQMD) to develop, evaluate and deploy SAV technology for FM/LM connections to major transit nodes that will help reduce greenhouse gas emissions. Project management of the program will be provided by Rashidi Barnes, Director of Innovation and Shared Mobility, CCCTA, as an in-kind donation to the project. All insurance requirements will be met by a third party contractor, who will also operate and maintain the SAV during the demonstration period.

A joint committee comprised of both LAVTA and CCCTA governing bodies will be created to oversee and provide direction on the SAV project as well as other transportation related issues that impact the region. The project manager for the Dublin SAV program will periodically provide project updates to this committee as the project moves forward.

Assembly Bill No. 1444

CHAPTER 719

An act to add and repeal Section 38756 of the Vehicle Code, relating to autonomous vehicles.

[Approved by Governor October 12, 2017. Filed with
Secretary of State October 12, 2017.]

LEGISLATIVE COUNSEL'S DIGEST

AB 1444, Baker. Livermore Amador Valley Transit Authority: demonstration project.

Existing law permits the operation of an autonomous vehicle on public roads for testing purposes if, among other requirements, a driver is seated in the driver's seat and is capable of taking immediate manual control of the vehicle in the event of an autonomous technology failure or other emergency.

Existing law, notwithstanding the above provision, until 180 days after the operative date of regulations promulgated by the Department of Motor Vehicles to allow testing of autonomous vehicles without a driver in the vehicle, authorizes the Contra Costa Transportation Authority to conduct a pilot project for the testing of autonomous vehicles that do not have a driver seated in the driver's seat and are not equipped with a steering wheel, a brake pedal, or an accelerator if the testing is conducted only at specified locations and the autonomous vehicle operates at speeds of less than 35 miles per hour. Existing law requires the authority or a private entity, or a combination of the 2, to obtain an instrument of insurance, surety bond, or proof of self-insurance in an amount of \$5,000,000 prior to the start of testing of any autonomous vehicle on or across a public road and would require evidence of the insurance, surety bond, or proof of self-insurance to be provided to the Department of Motor Vehicles in the form and manner required by the department. Existing law requires the authority or a private entity, or a combination of the 2, to provide the department with a detailed description of the testing program, as specified. Existing law requires the operator of the autonomous vehicle technology to disclose what personal information concerning a pilot project participant is collected by an autonomous vehicle. Existing law authorizes the department to require data collection for evaluating the safety of the vehicles, as provided.

This bill would authorize the Livermore Amador Valley Transit Authority, in accordance with substantially similar conditions, to conduct a shared autonomous vehicle demonstration project for the testing of autonomous vehicles that do not have a driver seated in the driver's seat and are not equipped with a steering wheel, a brake pedal, or an accelerator, as specified. The bill would prohibit the authority from conducting the demonstration

project if the department has adopted specified regulations by December 31, 2017.

This bill would make these provisions inoperative on May 1, 2018, and would repeal them as of January 1, 2019.

The people of the State of California do enact as follows:

SECTION 1. Section 38756 is added to the Vehicle Code, to read:

38756. (a) Notwithstanding Section 38750, the Livermore Amador Valley Transit Authority is authorized to conduct a shared autonomous vehicle (SAV) demonstration project for the testing of autonomous vehicles that do not have a driver seated in the driver's seat and are not equipped with a steering wheel, a brake pedal, or an accelerator, provided the following requirements are met:

(1) The testing shall be conducted only within the City of Dublin and the vehicles may traverse public roads within the area of the demonstration project.

(2) The autonomous vehicle shall operate at speeds of less than 35 miles per hour.

(b) Prior to the start of the testing of an autonomous vehicle that does not have a driver seated in the driver's seat on or across a public road, the Livermore Amador Valley Transit Authority or a private entity, or a combination of the two, shall do both of the following:

(1) Obtain an instrument of insurance, surety bond, or proof of self-insurance in an amount of five million dollars (\$5,000,000), and shall provide evidence of the insurance, surety bond, or proof of self-insurance to the Department of Motor Vehicles in the form and manner required by the department.

(2) Submit a detailed description of the testing program to the department. The detailed description shall include all of the following:

(A) Certification that, prior to testing on public roads, the autonomous vehicle has been tested under controlled conditions that simulate, as closely as practicable, the real-world conditions that the autonomous vehicle will be subject to during this demonstration project, and that the Livermore Amador Valley Transit Authority or a private entity, or a combination of the two, has made a reasonable determination that it is safe to operate the autonomous vehicle on public roads under these conditions.

(B) Evidence satisfactory to the department that the local authorities with jurisdiction over the public roads in the designated area approve of the geographic area and environmental, traffic, and speed conditions authorized for purposes of this demonstration project.

(C) Certification that the autonomous vehicle can only operate in autonomous mode in the geographic area and environmental, traffic, and speed conditions authorized in this specific demonstration project.

(D) Certification that this demonstration project complies, or will comply, with National Highway Traffic Safety Administration guidance, if any, on the safe testing, deployment, and operation of autonomous vehicles.

(E) Certification that the autonomous vehicle used in the demonstration project complies with all applicable federal Motor Vehicle Safety Standards, or written evidence that the National Highway Traffic Safety Administration either considers the absence of a steering wheel, a brake pedal, or an accelerator permissible under federal Motor Vehicle Safety Standards or has granted the autonomous vehicle an exemption from compliance with the relevant federal Motor Vehicle Safety Standards.

(F) Identify to the department the autonomous vehicles that are to be tested on public roads during this demonstration project. For each vehicle, the manufacturer shall provide to the department the make, model, and model year of the vehicle, the full vehicle identification number, and the license plate number and the state of issuance.

(G) Certification that the vehicle is equipped with a communication link between the vehicle and a remote operator to provide information on the vehicle's location and status and to allow two-way communication between the remote operator and any passengers if the vehicle experiences any failures that would endanger the safety of the vehicle's passengers or other road users while operating without a driver.

(H) Certification that the autonomous vehicle is designed to detect and respond to roadway conditions in compliance with all provisions of this code and local regulations applicable to the operation of motor vehicles.

(I) A copy of a law enforcement interaction plan, which includes information that the Livermore Amador Valley Transit Authority or a private entity, or a combination of the two, will provide to the law enforcement agencies whose jurisdiction covers the designated area to instruct those agencies on how to interact with the vehicle in emergency and traffic enforcement situations.

(c) The operator of the autonomous vehicle technology tested pursuant to this section shall disclose to an individual who participates in the demonstration project what personal information, if any, concerning the demonstration project participant is collected by an autonomous vehicle.

(d) For the testing of autonomous vehicles within the designated area, the department may require data collection for evaluating the safety of the vehicles, including, but not limited to, both of the following:

(1) A report to the department of any accident originating from the operation of the autonomous vehicle on a public road that resulted in the damage of property or in bodily injury or death. Accidents shall be reported within 10 days in the form and manner specified by the department pursuant to the regulations adopted by the department under Section 38750.

(2) The submission to the department of an annual report in the form and manner specified by the department pursuant to the regulations adopted under Section 38750 summarizing information on unplanned technology disengagements that occurred while the autonomous vehicle was being tested on public roads. "Disengagement" means a deactivation of the

autonomous mode when a failure of the autonomous technology is detected or when the safe operation of the vehicle required disengagement from the autonomous mode.

(e) This section does not limit the authority of the department to promulgate regulations governing the testing and operation of autonomous vehicles on public roads, with or without the presence of a driver inside the vehicle, pursuant to Section 38750.

(f) It is the intent of the Legislature, in enacting the act that added this section, to address the specific circumstances of the demonstration project proposed by the Livermore Amador Valley Transit Authority. Pursuant to Section 38750, the Department of Motor Vehicles is developing regulations for the testing and operation of autonomous vehicles, and it is not the intent of the Legislature to influence the content of those statewide regulations through the enactment of this section, which is only intended to govern the establishment of one local demonstration project.

(g) The demonstration project authorized by this section shall not be conducted if the department has adopted regulations pursuant to Section 38750 by December 31, 2017, through the proceedings initiated by the department on March 10, 2017, and published in the California Regulatory Notice Register as Notice File No. Z2017-0227-02.

(h) The Livermore Amador Valley Transit Authority shall comply with regulations promulgated by the department to allow testing of autonomous vehicles without a driver in the vehicle.

(i) This section shall become inoperative on May 1, 2018, and, as of January 1, 2019, is repealed.

CCCTA and LAVTA agree that the SAV is to first be deployed in Dublin as previously planned by LAVTA and required by AB 1444. Future deployment of SAV's will focus the FM/LM commuting challenges of the I-680 Transportation Corridor.

Recommendation

None at this time.

Attachments:

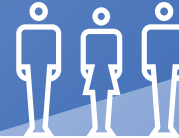
1. AB 1444 (Baker)
2. LAVTA project publication

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Why SAVs are Important to Public Transportation and the Economy



Advances in shared autonomous vehicle (SAV) technology are moving forward at a rapid pace. With an ability to operate much more efficiently, the electric SAV will “unleash” the full potential of major transit investments, now and into the future, with near-future SAVs functioning as a reliable feeder service for frequent and convenient public transportation, such as the BART system and the Livermore Amador Valley Transit Authority’s (LAVTA) bus rapid transit networks. The result will be less congestion and pollution, greater safety on roadways, and a leap in the quality of life for residents.

Vision and Goals of LAVTA’s SAV Project

LAVTA has initiated an SAV project in the City of Dublin that will build upon and reap synergies from the nearby Bishop Ranch autonomous vehicle project. LAVTA’s partners in this project include:

- The **Bay Area Rapid Transit** District (BART)
- The **Bay Area Air Quality Management District**
- The **Contra Costa Transportation Authority**
- The **City of Dublin**
- The **GoMentum** autonomous vehicle testing facility in Concord, California
- SAV distributor **EasyMile**

Specifically, the vision of the project is to test, and later place into service, SAVs on public roads near the Dublin/Pleasanton BART station. The objective is to place SAVs into service to transport residents who live beyond convenient walking distance from the BART stations and LAVTA’s bus rapid transit system. These residents would forgo the hassle of driving a short distance and finding parking for their single occupant vehicle at the station if an attractive alternative was available.

GOALS

Increase BART and LAVTA Bus Rapid Transit ridership

Create transit jobs

Shift single occupant vehicle trips to transit trips, reducing emissions

Increase farebox recovery for transit operations

Improve trip reliability, safety and the environment

In the future it is envisioned that through a collaborative effort, Contra Costa County and Eastern Alameda County will deploy more than 175 SAVs to provide an additional 3.8 million rides per year in public transportation, while adding more than 166 new transit jobs into the industry, and realizing a 90% improvement in safety.

Why AB 1444 is Important to California

LAVTA is working diligently with our strategic partners to begin the testing of two SAVs on city streets in Dublin during the first three months of 2018. The project is high priority and delays could be costly to the agency and the industry in California.

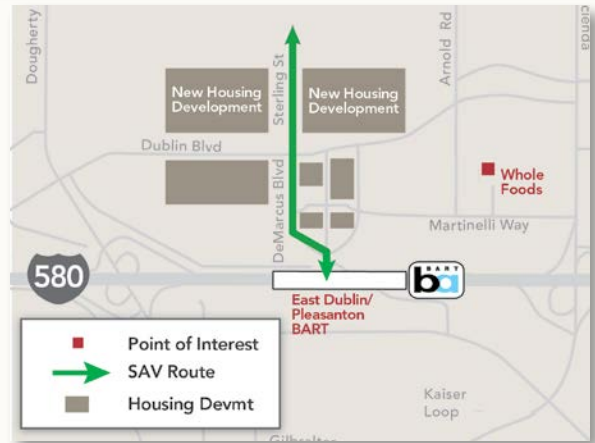
AB 1444 (Baker) will authorize LAVTA to conduct a pilot project for the testing of SAVs on public streets in the City of Dublin through April of 2018, ensuring that the SAV project can continue should the California Department of Motor Vehicles be delayed in issuing its regulations on autonomous

vehicles. Additionally, the bill would ensure that SAVs being tested would meet specific safety and insurance guidelines. Those include a maximum speed limit of 35 miles per hour, proof of insurance in the amount of \$5,000,000, and submitting a detailed description of the testing program to the department.

In conclusion, AB 1444 (Baker) is needed to continue the momentum of forward thinking projects already underway, to encourage technological innovation in the field of public transit and to create jobs for California residents.



Bishop Ranch SAV test site 2017



Dublin SAV test route being considered

EasyMile's Shared Autonomous Vehicle

The SAV to be used in this project weighs about 3,500 pounds, has space for 12 riders, and operates generally at 20 miles per hour. The low operating speed allows for adequate response time to avoid potential hazards in the roadway. The vehicles, which are 12 feet long by 7 feet wide, can operate without tracks, enabling transit systems to avoid significant capital costs and the need for major infrastructure investment.

The SAVs are operated on batteries and are zero emission vehicles. They carry a full array of cameras and are equipped to accept online prepayment of fares, as well as smart card and smartphone payment technologies.

The SAV vehicles involved in the LAVTA project will always carry operators onboard to take control of the vehicle in the event of operational issues.

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