

**S T A F F   R E P O R T**

**SUBJECT:** Shared Autonomous Vehicle Project Update: Survey and Request for Information Results

**FROM:** Christy Wegener, Executive Director  
Nathan Barreras, Manager, Capital Projects

**DATE:** October 23, 2023

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**Action Requested**

Staff will present an update of the Shared Autonomous Vehicle (SAV) project and receive Committee direction. No action is requested at this time.

**Background**

In February 2023, staff presented the Projects and Services Committee with an update on the SAV project, including an overview of current opportunities and challenges associated with moving the project forward into full Phase 2 operations, which would require a full funding plan for both capital and operating needs. A copy of that staff report summarizing the project history and background since its inception in 2017 is included as Attachment 1. Prior funding for work on the project to date has been provided from regional funding partners including the Bay Area Air Quality Management District (BAAQMD) and the Metropolitan Transportation Commission (MTC) through grants from both the Innovative Deployments to Enhance Arterials (IDEA) program co-sponsored with the City of Dublin, as well as Regional Measure 2 (RM2) capital funds.

At the time, Committee members expressed an interest in advancing the project and exploring all options to secure operating funding, among other suggestions and questions for staff's consideration. Staff has since been reevaluating the use case for the SAV Phase 2 project, including reassessing ridership demand, operational costs, operating models, funding options, as well as better understanding the state of SAV availability in the U.S.

**Discussion**

To reassess demand and cost in a post-pandemic reality, the project team surveyed the local businesses at the terminus of the proposed SAV route to determine whether there was significant enough potential ridership to warrant operating the service. The survey included questions about commuting patterns, in-office requirements, and home zip code. 188 surveys were completed fully and were collected.

Survey data indicated that the majority of respondents have a hybrid in-office schedule, with the vast majority (~75%) working from home on Monday and Friday, and commuting to the office park mostly on Tuesday, Wednesday, w/ a drop-off on Thursdays. Survey data indicated that the

majority of survey respondents (~70%) lived in Alameda County. In terms of current commute, while driving alone was the most-cited way to get to/from work, just over 10% reported using BART/ public transit. The SAV Project as a concept received favorable scores when respondents were asked if they would use BART more if there was an SAV connector.

An additional survey was conducted among the residents at Dublin Crossing, which is a residential development of a mix of densities adjacent to the SAV Phase 2 route. It was discovered that most residents commute 3 days a week to work distributed throughout Alameda County/San Francisco. Another discovery determined most residents commute to work via driving alone and 22% of residents utilize BART. The residential survey captured 119 completed responses.

Given there was support for the SAV route, the project team wanted to better understand the state of the SAV marketplace; particularly, is there an all-electric, level 4 SAV that can operate at least 25 mph on public roads in mixed-flow traffic that can be purchased in the United States. To better understand the marketplace, the project team drafted a Request for Information (RFI) that was issued in early September. The RFI was sent to 20 SAV vendors, manufacturers and technology partners to determine if current technology could meet the requirements for LAVTA's Phase 2 SAV project. LAVTA received a single response to the RFI before the deadline, and the parameters could not be met by the sole vendor.

Based on the best information currently available and the prior direction of this Committee, staff has identified two potential paths forward with the project for Committee consideration. One option is to continue to advance the design phase of the SAV Phase 2 project and wait to expend the remaining RM2 money until there is a commercially available SAV in the United States that meets LAVTA's SAV Phase 2 requirements. A significant risk to consider with this approach is that MTC will require a fully funded and committed operating plan as a condition of allocating the RM2 funds for construction and vehicle acquisition, and there is no guarantee a significant delay of uncertain duration for vehicle procurement would be acceptable under the terms of their existing allocation guidance. Another option is to explore alternatives with MTC and other stakeholders for reprogramming the remaining RM2 funds to a different eligible capital project and close out existing grants with updated deliverables that could be useful to our funding partners.

Staff intends to return to the Committee in November with a recommendation for the future of the SAV project.

### **Fiscal Impact**

There is no fiscal impact associated with this informational update.

### **Recommendation**

Staff recommend the Projects and Services Committee hear the item and provide feedback to staff.

Attachments:

1. February 2023 SAV Project Update Staff Report

## LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

## STAFF REPORT

SUBJECT: Shared Autonomous Vehicle Project Update

FROM: Christy Wegener, Executive Director  
Nathan Barreras, Manager of Capital Projects

DATE: February 27, 2023

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### Action Requested

Staff will present an update of the Shared Autonomous Vehicle (SAV) project and receive Committee direction. No action is requested at this time.

### Background

In 2017, LAVTA initiated the SAV project with the goal of testing a new technology for first/last mile connections from Dublin to the East Pleasanton/Dublin BART Station in order to grow ridership, reduce BART parking demand, and improve safety.

#### Phase 1

After several years of administrative, planning, engineering and coordination work from a team of project partners, Phase 1 of testing/demonstration and deployment began in June 2020 in the vicinity of the East Dublin/Pleasanton BART Station. During the Phase 1 testing of various aspects of SAV operations and safety, evaluations were conducted and SAV operated autonomously on a very short route for over 400 miles accident-free over several months. With respect to COVID-19 precautions, limited reservations opened in November 2020 for the public to book transportation on the SAV route, allowing up to three passengers per trip. In total, approximately 150-200 trips were taken on the SAV in Phase 1.

#### Phase 2

As Phase 1 was underway, staff developed a concept for Phase 2 of SAV testing that would build on the lessons learned from Phase 1 and expand testing with a vehicle that could travel higher speeds in mixed traffic. Phase 2 focus expanded the testing/demonstration and service deployment area to include business centers and residential communities near the East Dublin/Pleasanton BART Station, including traveling along and/or crossing Dublin Boulevard in Dublin. Phase 2 envisioned SAV passenger service on weekdays, to and from a central business park (Zeiss) and the East Dublin/Pleasanton BART Station.

To support the Phase 2 work, LAVTA, in partnership with the City of Dublin and Alameda County Transportation Commission (Alameda CTC) received several grants. The Metropolitan Transportation Commission (MTC) awarded an IDEA grant to the City of Dublin in 2021 to complete the systems engineering and the concept of operations for the Phase 2 SAV route. In 2021, an additional \$2.7M was allocated to Phase 2 through MTC via a Regional Measure 2

(RM2) grant with Alameda CTC as the project sponsor. The RM2 monies were scoped for the design of a multi-modal mobility hub at the eastern terminus of the Phase 2 route, to procure three SAV vehicles for passenger service, and to procure/install SAV communications equipment at traffic signals on the route. The RM2 project description also includes a vision of the overall SAV project, including construction of the mobility hub and a commitment to SAV passenger service as the final milestone of the project (Attachment 1). The mobility hub design work (\$150k) is underway and is expected to be complete by the end of 2023; however, the remaining grant funds (\$2.5M) won't be approved until LAVTA has identified an operational funding plan. It is estimated that the cost to maintain and operate the SAV service will be up to \$1.2 million on a yearly basis depending on the approach of turnkey or ownership of the SAV vehicles, as well as the level of service.

### **Discussion**

In order to proceed with the full SAV Phase 2 plan, up to \$1.2 million in operating costs per year needs to be identified. LAVTA is working with the City of Dublin staff, who has indicated that the City has implemented Transportation Demand Management (TDM) requirements on several large businesses to reduce vehicle trips as part of their business development entitlements. With the support of the City of Dublin, LAVTA may pursue feasibility of accessing some of this private funding for SAV operations.

Other funding sources may include Transportation for Clean Air (TFCA) monies and Alameda CTC's Measure BB funds from Technology, Innovation and Development Program. Staff will pursue all available funding options, but if new operating funds cannot be identified by the end of 2023, staff may recommend reallocating the remaining RM2 monies to another eligible project in the 580 corridor.

If funding is secured for operations, LAVTA may procure a turnkey solution via RFP to allow risk and liability to shift over to a 3<sup>rd</sup> party vendor. Costs for a turnkey solution can be estimated at approximately \$300,000 yearly for a base level of service, up to \$1.2M for the full SAV service vision. The cost of procuring SAVs will depend on the specifications and vehicle requirements. Leasing vehicles may also be an option.

Staff intends to return to the Board with an update in summer 2023.

### **Fiscal Impact**

There is no fiscal impact associated with this informational update

### **Recommendation**

Staff recommends the Committee hear the item and provide feedback to staff.

Attachments:

1. RM2 SAV Project Description

## Metropolitan Transportation Commission Programming and Allocations Committee

October 13, 2021

Agenda Item 2d - 21-1146

### MTC Resolution No. 3664, Revised

**Subject:** Regional Measure 2 (RM2) Project 32: Allocation of \$150,000 in RM2 funds to the Livermore Amador Valley Transit Authority (LAVTA) for the Shared Autonomous Vehicle Project.

**Background:**

**RM2 Project 32 History**

The \$65 million I-580 Tri-Valley Rapid Corridor Improvements project, identified as capital project number 32 under RM2, currently consists of four subprojects for which MTC has already allocated funds:

1. Project 32.1, **Eastbound I-580 Improvements** (eastbound HOV lane, allocated \$36 million in RM2 funds),
2. Project 32.2, **I-580/I-680 Interchange Modifications and Westbound I-580 Improvements** (HOV connectors between I-580 and I-680, and an I-580 westbound HOV lane, allocated \$17 million in RM2 funds); and
3. Project 32.3, the **Dublin Transit Center Parking Garage project**, (allocated \$7 million in RM2 funds).
4. Project 32.4, the **LAVTA Rapid Bus Stop Improvement Project** (programmed \$2.3 million in RM2 funds for improvements at rapid bus stops serving BART)

Approximately \$2.7 million in RM2 funds remains unprogrammed in Project 32. The Alameda County Transportation Commission (Alameda CTC) is the project sponsor.

**LAVTA SAV Project Proposal**

This item proposes to add a fifth subproject, 32.5, for the LAVTA Shared Autonomous Vehicle (SAV) Project, and allocate \$150,000 in RM2 funds to LAVTA for the design phase of the project. A second RM2 allocation of the remaining \$2.5 million for the construction phase would likely be recommended for Commission consideration next year.

LAVTA proposes to implement a fixed-route SAV service between Dublin/Pleasanton BART Station and the Zeiss Innovation center and Ross Headquarters business park, one mile from the BART station. Employment at the recently expanded business park is expected to be approximately 3,000. LAVTA has successfully road-tested a version of the SAV service in the area. Phase 2 of the project, proposed to be funded by RM2, includes procurement of three new SAVs, local infrastructure upgrades to support the SAVs, and new passenger facilities near the Ross Headquarters business park to serve as the route endpoint. The total cost for these improvements is \$3.3 million.

As sponsor for RM2 Project 32, Alameda CTC approved the allocation request and designated LAVTA as the implementing agency for the remaining \$2.7 million in RM2 funds for the Shared Autonomous Vehicle project at its Commission meeting on September 23<sup>rd</sup>, 2021.

**Issues:**

The total cost of the Phase 2 SAV project is higher than the RM2 funds available for the project. LAVTA is seeking additional capital funding sources, but in case additional funds are not secured, the project could be scaled down, by acquiring two vehicles instead of three, to be delivered with only RM2 funds.

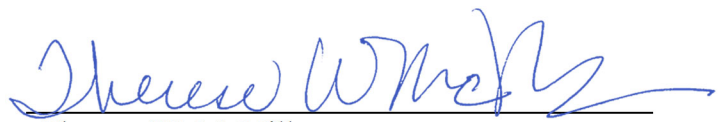
LAVTA has not yet secured funds to operate the SAV service. They have identified potential funding partners in the private businesses that would be served by the new route and are considering other State and Federal operations funding. Ensuring that capital investments for expansion of service are adequately funded for operations is an ongoing area of concern. Staff will continue to monitor LAVTA's progress on this and may take operations funding into consideration when evaluating future requests for construction funding for this project.

**Recommendation:**

Refer MTC Resolution No. 3664, Revised to the Commission for approval.

**Attachments:**

MTC Resolution No. 3664, Revised.



Therese W. McMillan