



## TREASURE ISLAND MOBILITY MANAGEMENT AGENCY

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# Memorandum

## AGENDA ITEM 3

**DATE:** July 13, 2020

**TO:** Treasure Island Mobility Management Agency Committee

**FROM:** Eric Cordoba - Deputy Director for Capital Projects

**SUBJECT:** 7/21/20 Committee Meeting: TIMMA Autonomous Shuttle Pilot Study

### RECOMMENDATION ☒ Information ☐ Action

None. This is an information item.

### SUMMARY

The Treasure Island Mobility Management Agency (TIMMA) will provide intra-island shuttle services for residents and visitors to Treasure Island and Yerba Buena Island. The Federal Highway Administration (FHWA) awarded the City and County of San Francisco the Advanced Transportation Congestion and Management Technologies Deployment (ATCMTD) grant to test and deploy advanced transportation technologies. TIMMA, as a subrecipient of the grant, is leading technical research and a public autonomous shuttle demonstration pilot. The project team is in the planning stage of this study with a potential procurement and deployment in late 2021.

- ☐ Fund Allocation
- ☐ Fund Programming
- ☐ Policy/Legislation
- ☒ Plan/Study
- ☐ Capital Project Oversight/Delivery
- ☐ Budget/Finance
- ☐ Contract/Agreement
- ☐ Other:  
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## BACKGROUND

The Treasure Island Transportation Implementation Plan (TITIP) published on June 28, 2011, envisioned an on-island shuttle system as a convenient amenity for residents, employees, and visitors on Treasure Island, allowing for easy circulation around Treasure Island (Island) for those who choose not to or are unable to walk or bike, and serving as a critical "first-mile/last-mile" connection for transit riders using the transbay buses or ferry service. The shuttles would serve the majority of land uses on Treasure Island and Yerba Buena Island, including open spaces, retail commercial zones, and residential neighborhoods. The shuttle service also enables the transbay bus services to avoid circling on-island, making that service more efficient and reliable.

Since 2011, there have been advances in Autonomous Vehicles (AV) technology revolutionizing the transportation landscape. AV technology has the potential to make our roadways safer by reducing crashes caused by human error, including crashes involving impaired or distracted drivers. Shared and electric transit or shuttle AV services are the ideal



application of AV technology for San Francisco, given our long-standing Transit-First Policy. Besides safety, other potential benefits to the public could include improved access for people with disabilities and others with driving or mobility limitations, and greater general mobility for all by complementing and extending the reach of traditional fixed route transit services.

FHWA awarded the ATCMTD grant to the City and County of San Francisco in February 2018. The SFMTA is the lead recipient of the grant and the Transportation Authority, acting as TIMMA, is the subrecipient. Given the nascent stage of this technology, the goals of the ATCMTD program are to deploy advanced technologies and related strategies to research the potential to enhance safety, mobility, sustainability, and economic vitality. The grant allocated \$335,000 to the AV shuttle pilot study and the Treasure Island Development Authority ( ) provided an additional \$335,000 in matching funds. For TIMMA, this pilot study will provide insights to AV performance, operation, and maintenance, and whether the technology could be a viable alternative to the traditional shuttles and form part of a holistic solution to deliver safe and sustainable transit options as envisioned in the TITIP.

## DISCUSSION

**Goals and Objectives.** The AV Shuttle Project Team is in the planning stage of the overall effort. Technical and operational goals include testing AVs ability to navigate safely in traffic on public streets, provide “first mile/last mile” transit service from the future Transit Hub/Ferry Terminal, enhance accessibility for people with disabilities, perform in different environmental conditions and roadway geometries, and respond appropriately to emergency vehicles.

From a public acceptance and economic development perspective, the pilot will also have significance by demonstrating the first publicly accessible AV shuttle service on public rights of way in California and help promote Island businesses and destinations by bringing visitors to Treasure Island to experience this novel mode of travel. We also hope to involve Treasure Island job programs and local hiring coordination through Treasure Island Homeless Development Initiative or One Treasure Island to help produce the pilot.

The project team is also identifying key issues such as vehicle type; vehicle route; safety (concierge) driver requirements; quantity and spacing of stops, stop requirements, and locations; physical navigation requirements and signage; right-of-way; data and vehicle communications; storage and charging; maintenance and cleaning of vehicles; and ongoing software upgrades and cybersecurity. We envision procuring a turn-key AV shuttle service to operate a publicly accessible pilot on Treasure Island for approximately 3 months. The shuttle will navigate a predetermined route on Treasure Island and will include a safety driver, and possibly a concierge to ensure public safety. Research deployments (non-publicly accessible) and testing is planned for select locations on Yerba Buena Island.

**Project Development and Federal Review.** The project team is currently developing system engineering documents that require FHWA approval prior to shuttle deployment. Two of these documents are the Concept of Operations (ConOps) and System Engineering



Management Plan (SEMP). The ConOps conveys a high-level view of the required AV shuttle system, frames the overall system and establishes the technical course for the project by serving as a bridge between early project concepts and the eventual technical requirements. The SEMP identifies resources, processes, and methodologies to maximize the quality of the project while adhering to the scope, budget, and schedule. The project team has completed these draft documents and submitted them to FHWA for approval.

The project team is also working closely with SFMTA and TIDA to develop the pilot study. SFMTA is providing input into operational designs and accessibility needs. The project team believes that lessons learned from the study can inform future local AV management and deployments on City streets which are seeing continued testing by AV companies. SFMTA and TIDA are both helping to identify shuttle routes, stops, and storage locations on the islands.

**Regulatory Permits and Approvals.** The AV industry is governed by various federal and state regulations for research testing and public access deployment of AV services on local streets.

The California Public Utilities Commission (CPUC) and Department of Motor Vehicles (DMV) oversee AV deployments on public roadways including the ability to convey members of the public. The DMV permits vehicles, requiring AV companies to obtain testing permits before they can operate on public streets. CPUC provides approval for carrying passengers and approval will also be required before non-AV company employees can board the shuttles. One project risk is the possibility that DMV regulations may prohibit TIMMA from reimbursing AV companies in the pilot study. Although AV companies have funded initial pilot studies at other locations in the past, they are now more reluctant to do so for economic reasons. We are working with state officials to address this limitation.

Additionally, we note that most of the AV shuttles in the market currently do not meet all of the Federal Motor Vehicle Safety Standards. Therefore, exemptions will potentially be needed by AV companies for the vehicles. The National Highway Transportation Safety Administration (NHTSA) will also have to approve the shuttle routes. NHTSA requires a detailed Geographic Information System file of the route that the shuttle will take, as well as the number of shuttles, the route that each shuttle is assigned to, target headway, and more. Each alternate route also needs to be approved.

**Schedule.** The project team intends to issue a Request for Information in the Fall of 2020 to the AV shuttle vendor community to solicit feedback on critical operational issues. We will then proceed with issuing a Request for Proposals to AV shuttle vendors in early 2021, with award anticipated in Spring 2021. Shuttle Deployment of an AV shuttle for 3 months is anticipated in the Fall of 2021, with evaluation and final report submittals to FHWA in 2022.

We are seeking input and guidance from the TIMMA Committee and will continue to share updates of this work with TIDA, Treasure Island/Yerba Buena Island Citizen Advisory Board, Transportation Authority Citizens Advisory Committee, and other interested groups on the Island and within the region.



## **FINANCIAL IMPACT**

None. This is an information item.

## **SUPPLEMENTAL MATERIALS**

None.