TREASURE ISLAND
MOBILITY MANAGEMENT AGENCY

1455 Market Street, 22ND Floor, San Francisco, CA 94103 415-522-4800 info@timma.org www.timma.org

Request for Information

for Turn-key Development, Deployment and Evaluation for the Treasure Island Autonomous Shuttle Pilot Project

DATE ISSUED	RESPONSES DUE	CONTACT
December 15, 2020	January 19, 2021 at 11:00 a.m. (electronically)	Ron Leong Management Analyst 415.522.4817 ronald.leong@sfcta.org

SECTION I – NOTICE

Notice is hereby given that the Treasure Island Mobility Management Agency (TIMMA) is requesting information from autonomous vehicle companies for the Treasure Island Autonomous Shuttle Pilot project (Project). The purpose of this RFI is to 1) provide general information about the Project, and 2) solicit input on the autonomous shuttle, innovative automated vehicle technology, and turn-key services to plan, design, deploy, test, operate and evaluate the Project. TIMMA may issue a Request for Proposals (RFP) for the Project in 2021. Submitting a response to this RFI is not a prerequisite to submit a proposal for the RFP.

Applicants are encouraged to visit Treasure Island and Yerba Buena Island on their own to understand the terrain, traffic, and street networks.

QUESTIONS. Questions may be submitted in writing by the stated deadline by e-mail to info@timma.org. Please include "RFI 20/21-08 – Treasure Island Autonomous Shuttle Pilot Project" in the subject line. TIMMA's responses and any addenda to the RFI will be emailed to the RFI distribution list in addition to any proposers that submitted questions prior to the proposal due date. At TIMMA's discretion, responses to certain questions may be deferred and addressed in the potential RFP. Please see Section II for all important dates and deadlines.

SECTION II - REQUEST FOR INFORMATION SCHEDULE

DATE	ACTIVITY
December 15, 2020	Release of RFI
December 29, 5:00 p.m.	Companies to submit written questions to TIMMA
January 5, 2021*	TIMMA issues written responses to questions
January 19, 2021, 11:00 a.m.	Responses to RFI due electronically to info@timma.org. Late submissions will not be accepted
January 25*	Invitation(s) to informational meetings issued to responding companies if necessary*
Week of February 1*	Informational meetings* (scheduled if necessary)

* *Subject to change*

SECTION III – AGENCY BACKGROUND

The Treasure Island Transportation Management Act of 2008 (AB 981) authorizes the creation or designation of a Treasure Island-specific transportation management agency. On April 1, 2014, the San Francisco Board of Supervisors adopted a resolution designating the San Francisco County Transportation Authority (Transportation Authority) as the Treasure Island Mobility Management Agency (TIMMA) to implement elements of the Treasure Island Transportation Implementation Plan (TITIP) in support of the Treasure Island/Yerba Buena Island Development Project. The TITIP calls for, and TIMMA will be responsible for implementing, the Treasure Island Mobility Management Program: a comprehensive and integrated program to manage travel demand on Treasure Island. Aspects of the program includes an integrated congestion pricing program with vehicle tolling, parking pricing, and transit pass components Assembly Bill 141 (Ammiano), signed in 2014, which established TIMMA as a separate entity, providing a firewall between TIMMA and the Transportation Authority's other functions. TIMMA is also responsible for implementing shuttle services for Treasure Island and Yerba Buena Island (collectively referred to as "the Islands"). The shuttle services will only operate on the Islands and will not travel onto the Bay Bridge nor to San Francisco and Oakland. The eleven members of the Transportation Authority Board serve as the Board of Commissioners for TIMMA, and Transportation Authority staff also serve as the staff of TIMMA.

SECTION IV – PROJECT BACKGROUND AND PURPOSE

A. PROJECT BACKGROUND

In late 2016, the Transportation Authority, acting on behalf of TIMMA, joined the San Francisco Municipal Transportation Agency's application for federal Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) funding. The ATCMTD program's goals are to fund demonstrations of advanced transportation technologies aimed at addressing mobility and environmental challenges such as congestion reduction and traffic safety through partnerships with the federal government and private sector. Goals of the program also includes increase in driver, passenger, and pedestrian safety related to deployment of autonomous vehicles and other advanced technologies.

The U.S. Department of Transportation (USDOT) awarded $300,000 to design and test an autonomous shuttle to provide first and last mile circulation on the Islands, with an equal local match. The Project is intended to provide temporary on-island travel service. The Project will enable TIMMA to learn about the technology including its capabilities and limitations, to learn about public attitudes towards transportation automation, identify operational requirements and potential benefits of automated transportation services, and to share lessons learned. The Project service should be fulfilled by a multi-passenger, shared-use vehicle with automated capabilities. The shuttle will traverse public roads within the area of the demonstration Project and is subject to all local, state and federal regulations.

B. PROJECT PURPOSE and GOALS

TIMMA seeks an Autonomous Shuttle provider that will develop, deploy and provide information to evaluate autonomous shuttle pilot service on Treasure Island. Treasure Island is currently under construction and redevelopment is expected to add 8,000 new housing units over the next 15-20 years. TIMMA intends to test a turn-key Autonomous Shuttle service that operates on public roadways at a frequency deemed necessary to provide "first and last mile" connections to transit and on-island trips. Human operators are expected to be available on board each vehicle during operations to monitor the vehicle, take control of the operation of the vehicle should the need arise, gather users' experience via survey tools, assist users with special needs and log or gather relevant data. The proposed technology solution involves vehicles that are Level 4 automated, as defined in SAE J30163 "Levels of Driving Automation" (https://www.sae.org/news/2019/01/sae-updates-j3016-automated-driving-graphic), Americans with Disability Act (ADA) accessible, and preferably electric, serving the public on short trips around the island and to transit hubs. Operations of the fleet are expected to be fixed-route service, with a predetermined route and signed stops for passengers to board and alight. TIMMA is also exploring on-demand shuttle service through mobile and web applications.

The Autonomous Shuttle provider shall furnish all services and labor necessary to plan, test, conduct, and complete the services described herein. The Autonomous Shuttle provider shall also furnish all materials, equipment, supplies, and incidentals necessary to perform the services (other than those designated in writing to be furnished by TIMMA), and check and/or test the materials, equipment, supplies, and incidentals as necessary in carrying out this work. The services shall be performed to the satisfaction of TIMMA consistent with applicable professional standards. The Autonomous Shuttle provider shall comply with all applicable federal and state laws, rules, and regulations.

The Autonomous Shuttle provider shall perform pilot testing and pilot operations in accordance with OSHA regulations and accepted safety practices. Pilot testing and operations shall comply with relevant California Department of Motor Vehicles (DMV) and California Public Utilities Commission (CPUC) permit requirements and vehicles must comply with Federal Motor Vehicle Safety Standards (FMVSS) and consider best practices and policies as outlined by Federal Highway Administration, USDOT, and National Highway Traffic Safety Administration (NHTSA).

Safety

For this project, the safety goal is to understand the public safety implications of an Autonomous Shuttle without compromising the safety of shuttle passengers or other road users. Public safety implications may include, but are not limited to, shuttle rider and road user perceptions of safety when riding the shuttle and sharing the road with the shuttle, and actual shuttle operation performance, assessed by how often the Autonomous Shuttle disengages.

Mobility

The TITIP describes transportation needs and describes a shuttle service that is needed for Treasure Island. The mobility goal is to show the ability to provide a limited circulator service conveying member of the public in mixed traffic, as well as specific research tests (without members of the public) on other Treasure Island roadways/conditions. Transportation needs for passenger service include allowing for safe, easy, and reliable circulation for those who choose not to or are unable to walk or bike, connect to transit stops (bus or ferry), and offer travel throughout the Islands.

Operations

The project aims to understand Autonomous Shuttle reliability, operation and maintenance requirements, costs, and business models. By having a better understanding of the organization and infrastructure needs of an Autonomous Shuttle deployment, TIMMA and partner agencies may better recognize other opportunities that may be appropriate for Autonomous Shuttle Services.

Research/Share Lessons Learned

This goal seeks to document research findings on whether the Autonomous Shuttle pilot service is safe, secure, reliable, and cost-efficient. For this project, the research plan is to obtain insights from the public and data from the autonomous vehicle (AV) technology and service itself. Data on the vehicle operations, ridership, interactions with road users, and safety is intended to be collected throughout the project period and shared with project stakeholders throughout the course of the project and at completion.

Preliminary Project Schedule*

TIMMA AV Shuttle Schedule	Year 2021									Year 2022				
	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
	Month8	Month9	Month10	Month11	Month12	Month13	Month14	Month15	Month16	Month17	Month18	Month19	Month20	Month21
Procurement														
Request for Proposal	TIMMA	TIMMA	TIMMA	TIMMA										
TIMMA Board Approval				TIMMA										
Contract Negotiation				TIMMA	TIMMA									
Post Procurement														
Planning														
Work Plan					Contractor	Contractor								
Safety Management Plan					Contractor	Contractor								
Implementation Plan					Contractor	Contractor								
O&M Plan					Contractor	Contractor								
Test Plan					Contractor	Contractor								
Training Plan					Contractor	Contractor								
Infrastructure Deployment					TIDA	TIDA								
Design														
Design/Vehicle Manufacturing					Contractor	Contractor	Contractor							
Regulatory Approvals														
FMVSS Exemption						Contractor	Contractor							
NHTSA Waiver						Contractor	Contractor							
NHTSA Route Approval						Contractor	Contractor							
DMV Approval							Contractor	Contractor						
CPUC Approval								Contractor	Contractor					
Deployment														
Vehicle Delivery								Contractor						
Route Mapping								Contractor						
Testing														
Factory Acceptance Testing						Contractor	Contractor							
Preliminary Acceptance Testing									Contractor					
Final Acceptance Testing									Contractor					
Training									Contractor					
Pilot Operations and Maintenance										Contractor	Contractor	Contractor		
Pilot Evaluation												Contractor	Contractor	TIMMA
Communication and Outreach	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA	TIMMA

Legend (lead)
TIMMA | Contractor | TIDA

* preliminary schedule is subject to change

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C. AUTONOMOUS SHUTTLE PROVIDER RESPONSIBILITIES:

1. Schedule and conduct regular meetings with TIMMA's project team to review the project, contact persons, and review relevant information. The Autonomous Shuttle provider should review and clarify project issues, data needs, and sequence of events and team meetings that are essential to complete testing by the established deadline.
2. Provide solutions to unique problems that may arise during the project
3. Attend project and stakeholder meetings as directed by the TIMMA Project Manager
4. Designate a liaison between the AV provider and TIMMA's communications team.
5. Develop Implementation Plan
6. Develop Safety Management Plan
7. Develop Testing and Evaluation Plan
8. Develop Standard Operating Procedure
9. Develop Maintenance Plan
10. Conduct testing
11. Perform operations during defined operational period
12. Respond to customer service issues and complaints in English, Spanish, Chinese, or any other languages deemed necessary
13. Develop a plan to capture rider sentiment, concerns, and/or questions
14. Collect and submit data and information necessary for project evaluation
15. Autonomous Shuttle and associated equipment storage, maintenance, gas/charging, etc.
16. Acquire regulatory approvals, including FMVSS Exemption, NHTSA Waiver, NHTSA Route Approval, California DMV Approval, and CPUC Approval
17. The Provider is assumed to obtain and maintain liability insurance, at its own cost and expense, during the term of a contract. The minimum level and types of coverage will be specified in the RFP.

D. GEOGRAPHICAL LIMITATIONS

The Islands are located in San Francisco Bay between San Francisco and Oakland. Yerba Buena Island is a natural island that connects the eastern and western spans of the Bay Bridge via the Yerba Buena Tunnel that runs through the center of the island. Treasure Island is an artificial island to the northwest of Yerba Buena Island that is connected by roadway to Yerba Buena Island. Treasure Island is a flat island, but Yerba Buena Island has steep slopes with grades as much as 20% and limited sight distance.

E. PROPOSED AUTONOMOUS SHUTTLE ROUTE (FIXED/ON-DEMAND)

A preliminary route has been developed as part of the planning phase of the TIMMA Autonomous Shuttle project. The route was determined using the original routes proposed in the TITIP with modifications due to the phased construction of the Project and other restrictions. Additional considerations when planning the route included parked cars next to the route, vegetation maintenance near the roadways, turning radii when the shuttle is turning, and horizontal and vertical curves. The Project envisions the pilot route to include all, or a portion, of the preliminary route.

Shuttle stops will be located along the route alignment. The headway, route length, number of shuttle stops, and the average speed of the Autonomous Shuttles determine the number of shuttles needed for the Project. Since the purpose of the Project is to evaluate the technology, a longer headway or shorter route may be considered to minimize the number of shuttles and the pilot costs or even extend the Project duration.

Pavement markings and signing within the route segments will be provided in their existing condition. TIMMA is evaluating potential infrastructure improvements before Project deployment.

The Autonomous Shuttles will operate on a fixed-route service, similar to a bus service where the shuttle stops at each predetermined stop. On-demand service would be a service that operates where users can call a shuttle, either at a predetermined spot along the route or at their current location and may have the shuttle drop them off along the route or at a destination off of the route. The TITIP identifies fixed-route services for island shuttles.

F. ONGOING SOFTWARE UPGRADES AND CYBERSECURITY

Ongoing software updates may be handled via over-the-air updates (4G), through Wi-Fi or manually by concierge or maintenance staff while the shuttle is parked for charging.

Cybersecurity will be the responsibility of the shuttle vendor and must meet minimum technology and insurance requirements. The vendor may be required to have a data privacy plan and conduct a privacy impact assessment as part of the RFI. These documents will ensure that the vendor is taking appropriate cybersecurity considerations to protect passengers and their information.

G. SUPERVISION

TIMMA envisions at least one operator on-board each vehicle during the Project. The on-board operator will have a concierge role and, potentially, safety-driver role, although both staff roles could be played by one person. The safety-driver role will be responsible for monitoring the automated driving system. The concierge will be responsible for greeting the

passengers, assisting the passengers as needed, providing traveler information, and documenting data and notes. The concierge will be trained on safety procedures and how to interact with riders.

SECTION V – QUESTIONS FOR INDUSTRY

The following is a general list of questions on which TIMMA is seeking input from the industry in order to guide preparation of the RFP. One of the primary goals of the RFI is to weigh the considerations associated with the delivery approach in terms of the type of contract awarded through the RFP.

1. Project concept and operational requirements
    a. Provide feedback on the proposed Project including proposed routes, stops and right of way operational needs.
    b. Provide feedback on number of vehicles for Project deployment and minimum headways.
    c. Identify vehicles' Operational Design Domain and its applicability to operations within the islands.
        i. List any operational or technical limitation(s) we should be aware of, such as: road geometry (grade, turning radii, superelevation) and weather/visibility (fog, rain, darkness) conditions, etc.
    d. Provide feedback on vehicle's ability or limitations to safely operate in mixed traffic, with emergency vehicles (police, fire, etc.), near construction sites, with other curb-accessing vehicles (transit, passenger vehicles), and road users (pedestrian, bicyclists, and shared mobility users).
    e. Describe the cleaning protocols that would be used to ensure the health and safety of riders. Project service will need to develop a virus/bacteria specific protocol for the onboard concierge/safety driver as well as for passengers. Describe the air ventilation system of the vehicle. Does the vehicle have operable windows?
    f. Provide overview of the company's approach to responding to safety critical events, managing on-road safety, and managing rider safety.
2. Vehicle type and requirements
    a. Provide a description of the automated vehicle technologies, systems, solutions and/or other characteristics that are part of the Project concept, such as types, makes and models of vehicles, SAE International (formerly known as the Society of Automotive Engineers) levels of automation being deployed, and other specific details.
    b. Describe how proposed vehicle can meet the Project's high-level requirements including maximizing passenger capacity and traveling at maximum safe operating speeds.

c. Does the vehicle meet ADA requirements? If not, are there plans for having ADA accessible vehicles by testing date; please provide?

   i. What capabilities and challenges exist to provide seamless and reliable access for people with disabilities?

   ii. Please address access for wheelchair users and persons who are blind/low vision and deaf/hard of hearing.

d. Confirm vehicles' compliance with FMVSS. If applicable, identify which FMVSS for which you would seek an exemption.

e. Describe vehicles' status with the NHTSA 12-point voluntary safety self-assessment.

3. Successful project deployment:

   a. Provide feedback of company's test experience conducted to date on autonomous vehicles.

   b. Provide overview of the company's approach to responding to safety critical events, managing on-road safety, and managing rider safety.

   c. Describe company's process for updating and testing software, including maintaining security standards.

   d. Are the operators and vehicles approved for operations in California under the requirements of California DMV's Autonomous Vehicle Tester Program?

   e. Provide prior experience with obtaining CPUC's permit to carry passengers.

4. Charging, storage, communication, maintenance, and infrastructure requirements. Treasure Island and Yerba Buena Island are both undergoing extensive construction and spaces for vehicles storage and operation are limited. TIMMA will work to secure the necessary space for company.

   a. Describe facility requirements for staging, testing, training, storage and maintenance of Autonomous Shuttles (square footage, utilities, security, etc.).

      Describe in detail:

      i. Electrical service requirements for charging and storage facility.

      ii. Fueling requirements (if needed).

      iii. Charging operational requirements.

      iv. Ability to have separate storage and charging (or fueling) locations.

      v. Communications infrastructure requirements, such as WiFi, 4G or 5G.

   b. What critical infrastructure improvements are necessary for the vehicle to operate, such as lane striping, communication infrastructure, high visibility signs, passenger access, etc.

5. Reporting requirements. As part of the ATCMTD grant, TIMMA will submit a report of the pilot program and findings to FHWA.
    a. Based on the project goals, what project performance measures should be collected and reported? Describe any data sharing constraints to sharing information and data.
    b. What restrictions would there be for adding additional data collection devices to the exterior of the vehicles?
    c. The project team expects to have ownership of the data collected as part of the project testing and project operations. Do you foresee any issues with this?
6. Schedule
    a. Provide feedback on preliminary project schedule.
    b. Describe activities needed by vendor from contract signing to project deployment and close-out.
7. Contracting terms
    a. Describe preferences or limitations regarding contract terms and contracting vehicles.
    b. Provide the estimated monthly lease price including operations and maintenance costs and other relevant costs.
    c. Discuss vendor's level of interest in providing Autonomous Shuttle services on the Islands.
8. Partnering opportunities
    a. Identify any scenarios under which your team may provide Autonomous Shuttles for the project through cost sharing or in-kind contributions.
    b. Identify sponsorship and advertisements opportunities on the Autonomous Shuttles and along the route during project and to support potential long-term deployment.
9. Do you have any innovative ideas for improving the proposed project study, vehicle, route, and deployment?
    a. In case a permit to carry passengers on California public roads is not granted, what other use case could be tested at Treasure Island?
    b. Are there any new features you wish to propose testing?

SECTION VI – RFI RESPONSE REQUIREMENTS: CONTENT AND FORMAT

All responses should be clear, concise, and provide sufficient information to minimize questions and assumptions. Responses can include brochures and marketing materials. TIMMA accepts no financial responsibility for any costs incurred in the preparation of

responses. Upon receipt by TIMMA, all accepted responses submitted for this RFI will become the property of the TIMMA.

Time and Place for Submission of Responses. By the submission deadline, the following must be transmitted: one (1) electronic copy (PDF) including all information herein requested. Please clearly specify in the subject line of the e-mail transmittal: "Response to RFI 20/21-08 Treasure Island Autonomous Shuttle Pilot Project".

The responses must be transmitted electronically to TIMMA at the following address: info@timma.org.

All responses must be in writing and received by TIMMA by the due date and time. Responses received later than the above date and time will be rejected.

Cover Letter. Companies must submit a letter of introduction for the response. The cover letter should include the following:

- Name of company
- Primary contract information (phone, email, etc.)
- Brief company information

Content. The responses should focus on the information requested in Section V. Vendors are encouraged to provide innovative responses that meet program goals.

Companies must clearly designate financial submittals or other materials in its submittal, if any, which it in good faith believes to be a trade secret or confidential proprietary information protected from disclosure. See Section VIII below, for further details on public disclosure of responses and other materials.

SECTION VII – INFORMATIONAL MEETINGS WITH COMPANIES

TIMMA may hold individual informational meetings with each of the companies that submit a response per the content requested in Section V. Note that the responses will not be formally scored or evaluated. The informational meetings are intended to be informal and will be held by video conferencing. Information shared during the meetings may be used to inform development of the Project. Any materials submitted to TIMMA as part of the RFI process, including materials provided at the informational meetings, are subject to public disclosure under the California Public Records Act per Section VIII, unless such materials are otherwise exempt from disclosure.

SECTION VIII – NOTE REGARDING PUBLIC DISCLOSURE OF RESPONSES AND OTHER MATERIALS

Under the California Public Records Act (PRA; Government Code sections 6250 *et seq*.), records, information and materials submitted to TIMMA, not otherwise exempt, are subject to public disclosure. Immediately after the response deadline, the materials submitted by all

companies will be open to inspection. Each party submitting a response to the RFI should clearly designate financial submittals or other materials, if any, which it in good faith believes to be corporate proprietary information, including trade secrets, protected from disclosure; if no materials are designated, the submitted response in its entirety may be subject to release under the PRA. To the extent permitted by law, TIMMA will attempt to maintain the confidentiality of such information by providing the company with notice that it has received a request. If the company desires that such materials not be disclosed, it may, at its own expense, take appropriate legal action to prevent such disclosure. However, such confidentiality cannot be assured, TIMMA will not be liable for the public disclosure of any material submitted to it.