TREASURE ISLAND
MOBILITY MANAGEMENT AGENCY

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Memorandum

AGENDA ITEM 4

DATE: October 12, 2022

TO: Treasure Island Mobility Management Agency Committee

FROM: Rachel Hiatt, Deputy Director for Planning

SUBJECT: 10/18/22 Committee Meeting: Award a Two and a Half-Year Operating Agreement to Beep, Inc. in an Amount Not to Exceed $825,000 to Provide Autonomous Vehicle Shuttle Pilot Project Services on Treasure Island

RECOMMENDATION

☐ **Information** ☒ **Action**

- Award a two and a half-year operating agreement to Beep, Inc. (Beep) in an Amount Not to Exceed $825,000 to provide autonomous vehicle shuttle pilot project services on Treasure Island
- Authorize the Executive Director to negotiate operating agreement payment terms and non-material terms and conditions

SUMMARY

The Treasure Island Autonomous Vehicle (AV) Shuttle Pilot Project (Pilot) is a nine-month demonstration of an on-island shuttle serving Treasure Island, provided by an AV Shuttle. This is the first AV Shuttle being tested with passenger service on public roads in California. We issued a Request for Information (RFI) on December 15, 2020 and a Request for Proposals (RFP) on May 23, 2022 to identify a provider to deliver AV Shuttle service including providing a vehicle, operating service, supporting community outreach and workforce and labor partnerships, and collecting data for ongoing pilot evaluations. We received three proposals by the due date of July 6, 2022. Following interviews with two firms, the multi-agency selection panel recommends award of the operating agreement to Beep (Provider).

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

BACKGROUND

Approved in 2011, the redevelopment of Treasure Island is expected to add 8,000 new housing units – 27% of them affordable – and other transformative new land uses and open space on the Island over the next 15-20 years. 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) component of the development project. The TITIP calls for, and TIMMA will be responsible for, implementing the Treasure Island Mobility Management Program, which includes a free on-island shuttle.

The TITIP envisioned an on-Island shuttle system as a convenient amenity for residents, employees, and visitors on Treasure Island, allowing for easy circulation around the 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, and will not travel onto the Bay Bridge to San Francisco or Oakland. The shuttle service would also enable the Transbay bus services to avoid circling on-Island, making that service more efficient and reliable.

In 2014, the US Department of Transportation released its "Smart City Challenge" grant program call for projects to showcase emerging transportation innovations and technology. The San Francisco Municipal Transportation Agency (SFMTA) and Transportation Authority, acting on behalf of TIMMA, jointly applied and were awarded a federal Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) grant that included funding for this AV Shuttle Pilot project. Project launch was delayed due to several factors including the pandemic. During the past 5 years, there has been rapid development of AV technology, with numerous deployments of AV services across the nation, including for private passenger travel and goods movement, and "first/last mile" transit services.[1] While the pace and breadth of AV adoption is unknown, testing and evaluation as well as some commercial deployments are underway and pilots such as this project provide important technical and qualitative data to inform the regulation and marketing of this technology.

The purpose of the AV Shuttle Pilot Project is to demonstrate operational capabilities of AVs in a mixed-use environment; gather data on perceptions of AVs from riders and non-riders; and explore workforce development, educational, and economic development opportunities.

The AV Shuttle Pilot Project will provide free rides to the public for a nine-month period, anticipated to begin in March 2023. The project team worked closely with the SFMTA and the Treasure Island Development Authority (TIDA) to develop and to complete the Provider procurement. TIMMA will oversee the project and SFMTA will continue to advise on the pilot shuttle route and operational and accessibility needs. TIDA will continue to support the pilot project by coordinating it with ongoing development activities on the island and securing a storage and charging facility for the vehicle.

[1] An AV can drive itself with little or no human involvement, using sensors and sophisticated programming to detect and react to its surroundings. Testing and pilots of AV shuttles and taxis designed to carry members of the public are taking place in cities across the country, including in St. Petersburg, Florida; Ann Arbor, Michigan; and Arlington, Texas, as well as a number of AV deployments in private settings. In California, forty-nine (49) companies have permits with the Department of Motor Vehicle (DMV) to test AV technology and two companies have additional permits from the California Public Utilities Commission (CPUC) to carry passengers, including here in San Francisco. The Contra Costa Transportation Authority has been managing a project to test AVs on non-public streets.

DISCUSSION

The AV shuttle will be a multi-passenger, ADA-compliant, shared-use vehicle operating on a fixed route on Treasure Island with pre-designated stops. The recommended Provider will use a fully electric vehicle and an on-board safety attendant will be present at all times.

This is an opportunity, funded largely with federal grants, to test AVs on a limited basis to better understand not just the technology and its capabilities, but also to explore related workforce development, economic development, educational, and other opportunities to promote learnings and local participation in this emerging industry. Regular deployment of AVs for public transit use is some years away, and we are using this pilot to gather firsthand data about AVs that could inform any potential future service. The AV Shuttle Pilot Project will also allow us to collect information about the performance of an AV shuttle on Treasure Island, as well as community reaction from riders and other users of the streets.

The AV Shuttle Pilot Project route and stops will be finalized once the operating agreement is executed (see Attachment 1 for proposed route), with input from the public.

The goals of the AV Shuttle Pilot Project are as follows:

- Without risking safety of the public, understand the safety features and capabilities of an AV shuttle.
- Understand if/how AV shuttle technology can support mobility on Treasure Island
- Understand organizational and infrastructure needs to operate an AV shuttle
- Gather insights from the public and data from the AV technology during the pilot and share lessons learned

The Provider is responsible for reporting performance metrics regularly, with some data such as boardings, miles traveled, on-time performance tracked daily and other data such as wheelchair boardings on a weekly basis. Any safety issues or incidents would be reported immediately. Data reporting will support ongoing pilot evaluation and learnings to guide adjustments to better serve rider travel needs. Adjustments will also be guided by findings collected through the community engagement effort. The project scope plans for adjustments in the service to be defined and implemented after the first three months of service, as needed.

Following the nine-month operating service period, the project team will evaluate the AV Shuttle Pilot Project and compile a final report, with support from the Provider.

Safety. While the vehicle will operate predominantly in autonomous mode, a human attendant will always be present in the vehicle to monitor the vehicle and take control of the operation of the vehicle should the need arise. When safe, the attendant will also be available to answer questions, assist passengers, and facilitate data collection. The Provider's Safety Management Plan will address safety considerations such as the ability for passengers to safely board/alight, interactions between passengers and test operators, roadway changes due to construction, COVID protocols, and potential interactions with emergency response and law enforcement officials, among other topics.

Community Engagement and Workforce and Labor Partnerships. The AV Shuttle Pilot Project includes a proposed Community Engagement and Partnerships program designed to engage the Treasure Island community, general public, and local workforce, educational institutions, and businesses throughout the entire pilot period. TIMMA is currently exploring partnership opportunities with One Treasure Island (OTI), the Office of Economic and Workforce Development (OEWD), San Francisco Unified School District, City College, and others. Beep and others in the industry have developed training programs for next-generation automotive technology (for both autonomous and electric vehicles or Avs and electric vehicles or EVs) that can inform our efforts. We will seek feedback from the public (residents, merchants/non-profit organizations, visitors) to shape the pilot service and to gauge perceptions of the AV Shuttle, throughout the project.

Working with the Provider, OEWD and partners, we will aim to create opportunities to increase workforce exposure to the AV industry including job paths and skill/trade requirements for this industry. We have conducted initial outreach to labor leaders at TWU Local 250 and the Teamsters and will continue to engage with these groups throughout the Pilot. The Provider is also encouraged to incorporate local residents into their AV Shuttle Pilot Project workforce. For example, once the Provider is under contract, they will be connected to OTI as a potential Treasure Island employer in OTI's Job Assistance Program.

Additionally, through educational partnerships with San Francisco Unified School District and/or City College we will identify learning opportunities for high school and college students related to career paths in automotive technology (AV and EV) and potential certificate or training program opportunities in areas that could include vehicle maintenance, charging and operations.

The AV Shuttle Pilot Project does have the potential to create a limited number of jobs for the duration of the pilot period; the RFP encourages new job opportunities be filled through local hire.

Permits and Regulations. The shuttle will traverse public roads within the area of the demonstration project and will be subject to all applicable local, state, and federal regulations. The Provider is responsible for obtaining all necessary federal and state permits and to obtain required insurance, and will perform pilot testing and pilot operations in accordance with Occupational Safety and Health Administration regulations and accepted safety practices.[2] Pilot testing and operations will comply with relevant California Department of Motor Vehicles and California Public Utilities Commission permit requirements and vehicles will meet Federal Motor Vehicle Safety Standards or receive necessary

[2] TIMMA has received an informal opinion from the CPUC that the proposed pilot appears to meet the criteria of CPUC Code 226 to create an exemption from the requirement to possess a certificate of public convenience and necessity. This exemption would allow for the pilot to carry members of the public. TIMMA has also received clarification on CA DMV Article 3.7, Section 227.26 to ensure that the AV Shuttle Pilot Project may operate on the proposed route.

exemptions and consider best practices and policies as outlined by the Federal Highway Administration, U.S. Department of Transportation, and National Highway Traffic Safety Administration.

Schedule. Following contracting, the Provider will prepare safety, training, data sharing, and other plans, receive necessary permits, map the route, and fit out a storage and charging facility on Treasure Island this fall as staff concludes ongoing community outreach to confirm the service plan. A 30-day test period will take place on the island without passengers, expected in Winter 2022/2023. The test period will include efforts to understand the operational capabilities and limitations of an AV shuttle. The Pilot is expected to begin passenger operations in March 2023, with community outreach and feedback collected throughout. The AV Shuttle Pilot Project evaluation and final report are scheduled for completion in March 2024.

Procurement Process. Following several rounds of industry sounding, we issued an RFP for a Provider for the AV Shuttle Pilot Project on May 23, 2022 and held a virtual pre-proposal conference on June 1, 2022, which provided opportunities for small businesses and larger firms to meet and form partnerships. Twenty firms attended the conference. We took steps to encourage participation from small and disadvantaged business enterprises, including advertising in six local newspapers. We also distributed the RFP to certified small, disadvantaged, and local businesses; Bay Area and cultural chambers of commerce; and small business councils.

By the due date of July 6, 2022, we received three proposals in response to the RFP. A selection panel comprised of Transportation Authority/TIMMA, TIDA, SFMTA and Metropolitan Transportation Commission (MTC) staff evaluated the proposals based on qualifications and other criteria identified in the RFP, including the proposer's understanding of project objectives, technical and management approach, and capabilities and experience. We held interviews with two of the three teams and recommend awarding an operating agreement to Beep. Beep is working with the Contra Costa Transportation Authority and is already in the California permitting process. They also have extensive experience and qualifications with education and workforce development. In addition, Beep's vehicle better facilitates boarding for wheelchairs and others with mobility challenges.

We will receive federal assistance to fund a portion of this contract and we have adhered to federal procurement regulations. The RFP included a 3% Disadvantaged Business Enterprise (DBE) goal for this contract, accepting certifications by the California Unified Certification Program. Beep's proposal met the contract goal. The Beep team includes Leshner Planning and Transportation, a woman-owned and Bay Area-based transportation, planning and community outreach specialist who will assist with local regulatory approvals and support outreach. Although Beep is headquartered in Florida, which is a state with laws that restrict abortion access or discriminate against LGBT individuals, the Banned State List does not apply to contracts funded in whole or in part by regional, state, federal or private funding.

Operating Agreement. A draft operating agreement was included with the RFP, and Beep submitted comments as part of their proposal. Payment on the operating agreement is proposed to be structured as a lump sum agreement, with progress payments made to the operator upon satisfactory completion

of various milestones throughout the term of the agreement. Staff will negotiate final terms following award of the contract by the Board.

FINANCIAL IMPACT

The operating agreement amount of $825,000 will be funded by a federal ATCMTD grant through SFMTA, a federal Innovative Deployments to Enhance Arterials Shared Automated Vehicles (IDEA SAV) grant through MTC, a state Affordable Housing and Sustainable Communities Program grant through TIDA, and a Prop K appropriation approved by the Transportation Authority Board in June 2022 through Resolution 22-57. Through the ATCMTD grant, TIMMA has procured HNTB Corporation for Technical Project Management services to support planning, evaluation, and reporting of the AV Shuttle Pilot Project. The adopted Fiscal Year 2022/23 budget includes this year's activities and sufficient funds will be included in future year budgets to cover the remaining cost of the operating agreement.

TIDA CAB FEEDBACK

The Treasure Island Autonomous Vehicle Shuttle Pilot was presented as an informational item to TIDA's Citizens Advisory Board (CAB) at its October 4, 2022. Members asked questions about the details of the pilot operations, such as routing, schedule, and vehicle capacity, and were generally supportive of the project.

SUPPLEMENTAL MATERIALS

- Attachment 1 – Project Map – Potential Pilot Route and Stops
- Attachment 2 – Scope of Services

Attachment 1
Project Map – Potential Pilot Route and Stops

Attachment 2
Scope of Services

TIMMA seeks an Autonomous Shuttle provider that will develop, deploy, and provide information to evaluate an Autonomous Shuttle pilot service on Treasure Island. TIMMA intends to test a turn-key Autonomous Shuttle service for members of the public that operates on public roadways at a frequency deemed necessary to address "first and last mile" connections to transit and on-island trips. Human operators (referred to as Autonomous Shuttle test operators or test operators throughout this document) are expected on board each vehicle during operations to monitor the vehicle, take control of the operation of the vehicle should the need arise, gather user's experience via survey tools, and log or gather relevant data. The proposed transportation technology involves vehicles that are Level 4 automated, as defined in SAE J3016 "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 use fixed-route service with a predetermined route and signed stops for passengers to board and alight.

TIMMA will ensure there is secure vehicle storage, available charging, and marked and accessible stop locations. The Autonomous Shuttle provider shall furnish all services and labor necessary to plan, implement, test, operate and maintain, 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 Autonomous Shuttle provider shall comply with all applicable federal and state laws, rules, and regulations. TIMMA has obtained an informal opinion from the California Public Utilities Commission for Code 226 that the AV Shuttle Pilot Project meets the criteria for an exemption from the requirement to possess a certificate of public convenience and necessity. TIMMA has also received clarification on California Department of Motor Vehicles (DMV) Article 3.7, Section 227.26 to ensure that the AV Shuttle Pilot Project can operate on the proposed route.

The Autonomous Shuttle provider shall perform pilot testing and pilot operations in accordance with Occupational Safety and Health Administration regulations and accepted safety practices. Pilot testing and operations shall comply with relevant 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, U.S. Department of Transportation, and National Highway Traffic Safety Administration (NHTSA).

Project Goals:

Safety

For this project, the safety goal is to understand the public safety implications of an Autonomous Shuttle while maintaining 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.

Mobility and Operations

The TITIP describes transportation needs for a shuttle service that is needed for Treasure Island. The mobility goal is to demonstrate the ability to provide a reliable limited circulator service carrying members of the public in mixed traffic, as well as specific research tests (without members of the public) on other TI/YBI roadways/conditions (e.g. time of day, roadway geometries, weather 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, connecting to transit stops (bus or ferry), and traveling throughout the Islands. The project aims to understand Autonomous Shuttle reliability, vehicle functionality, operation and maintenance requirements, costs, and project management in a real-world environment.

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.

Autonomous Shuttle Provider Responsibilities

The Autonomous Shuttle provider shall be responsible for:

1. Procurement
    a. Execute procurement documents
    b. Obtain and maintain liability insurance, at its own cost and expense, during the term of the contract. The minimum level and types of coverage are included in the terms and conditions of this RFP and are set forth in the Operating Agreement
2. Planning
    a. Address and resolve any problems and project issues that may arise during the project
    b. Review and clarify tasks, submittals, data needs, sequence of events and meetings that are essential to complete all work by the established deadline
    c. Schedule and conduct regular meetings with TIMMA's project team to review the project and relevant information
    d. Attend relevant stakeholder meetings as directed by the TIMMA Project Manager
    e. Designate a liaison between the AV provider and TIMMA's communications team
    f. Develop Work Plan
    g. Develop Safety Management Plan
    h. Develop a Data Management, Sharing, and Cybersecurity Plan

i. Develop Test Plan
j. Develop Operations and Maintenance Plan (includes Standard Operating Procedure)
k. Develop Training Plan
l. Develop Evaluation and Reporting Plan
    i. Develop a plan to capture rider sentiment, concerns, and/or questions
m. Execute sublease agreement with Treasure Island Development Authority

3. Infrastructure Development
    a. Support TIMMA in identifying and coordinating the infrastructure needs for the project
4. Design
    a. Design and procure Autonomous Shuttle vehicles
5. Regulatory Approvals
    a. Acquire regulatory approvals, including FMVSS Exemption, NHTSA Waiver, NHTSA Route Approval, California DMV Approval, and CPUC Approval
6. Deployment
    a. Provide the Autonomous Shuttle vehicle and all associated equipment and equipment maintenance, less the storage, and charging infrastructure provided by TIMMA.
    b. Map vehicle route and potential construction-related detours
    c. Perform customer service activities, including providing logs of contact information (phone, email, website, etc.) for questions and complaints. Promptly (within 24-48 hours) respond to issues and complaints in English, Spanish, Chinese, or Filipino
7. Testing
    a. Conduct vehicle testing according to (TIMMA approved) Test and Safety Plan
8. Training
    a. Conduct required training (according to TIMMA approved plan) for all the staff and public agency personnel (law enforcement, first responders) who may interact with the Autonomous Shuttle
9. Pilot Operations and Maintenance
    a. Perform operations during defined operational period providing all necessary staffing needs, including Autonomous Shuttle test operator
    b. Perform maintenance as identified (and approved by TIMMA) in the Operations and Maintenance Plan
10. Pilot Evaluation & Reporting
    a. Conduct project evaluation (according to TIMMA approved plan) including data collection and analysis
11. Communication and Outreach
    a. Provide feedback for communication and outreach
    b. Support TIMMA in community outreach prior to pilot launch, during pilot, and after pilot concludes
    c. Support and participate in an agreed upon community partnerships effort
    d. Broadly respond to and address project inquiries from TIMMA

Estimated Project Milestone Schedule

Planning	Fall 2022
Regulatory Approvals	Winter 2022/23

Testing and Training	Winter 2022/23
Pilot Operations and Maintenance	Spring – Fall 2023
Data Collection and Reporting	Spring - Fall 2023
Communication and Outreach	Ongoing
Evaluation and Final Report	Spring 2024

Note: Dates shown on this table are subject to change.

Project Tasks

Task 1 Planning and Project Management

A dedicated project manager from the provider, identified in the proposal will be the single point of contact for the project and available to TIMMA, TIDA, and SFMTA for coordination and lessons learned.

Provider will develop project deliverables, including work plan, safety management plan, implementation plan, data management, data sharing, cyber security plan, test plan, operations & maintenance (O&M) plan, training plan and reporting plan. TIMMA, SFMTA, and TIDA and their representatives (Project Team) will provide guidance and input on the planning activities, attend meetings, and review the deliverables. TIMMA will provide final approval of deliverables.

1.1 Project meetings

Kickoff Meeting: Prepare and conduct a project kick-off meeting at the test site with TIMMA and other project stakeholders, including SFMTA and TIDA.

Discuss/refine the following elements during the project kick-off meeting:

- The elements of the project work plan including risk management plan
- Pilot requirements
- Strategy for pilot demonstration
- Roles and responsibilities
- Meeting schedule and participation

Following the kick-off meeting, conduct a site visit and summarize the outcome of the kick-off meeting for approval by TIMMA.

Project Update Meetings: Conduct monthly project meetings and during pilot operations biweekly meetings with the project team to provide updates on the progress of the work. Track action items and provide meeting summaries after each meeting.

Pre-On-Site Testing First Responder Meeting: Provider shall conduct a meeting with emergency and law enforcement first responders and provide relevant training on how to interact with the shuttle once in operation.

Pre-Field Testing Meeting: The provider shall conduct a Pre-Field Testing meeting with TIMMA to ensure all requirements for on-road deployment (without passengers) have been met. The meeting will take

place at the test site and will include a tour of the complete testing site and operations. At this Pre-Field meeting, TIMMA will provide the notice-to-proceed for the field testing (without passengers).

Pre-Pilot Meeting: Conduct a Pre-Pilot meeting with the project team to provide an overview of the field testing results. The meeting will take place at the test site and will include a tour of the complete demonstration site to ensure that the site and the shuttle(s) are ready for pilot operations. At this Pre-Pilot meeting, TIMMA will provide the notice-to-proceed for the commencement operations with passengers. If there are any deficiencies found, the provider has 10 days to provide proof of cure upon adequately addressing all deficiencies.

Note: Requirements for in-person meetings at TIDA offices will be based on the public health orders in place at the time, and will be conveyed to the team well ahead of any meeting.

1.2 Work Plan

Within ten (10) working days of Notice to Proceed and before the kick-off meeting, the provider will submit a detailed schedule and schedule of values. Fifteen working days prior to the kick-off meeting, the provider will submit a detailed Work Plan for TIMMA to review and comment. The Work Plan should include:

- All project tasks and activities including any of TIMMA's responsibilities.
- Identify the necessary pre-planning activities, required materials (beyond shuttles), with lead time and training activities.
- List of expected procedures to be developed.
- All project submittals with due dates, TIMMA review times, and risks that may impact schedule
- Quality plan for the project detailing quality control and quality assurance activities

1.3 Safety Management Plan

Based on the risks identified by the provider when performing a site and existing conditions assessment, as well as prior experience with the vehicles, the provider will develop a Safety Management Plan. The plan shall include safety considerations such as the ability for passengers to safely board/alight, especially those passengers with disabilities, passenger to passenger and passenger to test operator interactions, managing human traffic control officers and other roadway changes due to construction, interaction with other road users, COVID mitigation, COVID protocol for the Autonomous Shuttle test operators and vehicles, any potential interactions with emergency response and law enforcement officials, and cybersecurity related to vehicle control and/or operations, specifying how specific incidents will be handled. The Safety Management Plan shall detail the operational test period (within which the Autonomous Shuttle will be operated without passengers ensuring the vehicle can safely navigate Treasure Island's road environment) and clearly identify how the vehicle operations will be deemed safe prior to allowing the public on the vehicle. This plan should contain a risk register, with an assessment for each risk of its likelihood and severity and a corresponding mitigation strategy for each risk.

1.4 Data Management, Sharing and Cybersecurity Plan

Develop a Data Management, Sharing, and Cybersecurity Plan to document the project data being collected, managed, and shared. At a minimum, this plan or its supporting documentation shall cover

data management, data security, cybersecurity, and data privacy for the data generated by and collected in relation to the Automated Shuttle demonstration. This plan will be updated as needed during the demonstration. The original plan and each update shall be reviewed and commented on by the project team. All data collected during the Pilot Program shall be shared with TIMMA in accordance with the Data Management, Sharing, and Cybersecurity Plan. All data shared with TIMMA will be considered project data. TIMMA shall own all project data and there shall be no restrictions on TIMMA's right to share such data as TIMMA deems appropriate.

Data Management

This plan will identify the procedures and interfaces the provider will use to meet the Data Reporting Requirements listed in 1.8 Reporting Plan. Major data categories include real-time service data, trip and travel data, operations data, and event data. Real-time service data should be shared with TIMMA via a Web API. Trip and travel data, operations data, and event data should be delivered at the transmission frequency shown in the Table 2 in 1.8 Reporting Plan. Tabular data should be submitted in CSV format. Geospatial data should be submitted in Shapefile format. Other data should be submitted in an appropriate format that can be opened and read with standard software. Additional information regarding size and scale of expected data transmission should be included in the plan.

Data Security

The Data Security Plan will identify the means of control (administrative, logical, technical and physical) for data collected for this project and the specific security controls being used. Security controls discussed in the plan are expected to include encryption, physical control, access control, identification and authorization management, testing, secure software development lifecycle, security operations, data loss prevention, patching, antivirus, and malware checking, remote software upgrades and installation, employee training, security operations event review and incident response plan, including how the project team will be notified of any incident.

Data Privacy

The provider will develop a Data Privacy Plan, Data Privacy Agreement, and participate in a Privacy Impact Assessment. The Data Privacy Plan will lay out the privacy controls that will be in place to protect the data collected for this project. Categories of information that should be included are data minimization, personally identifiable information (collection, use, sharing, access, and correction), data retention, transparency (notices are to be given to riders that data and recordings are collected including any cameras used), de-identification protocols method used before transmitting data for this project and any assessment of re-identification risk or de-identification validation.

Applicable privacy, security and record retention laws that are in effect and that go into effect during this project will need to be included in the plan and any updated plans. Consideration should be given to: San Francisco's Privacy First Policy (San Francisco Charter SEC. 16.130), The California Consumer Privacy Act of 2018, public records laws including the California Public Records Act, Government Code Section 6250, San Francisco Sunshine Ordinance and San Francisco Administrative Code Section 67.1 and other relevant privacy protection laws that come into effect during this project. These laws should be listed as references in the plan and, where applicable, a table should state how they relate to the project.

The Data Privacy Agreement will bind parties with access to PII to data privacy policies developed in the Data Privacy Plan.

Finally, the provider will be required to participate in a Privacy Impact Assessment (PIA) designed to help the team to better understand how Personal Identifiable Information (PII) will be collected, used, stored and shared. At a minimum, the PIA will include data flow analysis for potential PII, identification of personnel who handles PII with relevant protocols, and a final report. Exhibit A[3] includes a sample PIA questionnaire for further reference. Should the provider bring on any subconsultants with PII inclusive data collection, use or sharing duties, the subconsultants shall be required to participate in a Privacy Impact Assessment.

Cybersecurity

The provider must provide and implement a cybersecurity plan consistent with national best practices provided by National Institute of Standards and Technology and Automotive and Information Sharing and Analysis Center. This may be part of the Data Management and Sharing Plan, or it can be a separate document. The cybersecurity plan should also include provisions for vehicle control and operations. The provider shall be solely responsible for maintaining cybersecurity insurance.

1.5 Test Plan

The provider will develop a test plan for the shuttle testing including Factory Acceptance Testing at the provider's facility, and a preliminary and final acceptance testing conducted on public roads after the delivery of the vehicles. As part of the testing plan, identify the scope, objectives, approach, methodology, assumptions, risks, contingency plan, schedule, testing environment, and a testing checklist. It is anticipated that there will be testing on private facilities or other controlled environments and on public roadways (without passengers). Testing scenarios shall be developed with input from TIMMA. For each scenario, the test plan should indicate the method/technique that will be used to test the scenario, the evaluation criteria, and standards for passing or failing the test. The test should provide traceability to a specific System Requirement (SyRS) so that TIMMA may verify that all SyRS have been met. See Project SyRS in Exhibit B. Additionally, the provider should document important technical requirements in addition to those specified in the SyRS, as necessary and appropriate. The test plan will also provide criteria for suspending and resuming testing, and a description of the staff and resources that are necessary to complete the tests, especially as some tests may involve local stakeholders outside of the provider. Note that current California State regulations require on-road testing without passengers in an environment that is similar to the environment for passenger service testing for 30 days prior to CPUC approval to carry passengers. Testing will include a weather proofing test to prove the vehicle will not leak in the event of heavy rains. The test plan should include preliminary hazard assessment and operational hazard assessment addressing safety and risk mitigation. Sample use cases for testing are identified in the Concept of Operations (Exhibit C).

Project Team will review the draft test plan and may consult, additional subject matter experts TIMMA deems necessary, and in relation to other key plans. The provider shall incorporate any changes requested from TIMMA and submit the final testing plan for TIMMA's approval. The provider will

[3] RFP exhibits have been excluded from the TIMMA Committee memo, but are available upon request.

conduct testing only after TIMMA's approval. TIMMA, SFMTA and TIDA representatives will be notified at least 10 days in advance of scheduling a test and offered the opportunity to witness the testing. TIMMA is responsible for final acceptance of each test.

1.6 Operations and Maintenance (O&M) Plan

The provider will develop an O&M plan for the shuttle service. At a minimum, the O&M plan should answer all the questions of who, what, where and when regarding operations and maintenance of the shuttle service. It should identify training, operations, safety, monitoring, maintenance and security procedures and processes as well as handling of exceptions, emergencies, and recovery in a variety of scenarios. The O&M plan will likely leverage, summarize, and consolidate several other submittals from the provider including the training plan and safety management plan and clearly distinguish the roles and responsibilities of TIMMA and the provider and their expected level of effort and cost. The O&M Plan shall include routine and emergency maintenance strategies, as well as a cleaning schedule and strategies for keeping the interior clean (refer to Exhibit D). The O&M Plan shall include check lists for the activities each maintenance and operations staff must perform, including how operations staff will interact with passengers or other members of the public. Finally, since the shuttle service is intended to be a limited demonstration, the O&M Plan should describe the end service process for discontinuing service including, but not limited to, how service equipment will be repurposed, retired, disposed of, or otherwise handled. The provider shall submit an initial O&M Plan for review by TIMMA or their representatives. The provider shall incorporate any changes from TIMMA and submit the final O&M Plan for TIMMA approval.

1.7 Training Plan

The provider will submit a Training Plan in compliance with the Application Requirements for Autonomous Vehicle Tester Program – Testing with a Driver[4] and per the project schedule. In coordination with TIMMA, TIDA, SFMTA, and other project stakeholders, the provider shall discuss with and train local first responders and law enforcement on how to safely interact with the vehicle in case of emergency and have this information readily available to first responders in the vehicle. The shuttle provider should develop and execute training materials, such as a Local Law Enforcement Interaction Plan as required by the CA DMV for driverless testing, in coordination with and to be reviewed by local law enforcement and first responders. Safety must be an integral part of all instruction.

The plan shall include:

- Target groups training will be developed for test operators law enforcement, emergency responders, etc.
- Specific trainee performance objectives, by group.
- Draft lesson plans by group.
- Specific topics to be covered including subsystem groupings for mechanics and electronic technician training.
- Probable training aids and materials.

[4] https://www.dmv.ca.gov/portal/vehicle-industry-services/autonomous-vehicles/testing-autonomous-vehicles-with-a-driver/#avt

- Training schedule.
- Training facilities required.

1.8 Reporting and Evaluation Plan

The provider will develop a Reporting Plan that adheres to the Project Evaluation Framework included as Appendix A of the ConOps (Exhibit C). The reporting plan shall include the project goals, objectives, and the performance measures for each objective included in the evaluation framework. For each performance measure the provider shall include detailed data collection and calculation methodology, data sources, draft surveys tools where applicable, frequency of data collection, sample reporting templates and file formats (when transmitted digitally). TIMMA does not intend to collect personally identifiable information (PII). However, if PII must be collected for user surveys or other travel experience needs, provider will need to have Institutional Review Board review the protocol and survey instrument. Provider shall detail how this data will be secured and protected as part of the data privacy plan.

The Reporting and Evaluation Plan should identify datasets for periods when the vehicle is open to passengers and periods for downtime (e.g. due to mechanical or staffing issues), which staff will use to conduct analysis, and summary reports. The datasets should include real-time service data, trip and travel data, operations data, and event data, and any other relevant data categories. Safety incidents (collisions, near misses, sudden acceleration/deceleration) should be reported to TIMMA Project Manager immediately, while trip and travel data, operations data, event data, and other performance measures can be reported on a weekly or monthly basis. The provider shall provide templates for safety incident and operational reporting as part of the Reporting Plan.

Table 2 identifies minimum expectations for data items and reporting frequencies to be collected and submitted to TIMMA.

Table 2: Data to be Shared with TIMMA by Type and Frequency

Data	**Frequency of Transmission**
Vehicle route and schedule as per General Transit Feed Specifications	Before launch and when changes or updates occur
Wheelchair ramp deployments	Weekly
Wheelchair securements	Weekly
Real-time vehicle location information	Real-time or near real-time
Information in the event of a safety incident including, but limited to Automatic Dependent Surveillance (ADS) sensor information, camera footage, Event Data Recorded data and logs and other telemetry data	As requested and/or immediately in the event of a safety incident

Trip updates and service alerts	Real-time or near real-time
Navigation variances	Daily
Ridership (stop-level boardings and alightings)	Daily
Probe data	Weekly
Actual stop arrival and departure times	Daily
Mechanical data (vehicle condition)	Daily
Vehicles miles traveled	Daily
Disengagements (either by operator or system)	Weekly
Near misses, collisions, and sudden acceleration/deceleration	As soon as possible following each occurrence
Vehicle hours traveled	Daily
Any other logged events (hard stops, evasive maneuvers, unruly passenger behavior, etc.)	Weekly
Number of route-trips served	Daily
Conditions driven in (weather, congestion, pedestrian and cyclist's volumes etc.)	Weekly
Duration of each trip	Daily
Incident reports (Incidents include any collisions, and passenger behavior or other situations when an external entity is called upon for assistance)	Within 48 hours following an incident
Battery usage (such that it can be associated with weather, temperature, vehicle load, etc.)	Weekly
Signal Phasing and Timing, Map Data Messages, and Basic Safety Messages	Monthly
Average vehicle speeds	Weekly
Other data required for pilot evaluation	As needed

Deliverables:

- *Project meeting attendance and/or facilitation, meeting materials, and meeting notes*
- *Work Plan*
- *Safety Management Plan*

- *Data Management*
- *Data Sharing, and Cybersecurity Plan*
- *Test Plan*
- *Operations and Maintenance Plan*
- *Training Plan*
- *Reporting and Evaluation Plan*

Task 2 Vehicle Design

The provider will design and manufacture all Autonomous Shuttles in compliance of all laws and regulations and per vehicle requirements listed in Exhibit B and ADA requirements as identified in Exhibit D. Please include a description of the proposed vehicle design to include items listed below; attach relevant diagrams, product safety data sheets, system architecture diagrams, more detailed information on the operating design domain of the vehicle, etc:

1. Type of propulsion
2. Number of vehicles to be provided
3. Capacity of each vehicle, including the number of seats, riders and operators, wheelchair, stroller, and or bicycle space, luggage/baggage space, etc. per vehicle
4. Vehicle make, model
5. Security features such as internal and external cameras (number and type) and recording capability
6. Model year
7. Availability to wrap or brand the vehicle
8. Passenger counting technology, if available
9. Description of how the service will be readily usable and accessible to people with disabilities
10. Description of the vehicle and how vehicle equipment complies with 49 CFR Part 38 of the Code of Federal Regulations (Americans with Disabilities Act (ADA) Accessibility Specifications for Transportation Vehicles)?
11. If the proposed vehicle(s) are new, used, or modified
12. Detailed description of how vehicle(s) complies with Part 38. of the ADA? Include a discussion of the following sections, as applicable:
    - § 38.23 Mobility aid accessibility
    - § 38.25 Doors, steps and thresholds
    - § 38.27 Priority seating signs
    - § 38.29 Interior circulation, handrails and stanchions
    - § 38.31 Lighting.
    - § 38.35 Public information system
    - § 38.37 Stop request.
    - § 38.39 Destination and route signs
13. Explanation of if the vehicle needs to deviate from the specifications in Exhibit D.

14. Brief description of the vehicle's ability to operate the following operating functions in automated mode:
    a. Performing a low-speed merge, pulling over to the side of the road, and moving out of the travel lane and stopping in order to service stop locations
    b. Following a car when approaching intersections and in stop and go traffic conditions by maintaining a safe distance behind the vehicle in front of them and determining when to proceed based on that vehicle's behavior
    c. Navigating signalized and unsignalized intersections and performing left and right turns
    d. Entering and emerging from a stop-controlled traffic circle
    e. Crossing intersections with traffic speed limits up to 25 mph
    f. Changing lanes (both left and right lane change)
    g. Making appropriate right-of-way decisions when merging from a shuttle stop, at intersections, and when interacting with vulnerable road users
    h. Detecting and responding to encroaching oncoming vehicles
    i. Detecting stopped vehicles in their path and passing if necessary and safe
    j. Detecting and responding to static and moving obstacles in their path, including construction equipment
    k. Detecting and responding appropriately to emergency vehicles
    l. Detecting and responding appropriately to law enforcement
    m. Detecting and responding to vulnerable road users, such as pedestrians, cyclists, and scooters, in or approaching the vehicle's projected travel path, including at intersections and crosswalks
    n. Providing a safe distance from vehicles, pedestrians, bicyclists, and scooters on the side of the road or sharing the lane
    o. Responding safely and appropriately given the traffic situation when there is uncertainty regarding a maneuver. Description of how quickly the vehicle can hand over control to the safety operator as to not impact traffic conditions. Detecting and responding to detours and other temporary changes in traffic patterns, such as people (including construction workers and police officers) directing traffic in unplanned or planned events. An acceptable response includes informing the human operator of the need to take manual control.
    p. Operating in normal (not deemed a weather emergency) rain, and fog, conditions
    q. Ability for test operator to communicate safety information to pedestrians or other motorists (e.g. horn) and the passengers
    r. Emergency braking for obstacles in the road
15. Ability and description of how the human operator shall take manual control if deemed necessary
16. Ability and description of how the vehicle will achieve a minimal risk condition if the human operator cannot take control and how the vehicle will decide where to stop.

Deliverables:

- *Vehicle(s) compliant with all laws and regulations per vehicle requirements listed in Exhibit B and ADA requirements as identified in Exhibit D*

Task 3 Regulatory Approval

The provider is responsible for all federal, state, and local regulatory approval, including FMVSS Exemption, NHTSA Waiver and Route Approval, and the appropriate CA DMV and CPUC permits. Include experience with federal and state permit processes, a timeline for all steps to obtain relevant approvals, exemptions, and permits and potential risks to the schedule. The provider should provide the project team with the opportunity to review any exemption applications that would be required for a complete understanding of safety standards that would be requested for exemption.

Deliverable:

- *Receipt of all federal, state, and local regulatory approval, including any relevant exemption applications*

Task 4 Testing

Provider will perform the 30-day test period, Factory Acceptance Test, and any other required testing (such as tabletop exercise with first responders, preliminary acceptance testing, and full operational testing) as outlined in the Test Plan (Task 1.5) to verify the vehicles are built and will operate in accordance with design specifications, as detailed in the testing plan approved by TIMMA. For each test type conducted, the provider shall record the results and maintain the sensor data for all on- and off-field testing and, upon testing completion, as they may be asked to provide supporting data logs and sensor recordings to TIMMA. TIMMA and SFMTA shall have the option to witness all tests and ride the shuttle prior to delivery for quality assurance purposes. Ten working days' notice to TIMMA PM is required prior to each test being conducted. The provider shall provide a summary of the results of each test type outlined in the test plan, including the capabilities demonstrated, the conditions under which they occurred, and any corrective action necessary for any failed or deferred test cases. The provider shall provide the test summary to TIMMA within ten days of the test being executed. TIMMA, with support from the provider, will determine if additional/repeat tests are required upon reviewing the draft test results and make this determination within ten days of the submittal of the test report; additional testing will be done at provider's expense.

Delivery of the autonomous pilot vehicles at the test site shall be coordinated with TIDA and TIMMA. Prior to delivery, the provider shall prepare certification of their shuttle(s) consistent with applicable federal requirements and standards or have acquired exemption, policies and regulations for such motor vehicle and the Highly Automated Vehicle (HAV) system consistent with California State regulation and guided by US DOT's Policy Guidance, and relevant SAE and Institute of Electrical and Electronics Engineer best practices. The provider will notify TIMMA 15 days before scheduled on-site delivery, TIMMA will witness vehicle delivery. The delivered vehicles shall be inspected by TIMMA or their representatives and accepted by TIMMA for quality assurance purposes. **All vehicles must be NHTSA compliant or have**

required exemption; TIMMA will not perform acceptance testing or pay for any expenses related to vehicle procurement.

Once the pre-field-testing meeting detailed in Task 1.1 has been performed, the Provider shall conduct any required testing on public roads without passengers as detailed in the Testing Plan approved by TIMMA. The Provider shall record the sensor data from this testing and share this data as well as a summary of the results of the on-site testing with the Project Team for examination prior to obtaining TIMMA's approval to provide passenger service.

Deliverables:

- *Vehicle delivery and testing*
- *All relevant testing data*
- *Testing summary report*

Task 5 Deployment

Following the successful completion of the on-site testing and the notice-to-proceed provided by TIMMA at the pre-pilot meeting (see Task 1.1), the provider shall start the pilot. The shuttle will run in autonomous mode on the pre-determined route. An Autonomous Shuttle test operator shall be present within the shuttle at all times throughout the pilot period. The vehicle concierge, which could be the safety driver or another designated person on board, will assist the passengers and receive feedback from the users. The provider shall be responsible for the entire operations and maintenance of the shuttle as described in Task 7.A Draft Concept of Operations, which identifies the project stakeholders, their roles and responsibilities, and operational scenarios has been developed for the project. The Concept of Operations is provided in Exhibit C.

Deliverable

- *Vehicle deployment for the length of the pilot period*

Task 6 Training

Conduct Autonomous Shuttle test operator training as identified in the Training Plan approved by TIMMA. Provider is responsible for recruiting and training the Autonomous Shuttle test operators and any other needed positions to complete the project; hiring of local (Treasure Island residents) and/or partnering with local businesses is highly encouraged; please discuss opportunities to support local hiring. Provide information on what position(s) or partners will be available for local hire; include a plan to promote position, timeline for hiring, and compensation. TIMMA will oversee the training activities of the provider and ensure compliance with the training plan.

Provider is encouraged to incorporate local residents of Treasure Island into their workforce. The organization One Treasure Island operates a worker training and job placement program for residents of Treasure Island. All workers available through One Treasure Island meet universal standards of job readiness. Please contact Alex Francois, One Treasure Island Employment Program Manager, at (415) 986-4810 or afrancois@onetreasureisland.org to learn about the availability of locally available residents

through One Treasure Island to supplement your workforce. In addition, provider is encouraged to work with labor groups to develop labor harmony provisions.

Deliverable:

- *Recruitment and hiring of operators and relevant positions for a successful project, with a preference for island residents*
- *Shuttle Operator training*

Task 7 Pilot Operations and Maintenance

The provider shall be responsible for the operations and maintenance of the shuttle as detailed in the Operations and Maintenance Plan approved by TIMMA and as outlined in the operating agreement provided in Exhibit G; this includes compliance with all necessary Federal Operating Requirements. Service will operate on fixed route. Pre-scheduled trips and advance reservation services are not required. The provider is responsible for day-to-day pilot operations and maintenance and the safe storage of the AV shuttles. The provider will provide monthly Operational Reports for TIMMA's review that include route analysis, operational plan, topology, weather, and temperature and other relevant operational elements.

Service Information

1. Vehicle Type
   The vehicle type for the pilot must be ADA accessible and low-emission.

2. Vehicle Route
   Preliminary potential routes have been developed as part of the planning phase of the TIMMA Autonomous Shuttle project (see Exhibit E) and were determined using the original routes proposed in the TITIP, with modifications due to the phased construction of the project and other restrictions. Provider shall work with TIMMA to incorporate public outreach findings, cost constraints, and route feasibility to define a recommended or preferred route to maximize user experience. The route options should account for Muni transit service, parked cars along the route, vegetation maintenance near the road, turning radii when the shuttle is turning, and horizontal and vertical curves. Final pilot route will be coordinated with the Project Team, project stakeholders, and approved by TIMMA. The vehicle route may also be adjusted during the 9-month pilot period to reflect community and passenger feedback collected during the pilot.

3. Quantity and Spacing of Stops
   In coordination with TIMMA, TIDA, SFMTA, and the provider, stops locations will be identified. The provider shall also support TIMMA in identifying critical infrastructure improvement required for the safe operation of the AV shuttle prior to commencing the pilot study and during the pilot period.

The shuttle stops will be located along a one-to-two-mile loop that connects passengers between the Administration Building on the south side of Treasure Island, the commercial areas on the east side of the island, and the residential area on the north side of the island. The exact route and stop locations will be determined through outreach and coordination with the selected provider; it is anticipated that the route will have up to five stops.

4. Span and Frequency of Service
   Provider will operate shuttle services during select hours between 7:00 AM to 8:00 PM on weekdays and 7:00 AM to 5:00 PM on weekends with at no more than 30-minute headways. A longer headway or shorter route may be considered to minimize the number of shuttles and the overall pilot costs. The exact operating hours will be determined through outreach and coordination with the selected provider.

5. Traveler Demand and Capacity
   Provider shall state maximum traveler capacity given proposed vehicle, span, and frequency of service under current COVID safety guidelines and under non-COVID conditions.

6. Accessibility for People with Disability
   The AV pilot vehicle must comply with the accessibility requirements in 49 CFR Part 38 of the Code of Federal Regulations (ADA). Refer to the questions in Task 2. An example of specific vehicle requirements is included in Exhibit B and Exhibit D. Explain if the vehicle deviates from the specifications in the Exhibits and please detail how the proposed shuttle service will comply with ADA requirements, specifically noting any limitations of the vehicle or any instances where you are not providing accessible service and will instead provide an equivalent service alternative.

7. Traveler Information and Communication
   Provider shall lay out traveler information within the shuttles, on websites, and any mobile application. Onboard the shuttles, provide signage and displays that includes safety related information telling the passenger to hold on, how to sit safely, and notice on board surveillance, as applicable. Optionally, include the route progress and stop locations for traveler situational awareness. In addition to visual signage, provide an audible message with safety information, either by recording or announced by on-board staff. All communication on board and at stops should comply with ADA and Title VI requirements. The Autonomous Shuttle test operator must be able to communicate safety information to pedestrians or other motorists (e.g. horn) and the passengers. Contact information (phone, email, website, etc.) must be provided for questions or complaints from travelers and other members of the public. All communications with the public (including signage, flyers, website or application text and responses to inquires) must be approved by TIMMA. Questions or complaints must be addressed within 24-48 hours and relayed to TIMMA staff on a weekly or monthly basis.

8. Operational Modes

The Autonomous Shuttles will be operating on a fixed-route service. The speed limit on all roads along the route is 25 MPH. Please be aware that speed limits may be lower due to construction on both Treasure Island and Yerba Buena Island.

9. Supervision

   There will be at least one Autonomous Shuttle test operator onboard the vehicle during the pilot. The onboard staff will have concierge and safety driver roles, although both staff roles could potentially be fulfilled by one person or, alternatively, the concierge could be filled through a local hire program.

   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, how to interact with riders, and how to secure people that use mobility devices.

   The test operator with safety driver responsibilities will be responsible for taking control of the shuttle in case of a disengagement and ensuring that the shuttle is operating properly. The test operators will be trained on how to safely operate the shuttle, how to identify incorrect operations and how to communicate with the remote operator.

   The system operator will have an operations center located in the area or remotely where they can oversee the fleet of shuttles. A remote operator will be located at this center who can be contacted by the Autonomous Shuttle test operator if there are any issues.

10. Storage and Charging

    The shuttles will be stored and charged in an on-island facility located on Avenue M at 13th Street, with secured access and shelter. The planned location for vehicle storage and charging is shown in Exhibit E, below. Charging stations that are SAE J1772 compliant are available and will be free of charge. There will not be other charging stations at stops or along the shuttle's route.

11. Maintenance and Cleaning of Vehicles

    All maintenance will be performed by the shuttle provider. If a shuttle requires maintenance, the shuttle will be taken out of service until the required maintenance is performed.

    Daily, at the beginning or the end of service, the shuttles will be wiped down by the concierge or maintenance staff. In addition, the shuttle cleaning schedule will at a minimum mimic the same cleaning schedule and other standard operating procedures that the Muni buses follow at the time of the pilot. Cleaning procedures are rapidly changing due to the COVID-19 pandemic; refer to Cal/OSHA for COVID and general procedures (https://www.dir.ca.gov/dosh/coronavirus/) and the US DOT and CDC requirements for masking and other protocols on transit (https://www.cdc.gov/quarantine/pdf/Mask-Order-CDC_GMTF_01-29-21-p.pdf)

TIDA does not allow oil and hazmat substances. If used, they must be securely stored with appropriate double containment; and if discarded, must be discarded in accordance with hazmat laws and regs and IN NO CASE shall any such materials be discharged to the island's wastewater or separate stormwater systems (this includes batteries).

12. Physical Upgrades and Signage
    Traffic signals, pavement markings, and signing within the route segments will be provided in their existing condition. TIMMA is evaluating potential infrastructure improvements before project demonstration and the provider shall work closely with TIMMA on identifying essential improvements for the pilot operations.

13. Right-of-Way
    No property acquisition is anticipated for operation of the shuttle service.

14. Ongoing Software Upgrades and Cybersecurity
    Ongoing software updates shall be provided at no additional cost through the duration of the project. 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. WiFi reliability on Treasure Island will be available but is not guaranteed.

    Cybersecurity will be the responsibility of the shuttle provider per the approved cybersecurity plan part of the data management and sharing plan.

Deliverable:

- *Ongoing vehicle operations and maintenance for pilot period in accordance with all vehicle standards, operating plans, etc.*

Task 8 Pilot Evaluation

TIMMA will evaluate the performance measures, as outlined in Attachment C – Concept of Operations, on a monthly basis to determine the success of the pilot, with the exception of the safety incidents which will be reviewed each day.

The provider shall track, collect, and submit data as detailed in the Reporting Plan approved by TIMMA.

Deliverable:

- *Monthly reports and data, as determined in the Reporting Plan*

Task 9 Communication and Outreach

TIMMA is responsible for all public communication, marketing, and outreach, with support in attendance or co-facilitation from the provider as needed. Provider should not speak to the media or other outside organizations without TIMMA's prior approval.

Task 9A [Optional]

TIMMA is interested in advancing community partnerships through the pilot and has identified four potential partnerships: local businesses, local workforce (training, hiring), youth and professional education, and technology industry knowledge transfer. Examples may include promotion of on-island businesses, career development and educational programs for student STEM programs, the on-island federal job corps, and training opportunities for transit operators/trainees, relevant operating unions and trades, or identifying collaboration opportunities for local hire initiatives through the program. TIMMA is interested in additional partnership opportunities and ideas based on provider experiences and knowledge of the industry and Treasure Island and San Francisco community.

This task has a maximum potential budget of $25,000 to be determined based on an agreed upon partnerships strategy, developed as part of this task.

Deliverables:

- *Attendance at all planned community outreach events, select vehicle information and materials as needed; at least 4 meetings are expected*
- *Support in identifying and implementing local economic development, job, and/or educational opportunities through implementation*