




# Memorandum

**Date:** 11.22.16 **RE:** Citizens Advisory Committee  
November 30, 2016

**To:** Citizens Advisory Committee

**From:** Eric Cordoba – Deputy Director for Capital Projects 

**Subject:** **ACTION** – Adopt a Motion of Support to Increase the Amount of the Professional Services Contract with Parsons Brinckerhoff, Inc. by \$960,000, to a Total Amount Not to Exceed \$1,210,000 through December 31, 2019 for System Engineering Services for the Treasure Island Mobility Management Program, and to Authorize the Executive Director to Modify Contract Payment Terms and Non-Material Contract Terms and Conditions

## Summary

On April 1, 2014, the San Francisco Board of Supervisors approved a resolution designating the Transportation Authority as the Treasure Island Mobility Management Agency (TIMMA) to implement the Treasure Island Transportation Implementation Plan in support of the Treasure Island/Yerba Buena Island Development Project. In September 2014, through Resolution 15-06, the Transportation Authority Board authorized the award of a contract to Parsons Brinckerhoff, Inc. for system engineering services for the Treasure Island Mobility Management Program (Program). The action authorized Phase I of Program, which includes preparation of the Concept of Operations and the draft System Engineering Management Plan (SEMP), for an amount not to exceed \$250,000, with the option to authorize additional phases of the work at a future date. The TIMMA budget and Work Program call for completion of Phases II and III of the scope of work in Fiscal Years 2016/17 to 2018/19. The scope of work for the first year was included in the adopted Fiscal Year 2016/17 budget. This work includes completing the final SEMP supporting TIMMA in the procurement of a contractor to install the toll system and oversight of the installation and testing of the toll equipment. The toll system is scheduled to be complete and open for operations in late 2019 concurrent with the first occupancy of new housing on Treasure Island.

## BACKGROUND

The San Francisco Board of Supervisors designated the Transportation Authority Board as the Treasure Island Mobility Management Agency (TIMMA) Board through Resolution 110-14 in April 2014. Assembly Bill 141, signed in September 2014, established TIMMA as a legal entity distinct from the Transportation Authority. The purpose of TIMMA is to implement a comprehensive and integrated program to manage travel demand on the island as the Treasure Island/Yerba Buena Island Development Project (Project) develops. The centerpiece of this innovative approach to mobility is an integrated and multimodal congestion pricing demonstration program, the Treasure Island Mobility Management (TIMM) Program, that applies motorist user fees to support enhanced bus, ferry, and shuttle transit, as well as bicycling options, to reduce the traffic impacts of the Project.

The Treasure Island Development Authority (TIDA) and the Transportation Authority have signed annual operating Memorandum of Agreements (MOAs) since Fiscal Year (FY) 2011/12 to establish the budget and scope of work for TIMMA activities. Through the current period, the Transportation

Authority has advanced the scope of work encompassed by these MOAs, including securing supplemental funding through grant awards from the Federal Highway Administration and the Metropolitan Transportation Commission for planning, policy analysis, and engineering. In July 2016, through Resolution 17-01, the TIMMA Board adopted preliminary policy recommendations for the TIMM Program that will guide the work program and development of final program elements that will need to be completed prior to the scheduled launch of the program in late 2019. The FY 2016/17–2018/19 TIMMA Work Program includes, among other activities, completion of the Program's final policy recommendations and business rules and the final design, construction and testing of the congestion pricing toll system.

To meet the objectives of the TIMMA Work Program, in spring 2014 we held a targeted industry outreach and issued of a Request for Proposals (RFP) for the Treasure Island Mobility Management Program System Engineering Manager. In September 2014, through Resolution 15-06, the Transportation Authority Board awarded the System Engineering Manager contract to Parsons Brinkerhoff, Inc. and authorized execution of a contract for a not to exceed amount of \$250,000 for the initial Phase of the project. The Board action provided the option to authorize additional phases of the work at a future date. The TIMMA Work Program identifies activities for Phases II & III and recommends a contract amendment for an amount not to exceed \$960,000. Authorization for Phase IV of the work will be at the Transportation Authority's sole and absolute discretion and will be by amendment to the consultant contract.

## DISCUSSION

The Transportation Authority, as TIMMA, is implementing a congestion pricing toll system on Treasure Island. The project will be implemented primarily through two contracts, a System Engineering contract and a System Integrator contract. The scope of work for the System Engineering contract includes initial planning for the toll system, development of system requirements, development of procurement documents for the System Integrator and oversight of the System Integrator work. The System Engineering contract with Parsons Brinkerhoff Inc. was to complete the initial planning and project development work for the toll system. The contract award allowed for a future amendment of the contract for completion of additional phases of the toll system including development of procurement documents for the toll System Integrator and oversight of the toll system installation. The scope of work for the System Integrator includes the final system design, installation, testing and maintenance of the toll system. The System Integrator contract is anticipated to be procured in summer 2017.

**Scope of Services:** The scope of services for the System Engineering Manager consultant is provided as Attachment 1. The scope is divided into several phases, which allows us to initiate each phase of consultant work through a Notice to Proceed, depending on the overall development schedule and identifying funding for future phases. Phase I of the project was initiated in November 2014 and is nearing completion. The TIMMA Work Program anticipates a Notice to Proceed for Phase II in early 2017. This work includes development of final civil and system design requirements and procurement of the toll system integrator. Phase III, oversight of the toll system integrator is scheduled to begin in fall 2017. If the Transportation Authority determines in its sole and absolute discretion that the selected consultant has performed Phases II and III satisfactorily and funding is available, Phase IV will immediately follow Phase III as a continuation of the TIMM Program System Engineering Project. If not, the Transportation Authority reserves the right to re-procure and to select a different consultant for Phase IV. Phase IV includes oversight of the first year of toll operations. Authorization for Phase IV will be at the Transportation Authority's sole and absolute discretion and will be by amendment to the consultant

contract.

**Budget:** The anticipated cost for Phase II and Phase III of the proposed Scope of Services is \$960,000. Funding for this work will be from a combination of federal grant funds and funding from TIDA.

**Disadvantaged Business Enterprise (DBE) Participation:** Since a portion of this contract is anticipated to be funded with federal financial assistance from the Federal Highway Administration, administered by Caltrans, the Transportation Authority will adhere to federal regulations pertaining to DBEs. For this contract we have established a DBE goal of 12%. Parsons Brinckerhoff, Inc. anticipates to achieve 12% DBE participation for Phase I of the contract through Hispanic-owned sub-consultant firm, Cambria Solutions, Inc. For the scope of work proposed in Phases II and III, Parsons Brinckerhoff, Inc. proposes to meet the contract goal of 12% through Cambria Solutions, Inc.

## ALTERNATIVES

1. Adopt a motion of support to increase the amount of the professional services contract with Parsons Brinckerhoff, Inc. by \$960,000, to a total amount not to exceed \$1,210,000 through December 31, 2019 for system engineering services for the Treasure Island Mobility Management Program, and to authorize the Executive Director to modify contract payment terms and non-material contract terms and conditions, as requested.
2. Adopted a motion of support to increase the amount of the professional services contract with Parsons Brinckerhoff, Inc. by \$960,000, to a total amount not to exceed \$1,210,000 through December 31, 2019 for system engineering services for the Treasure Island Mobility Management Program, and to authorize the Executive Director to modify contract payment terms and non-material contract terms and conditions, with modifications.
3. Defer action, pending additional information or further staff analysis.

## FINANCIAL IMPACTS

The anticipated cost for Phase II and Phase III of the proposed Scope of Services is \$960,000, of which \$430,000 is included in the adopted FY 2016/17 budget for TIMMA-related work, which will be reimbursed by TIDA. The San Francisco Municipal Transportation Agency has received preliminary notice of \$11 million in federal grant award for connected dynamic tolling for the Bay Bridge, of which approximately \$5 million is anticipated to be passed to the Transportation Authority for the Treasure Island toll system. Formal notice of this award is anticipated in early 2017 at which time the FY 2016/17 budget for the overall TIMMA work program will be amended. Sufficient funds will be included in future budgets to cover the remaining cost of the contract.

## RECOMMENDATION

Adopt a motion of support to increase the amount of the professional services contract with Parsons Brinckerhoff, Inc. by \$960,000, to a total amount not to exceed \$1,210,000 through December 31, 2019 for system engineering services for the Treasure Island Mobility Management Program, and to authorize the Executive Director to modify contract payment terms and non-material contract terms and conditions.

Attachment:

1. Treasure Island Mobility Management Program System Engineering Scope of Services

## Attachment 1 - Scope of Services

### Treasure Island Mobility Management Program System Engineering Manager

#### Project/Study Purpose and Background

On April 1, 2014, the San Francisco Board of Supervisors (BOS) adopted a resolution designating the 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 (TI/YBI) Development Project. The 2008 California State Assembly Bill No. 981 (AB 981), the Treasure Island Transportation Management Act, authorized the San Francisco BOS to designate a board or agency to act as the transportation/mobility management agency for Treasure Island. The Transportation Authority and Treasure Island Development Authority (TIDA) execute an annual operating agreement which defines the budget and work program for the fiscal year to support pre-implementation of the TITIP. 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 as the development project occurs, including an integrated congestion pricing program with vehicle tolling, parking pricing, and transit pass components.

In June 2011, the Planning Commission and TIDA jointly certified the Final Environmental Impact Report for the TI/YBI Development Project, and in addition the BOS approved a Disposition and Development Agreement (DDA) between TIDA and Treasure Island Community Development, LLC (TICD) and approved the TITIP. In October 2011, through Resolution 12-16, the Transportation Authority Board and TIDA Board recommended that the BOS designate the Transportation Authority as the TIMMA and authorized a partnership Memorandum of Agreement (MOA) between the Transportation Authority and TIDA. TIDA and the Transportation Authority have signed annual operating MOAs since Fiscal Year 2011/12 to establish the budget and scope of work for TIMMA activities.

#### Project Organization

The various entities involved in the implementation of the TITIP and their respective roles and responsibilities are described below:

**Role of the TIMMA:** AB 981 provides the TIMMA with the exclusive powers necessary to implement the Transportation Program in furtherance of the goals described below:

1. Develop a comprehensive set of Transportation Demand Management (TDM) programs to encourage and facilitate transit use and to minimize the environmental and other impacts of private motor vehicles traveling to, from, and on Treasure Island.
2. Manage Treasure Island-related transportation in a sustainable manner, to the extent feasible, with the goal of reducing vehicle miles traveled and minimizing carbon emissions and impacts on air and water quality.
3. Create a flexible institutional structure that can set parking and congestion pricing rates, monitor the performance of the transportation program, collect revenues, and direct generated revenues to transportation services and programs serving Treasure Island.

4. Promote multimodal access to, from, and on Treasure Island for a wide range of local, regional, and statewide visitors by providing a reliable source of funding for transportation services and programs serving Treasure Island that will include bus transit service provided by the San Francisco Municipal Transportation Agency (SFMTA) and Alameda and Contra Costa Transit Agency (AC Transit) as well as ferry service and a local shuttle.

Key components of these goals are the ability to establish a congestion pricing and mobility enhancement program which includes:

1. Recommending to the BOS an initial fee structure for the imposition of congestion pricing fees and modifying the fee structure as necessary thereafter;
2. Administering and collecting congestion pricing fees on Treasure Island;
3. Adopting a transit voucher fee structure applicable to residents and other users of Treasure Island and administer and collect all Treasure Island transit voucher fees;
4. Expending revenues for implementation, operation, collection and enforcement, maintenance, construction, and administration activities;
5. Entering into operating contracts with AC Transit, Water Emergency Transportation Authority (WETA), and an on-Island shuttle provider for transit services for the area;
6. Applying for, accepting and administering state, federal, local agency, or other public or private funds for transportation purposes;
7. Undertaking studies, performance evaluations, and monitoring activities; and
8. Adopting and administering the transportation program, implementing rules and regulations, collecting and administering generated revenues, and taking all other steps necessary to implement the transportation program.

TIMMA will continue to conduct community outreach in support of the Mobility Management Program throughout the planning, design and implementation phases.

**Role of TICD:** TICD will build most of the transportation infrastructure and will provide operating subsidies to carry out the transportation program in the initial phases of the Mobility Management Program when the revenues from non-residential parking and congestion pricing are not yet at levels to sustain transit service to Treasure Island. The DDA, between TIDA and TICD, requires that TICD contribute a \$30,000,000 subsidy, expressed in 2010 dollars, to the Mobility Management Program. In addition, if, after Treasure Island is 50% occupied and less than 50% of off-Island trips during the peak period are made by modes other than auto, the DDA requires that TICD contribute an additional \$5,000,000 in subsidy to support the Transportation Program.

**Role of TIDA:** TIDA will administer the TICD subsidy, as described above, for Transportation Program activities during the occupancy period, as well as enter into contracts, either with the Transportation Authority prior to the formation of the TIMMA or with the TIMMA after its formation, to carry out pre-occupancy Transportation Program activities. TIDA will also oversee the design review, approval, and construction of transportation infrastructure, and will coordinate with the TIMMA on these plans.

**Role of SFMTA:** SFMTA will be responsible for activities reserved to it in Article 8A of the Charter and unaffected by AB 981, as well as activities which may be assigned to the TIMMA under AB 981 but which the parties agree are appropriate to continue being performed by SFMTA, including:

- Authority to set parking rates for on-street and off-street parking and to set parking fines and penalties.
- Authority to provide SFMTA bus service on Treasure Island and establish, collect, and enforce SFMTA transit fares.
- Authority to regulate taxi service.
- Authority to adopt regulations that control the flow and direction of motor vehicle, bicycle and pedestrian traffic, including regulations that limit the use of certain streets or traffic lanes to categories of vehicles and that limit the speed of traffic.
- Authority to design, select, locate, install, operate, maintain and remove all official traffic control devices, signs, roadway features and pavement markings that control the flow of traffic with respect to streets and highways within City jurisdiction.
- Authority to adopt regulations limiting parking, stopping, standing or loading as provided by state law, and to establish parking privileges and locations subject to such privileges for categories of people or vehicles as provided by state law.
- Authority to establish policies regarding and procure goods and services for the enforcement of regulations limiting parking, stopping, standing or loading, and the collection of parking-related revenues and, along with the Police Department, have the authority to enforce parking, stopping, standing or loading regulations.

#### Scope of Services

The Transportation Authority, as the TIMMA, will provide oversight of the System Engineering Manager's work. The System Engineering Manager will be responsible for conducting all the work activities listed below including providing expertise to assist TIMMA and project partners TIDA and TICD in advancing the toll technology congestion pricing element of the TITIP. Specific tasks related to the toll technology elements include refining the definition of the system, developing the operating parameters of the system and providing support toward the development of the contract / bid documents necessary to procure a system integrator. Technical input will be provided through a project Technical Advisory Committee (TAC). Partner Agencies that will be invited to participate on the TAC include the Bay Area Toll Authority (BATA), WETA, AC Transit, SFMTA and Caltrans. TAC meetings will be led by Transportation Authority staff. It is anticipated that the System Engineering Manager will present updates on deliverables at TAC meetings.

The services under this contract will build on significant community outreach, stakeholder involvement, and current and previous planning efforts.

**The budget for this effort is for an amount not to exceed \$1,210,000 for Phases I, II and III.** Please note that this is a ceiling and not a target.

Scope of Work: Tasks will proceed in phases pending the authorization of annual TIMMA budgets. Since funding for all tasks has not been identified at this time, the scope of work will be delivered in multiple phases as funding becomes available and key decisions are confirmed by stakeholders. It is also important to note that other design and construction projects are actively being implemented on Yerba Buena and Treasure Islands which may impact the scope and schedule of Mobility Management Program implementation. Therefore, system management services for the Mobility Management Program will be delivered in the following phases:

<b>Phases/Tasks</b>	<b>Budget</b>	<b>Schedule Start Date</b>
Task 1*		Ongoing
Phase I: Tasks 2 and 3	\$250,000	November 2014
Phase II: Tasks 4, 5 and 6	\$600,000	January 2017
Phase III: Task 7	\$360,000	October 2017
Phase IV: Task 8	\$225,000	September 2019

\*Each phase of the System Engineering Manager effort will require a new and/or updated project management plan, as needed, to ensure effective project management, budget and schedule adherence, and the delivery of quality products from this contract. Costs associated for this effort will be incorporated in each phase.

Additional Follow-on Work: If the Transportation Authority determines in its sole and absolute discretion that the selected consultant has performed Phase I satisfactorily and funding is available, Phase II will immediately follow Phase I as a continuation of the Treasure Island Mobility Management Program System Engineering Manager Project. If not, the Transportation Authority reserves the right to re-procure and to select a different contractor for Phases II, III and IV. Authorization for future phases of work will be at the Transportation Authority's sole and absolute discretion and will be by amendment to the consultant contract.

The total budget for this contract will be negotiated but not to exceed \$250,000 for Phase I, \$600,000 for Phase II, \$360,000 for Phase III and \$225,000 for Phase IV.

Specific Tasks under this contract include the following:

**Task 1** – Administration and Project Management

**Task 2** – Refinement of System Concept

**Task 3** – Development of Concept of Operations (Con-Ops) and draft System Engineering Management Plan (SEMP) documents and support of the Transportation Authority in the development of related policy, business rules and definition of roles and responsibilities

**Task 4** – Draft System Requirements, Preliminary System Design, and Finalize Systems Engineering Management Plan

**Task 5** – Development of civil design requirements and coordination of final design

**Task 6** – Develop the System Integrator RFP and Assist in the System Integrator Selection Process

**Task 7** – System Integrator contract technical oversight

**Task 8** – Provide Operations Support (*Optional Task*)

Separately from the tasks identified above, proposers may suggest changes/additions/subtractions to the task descriptions and the division of responsibility between the Transportation Authority, and the consultant team as part of their proposal, but this should be stated clearly. The Transportation Authority is interested in establishing an efficient process that utilizes both in-house and consultant

expertise. Any changes to the proposed scope and division of responsibility should result in all desired deliverables in a manner that successfully advances Mobility Management Program implementation. The specific System Engineering Manager tasks and responsibilities are detailed below.

**Task 1: Administration and Project Management.** The purpose of this task is to ensure a smooth workflow and timely completion of the Mobility Management Program. This task will include the following subtasks:

**1.1 Project Management Plan.** The purpose of this task is to develop the project management plan that will at a minimum include the following: Team organization and responsibilities; identification of contact person and schedule showing timeline for deliverables; resource and schedule management. The schedule should allow at least seven (7) working days for Transportation Authority staff to review the draft version of all deliverables. All final versions of the deliverables shall be available in electronic, editable format (native files when the software is compatible with those of the Transportation Authority's, such as Microsoft Word, PowerPoint, travel demand forecasting model, etc.)

*Deliverable: Project Management Plan.*

**1.2 Monthly Activity Reports and Invoices.** The System Engineering Manager shall provide status of the work efforts in monthly activity reports and invoices submitted to the Transportation Authority. Monthly activity reports shall be prepared and attached to the invoices documenting the work effort during the billing period, tasks to be accomplished over the next thirty (30) days as well as any anticipated challenges and issues, and potential methods for resolution. If no invoice is submitted for a particular month, the contractor is still required to submit the monthly activity report.

*Deliverable: Monthly Progress Reports and Invoices.*

**1.3 Progress Meeting.** The System Engineering Manager shall set-up and lead bi-weekly meetings with the Transportation Authority staff in order to ensure timely delivery of the work product and the effective coordination of all tasks.

*Deliverable: Coordination and management of bi-weekly progress meetings and documentation of project decisions and action items in minutes.*

**1.4 Project Kick-Off Meeting.** The System Engineering Manager shall conduct a project kick-off meeting with Transportation Authority staff and the TIMMA team at the beginning of each phase of the project to ensure effective coordination of the work effort.

*Deliverable: Attendance at one (1) project kick-off meeting at the initiation of each project phase and documentation of project decisions and action items in minutes.*

## PHASE I

**Task 2: Refinement of System Concept.** The purpose of this task is to refine the definition of the tolling system, the relationship between the tolling system and the SFMTA-owned and operated parking pricing system; evaluate operating parameters for the systems that have been assumed in the preliminary planning work; and describe the level for which these systems will be integrated (both financially and technically).

This task will include the review of the planning documents developed to date including the TTTIP, the Study currently underway, and the draft policy assumptions that have been developed.



Key elements of this task will be to confirm the level of integration recommended for the parking pricing system, the tolling system, and to outline the institutional and technological framework for the development, deployment, and operation of the tolling system. The current assumption for the parking system on Treasure Island is that it will be managed by SFMTA and will be modeled after the SFPark System. After a review of the existing operating parameters and system requirements for SFPark, the System Engineering Manager will assist the Transportation Authority in the development of a strategy for coordinating the tolling systems with the SFMTA's implementation of the parking pricing system on Treasure Island. The strategy will recommend a framework for assumptions about the parking system operation and coordination of the parking pricing system and the tolling system.

This task will at a minimum evaluate and perform the following:

- Evaluate the current planning level system definition for the toll system that will be implemented on Treasure Island.
- Define tolling system.
- Coordinate the parking pricing system with the tolling system.

***Deliverable:** Draft and final tolling system and recommended strategy for coordinating the tolling and pricing systems.*

**Task 3: Development of Con-Ops Document and Preliminary System Development.** The purpose of this task is to define the operating concepts for the toll system, documenting how the system will be designed, constructed, operated, maintained, and administered. This task will include the development of the Con-Ops document and the draft SEMP.

Systems development work on this project will build on previously approved planning and development documents as well as planning work that is currently underway. Approved program documents include the Final Environmental Impact Report, the TITIP, and the DDA. Documents to be developed as part of the current Study include the preliminary capital and operating costs, preliminary toll policy, the draft and final project description, and partnership agreements with other operating agencies. These documents will be shared with the System Engineering Manager as they become available.

**3.1 Con-Ops Plan.** The Con-Ops will describe the elements of the system, how it will operate and will outline the roles and responsibilities of partner agencies. Key elements of the Con-Ops will include:

- Documentation of project goals and definitions.
- A description of the project organization and management structure from the planning phase through operations (roles and responsibilities for all partners in each phase).
- Identification of key milestones and decision points for each phase of development.
- Further definition of the physical and operational characteristics of the system to support a more detailed preliminary system design.
- Proposed facility conceptual design including location of toll zones.
- Operating concept for the system.
- Roles and responsibilities of key project partners and stakeholders for each phase of the project development, deployment, and operations.

- Technical requirements of the system.
- Revised capital and operating cost estimates.
- Approach to back-office processing and customer support.
- Approach to enforcement of the tolling system.
- Documentation of final toll policy.

***Deliverable:** Draft and Final Con-Ops Plan.*

**3.2 Draft System Requirements and Preliminary System Design.** Building on the Con-Ops document, this task will develop a more detailed definition of the system requirements. The system requirements to be defined will include the functional, performance, operational, data, administrative, maintenance, and interface requirements for the proposed system. Preliminary system design will be advanced sufficiently to define the scope of work that will be included in the System Integrator RFP. Final design will be completed by the system integrator. Preliminary design shall define approximate location of gantries and the necessary support systems including but not limited to electrical, structural, traffic and general civil engineering drawings.

***Deliverable:** Draft System Requirements and Preliminary System Design Document.*

- **Draft Work and Deployment Plan.** This task will develop a work and deployment plan that includes a schedule and plan for the installation of all equipment and an assessment of project risks. The plan will include schedules that identify the anticipated timing of equipment installation, field testing, and acceptance for all equipment and software deployed at the roadside, Toll Data Center (TDC) and Transportation Management Center (TMC). The plan will identify all critical milestones and define the roles and responsibilities for oversight of the installation. The plan will also include the steps and schedule for deploying the various civil elements required to support the deployment of the system.

***Deliverable:** Draft Work and Deployment Plan.*

- **Draft Operations and Maintenance Plan.** This task will develop a conceptual operations and maintenance plan using the system requirements developed in the previous task. This plan will document the strategies to operate, administer, and maintain the system. The plan will incorporate the recommendations from the Con-Ops document to define and describe support required from Transportation Authority staff, partner agencies, interagency and private contracted services as well as financial resources that will be required to effectively operate, administer, maintain, and monitor the system. The operating and monitoring strategies will support the data collection and system evaluation requirements of the performance and evaluation plan.

***Deliverable:** Draft Operations and Maintenance Plan.*

- **Draft Enforcement Plan.** This task will develop an Enforcement Plan that evaluates both technology based automated enforcement options as well as the use of law enforcement personnel for visual enforcement of the System. The Enforcement Plan will include an evaluation of capital costs associated with the installation of any required enforcement related equipment and/or construction of enforcement zones and will also evaluate the ongoing operational costs associated with the enforcement strategy.

***Deliverable:** Draft Enforcement Plan.*

- **Draft Performance and Evaluation Plan.** The TITIP identifies project goals and principles consistent with the multi-modal and sustainable community strategies defined in the Enforcement Plan. The strategies will be monitored regularly to evaluate Mobility Management Program effectiveness based on agreed upon performance measures for the congestion pricing and travel demand strategies and to guide the management of the system to best meet the needs of residents and visitors to Treasure Island. The Performance and Evaluation Plan will identify the process and procedures for collecting and reporting the results of the monitoring activities specific to the tolling and parking elements of the program. The system should be developed to accommodate automated evaluation and monitoring capabilities to the fullest extent that is financially and operationally possible.

*Deliverable: Draft Performance and Evaluation Plan.*

- **Stakeholder and TAC Meetings -** The Transportation Authority will seek input from key project stakeholders throughout the System Development process. This Task will include attendance at quarterly stakeholder and TAC meetings to review project status and deliverables.

*Deliverable: Attendance at quarterly stakeholder and TAC meetings.*

## Phase II

**Task 4: Draft System Engineering Requirements, Preliminary System Design, and Finalize Systems Engineering Management Plan.** This task will involve developing the toll system requirements, determining the overall toll system design and operations, and finalizing the System Engineering Management Plan (SEMP).

**4.1 Draft System Engineering Requirements and Conceptual Design.** Building on the Concept of Operations (ConOps) document, this task will develop a more detailed definition of the toll system requirements. The toll system requirements to be defined will include the functional (and testable), performance, operational, administrative, maintenance, and interface (internal and external) requirements for the proposed electronic toll system (ETS). Preliminary system design will be advanced sufficiently to define the scope of work and associated costs that will be included in the System Integrator RFP. Final toll system design will be conducted by the System Integrator. Conceptual design shall define the approximate location of all toll gantries, lane controller cabinets, dynamic message signs (DMSs), CCTV camera poles, and all necessary ETS support equipment and subsystems including, but not limited to electrical, structural, traffic and general civil engineering drawings.

*Deliverable: Draft System Engineering Requirements and Conceptual System Design Document*

**4.2 Develop Final SEMP.** Under this task, the draft SEMP, which was developed during Task 3, will be finalized. In addition to making required revisions to the draft SEMP, the following sections will be developed and incorporated into the final version of the SEMP:

- **System Testing.** This section of the SEMP will provide an overview of how the toll equipment and systems, which will be developed by the System Integrator, will be tested. The test plans will consist of Factory Acceptance Test (FAT), pre-Go Live Field Test, and the Systems Acceptance Test (SAT).
- **Training Plan.** This section will provide an overview of the System Integrator required training for each of the discrete major subsystems of the system, including, Toll Data Center

(TDC) operators, TDC audit, Regional Customer Service Center (RCSC) interface and data reconciliation, system enforcement (including CHP officers), and ETS maintenance.

**Deliverable:** *Final SEMP*

**4.3 Business Rules.** This Task will include the development of ETS and operational business rules that describe how various scenarios should be handled by the ETS, the RCSC, the CHP, Caltrans and other external agencies. The business rules will build on the adopted Transportation Authority toll policies and the information presented in the Con-Ops to define how day-to-day operations will be carried out including transaction processing, trip building, violation processing, RCSC customer account processing, etc. The business rules will be developed to be as consistent as possible with previously developed ETS rules by other toll agencies in the Bay area.

**Deliverable:** *Draft and final business rules*

**Task 5: Development of civil design requirements and coordination of final design.** For this Task the System Engineering Manager is required to develop the civil design requirements for the toll system, obtain necessary permits for the installation of the toll equipment and coordinate the toll system final design with the civil components of the project.

**5.1 Coordinate with the Transportation Authority, TIDA, and their consultants and contractors.** This task covers the activities associated with coordinating with the Transportation Authority, TIDA and their consultants and contractors to gather information on their designs and construction activities on YBI/TI in order to support the integration of the tolling system into the ultimate configuration of YBI/TI. This task covers the coordination and review activities associated with integrating the civil infrastructure required to support future tolling equipment into the existing Transportation Authority construction contracts and TIDA's ongoing design packages.

**5.2 Prepare design requirements and specifications for the civil infrastructure to support toll equipment all toll locations.** Performance specifications for the toll equipment will be provided to the design teams responsible for the design of the remaining toll locations.

**Deliverable:** *Design performance specifications for civil infrastructure to support toll equipment at other toll locations.*

**5.3 Prepare design for YBI/TI and Bay Bridge tolling signs and obtain approved CT encroachment permit.** Designs for sign panel overlays on the Bay Bridge will be prepared and an encroachment permit will be obtained by preparing final design plans that will be circulated through the Caltrans District 4 permit engineer's office. In addition, tolling sign designs will be prepared as necessary for locations on YBI and TI. The YBI/TI signs will be circulated to TIMMA, TIDA, and DPW for review and approval.

**Deliverables:**

- 65% Plans and Estimate (P&E) for Bay Bridge signs
- 100% P&E for Bay Bridge signs
- Approved Caltrans District 4 permit application (PEER)
- 65% P&E for City road signs
- 100% P&E for City road signs

**Task 6 Develop the System Integrator RFP and Assist in the System Integrator Selection Process.** This task will involve the development of the ETS RFP for the System Integrator and support the Transportation Authority during the procurement effort for this contract.

**6.1 Develop the System Integrator RFP.** Under this task, the approved system operating concept and system requirements, as well as the final version of the SEMP and ConOps, will be used as the foundation to define the detailed functional design of the Mobility Management Program ETS. This design will be stated in the form of functional and performance requirements and incorporated into the System Integrator RFP. The RFP will be utilized to ensure that the chosen System Integrator designs, develops, integrates, tests, installs, implements, and maintains the ETS per the RFP requirements while achieving the TITIP goals. The following are examples of the requirements that would be presented clearly to the prospective bidders in the RFP

- Interoperability requirements including recommended consistency with other regional toll systems and the RCSC;
- Toll system requirements for roadside equipment and subsystems, including toll zone controller hardware/software, FasTrak AVI equipment, violation enforcement system (VES) equipment, transaction processing, automatic vehicle detection and identification, CCTV cameras, communications equipment, dynamic message signs, etc.;
- Central processing system (IDC) requirements including data management software and hardware, account management, traffic and revenue reports, and other financial functions;
- Performance requirements including transponder and vehicle detection read accuracy, license plate image capture, and false read processing;
- Software requirements, including intellectual property (IP) ownership, rights to the delivered source code, how the Transportation Authority would be granted a perpetual license to utilize the software (or how they will become owners of the source code), software maintenance procedures, etc.;
- System design, development, integration and testing at the factory and field levels, equipment installation and technical support (operations and maintenance) during Go Live and through the Warranty Period, etc.;
- System maintenance requirements, including roadside equipment/software and off-site technical support;
- Program milestones and acceptance requirements;
- Design-Build contract drawings and specifications for all capital improvements; and
- Operational requirements, including all external interfaces with other project stakeholders.
- The RFP would also clearly specify, at a minimum, the following requirements:
  - ETS procurement approach, including proposal development, RFP questions and answers, pre-bid, addenda, selection criteria, interview, BAFO, and negotiation process requirements;
  - System delivery schedule;
  - Project management approach;
  - Bid, performance and maintenance bonds;

- System and capital improvements design and review process;
- Test requirements;
- Training requirements;
- Documentation requirements;
- Software escrow requirements;
- Liquidated damages, including program delivery specific and maintenance;
- Program milestones and system acceptance requirements; and
- Payment process.

***Deliverable:** Draft and Final System Integrator RFP*

**6.2 Assist in the System Integrator Selection Process.** This task includes providing technical support to the Transportation Authority during the procurement process beginning with the toll industry outreach effort through to issuance of notice-to-proceed (NTP) to the selected System Integrator. This task is anticipated to include, at a minimum, the following tasks:

- Identify prospective System Integrators that should be invited to the toll industry outreach and provided with a copy of the RFP;
- Assist the Transportation Authority in the toll industry outreach activities, including developing any required outreach documentation, prior to release of the final RFP;
- Develop draft answers to RFP questions that are received from prospective bidders;
- Provide technical support to the Transportation Authority during the RFP addenda development process;
- Coordinate and, if required, lead the pre-bid conference and develop supporting materials as needed;
- Provide assistance to Transportation Authority staff in the development of objective evaluation and scoring criteria consistent with selection requirements (this process would also be clearly defined in the RFP);
- Review and evaluate the technical and cost proposals that are received, develop a proposal evaluation findings document, and advise the Transportation Authority's evaluation committee during the System Integrator shortlist process. Assist in the development of questions to be posed shortlisted firms during the interviews.;
- Assist the Transportation Authority during the pre-interview process and attend the interview as a technical and contractual resource;
- Assist the Transportation Authority during the BAFO process and participate in the contract negotiation process with the selected System Integrator; and
- Review the draft and final versions of the System Integrator contract documents and the NTP letter that will be prepared by the Transportation Authority.

***Deliverable:** Technical support during the System Integrator selection process*

**Task 7 System Integrator Contract Technical Oversight.** This task will involve close monitoring of the System Integrator activities during the ETS design, development, integration, testing, installation, deployment, operations support and maintenance on the project. During this task the System Engineering Manager will participate in all facets of the project, working closely with Transportation Authority and System Integrator personnel. If required, the System Engineering Manager will assume the role of contractual approver of all work that is performed by the System Integrator.

**7.1 Integration Management.** This task will include management of all ETS integration activities specified in the System Integrator RFP and contract performance requirements including, but not limited to, the following:

- Outline the project responsibilities and develop lines of communication with all project members.
- Schedule and coordinate routine project status meetings with the System Integrator to ensure that all project requirements are being met and they are adhering to their project schedule.
- Develop meeting agendas and minutes of each meeting.
- Review, comment, and approve System Integrator deliverables, including, at a minimum:
  - Project management plan;
  - QA/QC plan;
  - Preliminary and final ETS design documents (a detailed list of required documents will be presented in the RFP);
  - Software development and integration plan;
  - Communications plan;
  - Factory and field test plans;
  - Enforcement plan;
  - Interface requirements plan for other entities, including the RCSC, the CHP for system enforcement, the Caltrans TMC, SFPark, TIDA, and other regional toll agencies;
  - Training plan;
  - Installation plan;
  - System performance test plan; and
  - Maintenance Plan.
- Manage, prioritize, and resolve technical and contractual issues with the System Integrator.
- Manage the System Integrator contract change order process.
- Attend all System Integrator testing activities and develop test reports that will be shared with Transportation Authority and System Integrator staff.

***Deliverable:*** *Coordinate all project activities and review and approval of all System Integrator submitted documentation*

**7.2 Project Schedule Management.** Complete all tasks necessary to review and maintain the System Integrator baseline schedule, including tracking the critical path, deliverables, key decision points, and evaluating potential risks to the schedule. Activities would include, at a minimum:

- Review and approve the System Integrator base project schedule;
- Periodically (perhaps on a monthly basis) review the System Integrator project schedule to ensure that they are meeting all of their scheduled activities;
- Identify key milestones and communicate these items to Transportation Authority staff and advise if there are any schedule items that are falling behind;
- Manage schedule risk. Proactively identify schedule risks, recommend mitigation strategies, and document these in the risk register;
- Implement proper corrective measures to bring the schedule back on-line, including requesting the System Integrator to allocate more (or better) resources to the project; and
- Provide a monthly written update of the System Integrator project schedule during project status meetings.

***Deliverable:** Approve base project schedule, track all updates and identify schedule risks*

**7.3 Risk Management.** The purpose of this task is to proactively identify project risks including technical, schedule, contractual, quality and resources. For this task, the System Engineering Manager will develop a risk matrix, risk mitigation strategy and monitor and maintain a detailed risk register.

***Deliverable:** Develop draft and final Risk Matrix and routinely monitor/update all project risks*

**7.4 System Integrator Budget Management.** This task includes the management of the System Integrator's project budget. System Engineering Manager staff will review all submitted invoices and make recommendations for payment by the Transportation Authority. The System Engineering Manager will also review all requested contract change orders and either approve them or request the Integrator to provide more detailed information until the change order request is justified. Furthermore, System Engineering Manager will perform budget control activities such as evaluation of available funding for contract changes or project delays and recommend remedies as required and becomes necessary.

***Deliverable:** Track System Integrator invoices and contract change orders*

**7.5 Periodic Tolling Policy Review.** The System Engineering Manager will routinely coordinate with the Transportation Authority during the course of the System Integrator project and identify and institute any changes to the adopted toll and operating policies and business rules that may be required.

***Deliverable:** Periodically review and update policies and business rules*

**7.6 Testing Process.** The System Engineering Manager will oversee, manage, and participate in all the ETS tests, including the FAT, the pre-Go Live field tests and the SAT.

***Deliverable:** Review and approve all System Integrator developed test scripts*

**7.7 Oversight of Equipment Installation and Integration.** The System Engineering Manager will monitor the installation of all equipment/software, the integration of all subsystems and the System Integrator pre-Go Live testing prior to opening of the new toll facility. Tasks would include, at a minimum:

- Review of System Integrator's installation plans and drawings;



- On-site inspections of the actual installation work;
- Coordinate work with partner agencies and stakeholders including SFMTA, TICD, Caltrans, and BATA as appropriate;
- Work with the System Integrator to secure an encroachment permit;
- Monitor, and possibly participate in, System Integrator testing throughout the installation and integration phases of the project to ensure that all equipment and software is operating consistent with all of contract requirements;
- Coordinate with project partners and stakeholder on communications, outreach, and public education prior to the opening of the new toll facility;
- Review operations and maintenance protocols prior to Go Live;
- Develop a transition plan to ensure that Go Live is a seamless process to the motoring public and Transportation Authority staff; and
- Monitor System Integrator training of TIMMA staff to ensure that all operations staff are ready for Go Live.

***Deliverable:*** *Oversee the System Integrator equipment installation, integration, testing and training activities*

#### Phase IV

**Task 8 (optional): Provide Operations Support.** If required by Transportation Authority, the System Engineering Manager will continue to support the project by performing this optional task which includes the following:

- Review of system operations;
- Review the pricing functionality of the system;
- Review and reconcile all transaction and financial reports that detail funds to be paid to the TIMMA;
- Access toll lane customer FasTrak information when issues arise that require this type of account investigation;
- Hold discussions with the BATA RCSC operations manager, as required;
- Using the CCTV subsystem, observe tolling and enforcement operations;
- Review and provide inputs to the law enforcement system enforcement protocol;
- Periodically check the CCTV streaming video process to the system management center;
- Participate in any marketing programs and/or activities;
- Coordinate with the system integrator maintenance supervisor and technicians to make sure that Maintenance On-Line Management System (MOMS) identified problems are resolved within the time periods presented in the RFP;
- Carefully plan with Public Works staff and closely monitor any roadway maintenance activities that may impact the system; and

- Monitor the system preventive maintenance schedules to ensure that the system equipment/software maintenance is being conducted properly.