

THIS PRINT COVERS CALENDAR ITEM NO.: 14

**SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY**

DIVISION: Transit

BRIEF DESCRIPTION:

Authorizing the Director of Transportation to issue a Request for Proposals for Contract No. SFMTA-2022-40 FTA for a Communications-Based Train Control System (CBTC) and Related Professional Services, to solicit proposals from qualified CBTC vendors, and to implement a negotiated procurement process to evaluate proposals, select a vendor, and negotiate a contract to procure a CBTC system and related support services for a contract term of 18 years with two five-year extension options, for a total contract term not to exceed 28 years.

SUMMARY:

- The SFMTA operates the Muni Metro light rail system, which includes dedicated subways controlled by an outdated loop cable-based Automatic Train Control System (ATCS) that first went into service in 1998 and has reached the end of its useful life.
- The SFMTA seeks to issue a Request for Proposals for a Communications-Based Train Control (CBTC) system to replace the ATCS, which will leverage significant technological advances in train control that will enable the SFMTA to operate its rail service with greater reliability, reduced delays, and increased passenger capacity.
- The CBTC system will also extend train control territory to the surface portions of Muni's rail network, to provide comprehensive train control for all light rail operations.
- The Board of Supervisors has by ordinance authorized the SFMTA to procure a CBTC using negotiated procurement procedures similar to those used to procure transit vehicles, and to negotiate a contract with term for more than 10 years. The SFMTA will separately contract for wayside and vehicle equipment installation, and for a project consultant that will provide to SFMTA technical assistance, and project management and construction management services.

ENCLOSURES:

1. SFMTAB Resolution
2. Funding Plan
3. RFP and Sample Agreement Documents

APPROVALS:

DATE

DIRECTOR  January 11, 2023

SECRETARY  January 11, 2023

ASSIGNED SFMTAB CALENDAR DATE: January 17, 2023

PURPOSE

Authorizing the Director of Transportation to issue a Request for Proposals for Contract No. SFMTA-2022-40 FTA for a Communications-Based Train Control System (CBTC) and Related Professional Services, to solicit proposals from qualified CBTC vendors, and to implement a negotiated procurement process to evaluate proposals, select a vendor, and negotiate a contract to procure a CBTC system and related support services for a contract term of 18 years with two five-year extension options, for a total contract term not to exceed 28 years.

STRATEGIC PLAN GOALS AND TRANSIT FIRST POLICY PRINCIPLES

The Project will support the following SFMTA Strategic Goal:

- Goal 9: Fix things before they break, and modernize systems and infrastructure.

The Project will support the following City Transit-First Policies:

- To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.
- Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety.

DESCRIPTION

CBTC Project Background

The SFMTA Muni Metro system currently relies on an Automatic Train Control System (ATCS) to operate trains in the 7-mile Market Street Subway and the new 1.6-mile Central Subway. All but one of Muni’s rail lines merge into the dual-track Market Street Subway, so trains must move quickly through the tunnel to maintain vehicle flow and headways on the branch lines. While many other light rail systems in the United States still operate using older, fixed-block train control systems, Muni was an early adopter of sophisticated loop-cable based ATCS technology. In service since 1998, the ATCS enables safe, high-frequency service in the core of Muni’s light rail network and is the backbone of rail service delivery. However, ATCS technology is now outdated, and Muni’s ATCS is at the end of its useful life. The ATCS has caused an increasing number of delays to Muni’s rail service due to daily communication failures, train timeouts and component failures.

Upgrading Muni’s train control system is the infrastructure investment that will provide the greatest improvements to rail service. Replacing the ATCS with a state-of-the-art Communications-Based Train Control (CBTC) system will maintain the excellent safety record of the current system, while also increasing the subway’s efficiency and reliability. In addition to controlling trains in the subways, a CBTC will operate along surface trackways to coordinate train movements with street traffic signals, manage surface junctions, vary vehicle speed and dwell times to keep trains evenly spaced, speed train entry into tunnel portals, and will provide the SFMTA Transit Management Center with more effective oversight and management of the entire Muni rail network.

CBTC Advantages

Modern CBTC systems include several technologies that will deliver tangible benefits to Muni riders:

- *Centralized Network Management.* Muni Metro rail signal and interlockings on the surface are currently separate from the ATCS and operate on a first come, first serve basis. CBTC will establish a single network including both the surface equipment and the subways, which will enable the Agency to centrally control and manage all routes and trains anywhere in revenue service from the Transportation Management Center (TMC). Linking the surface and subway portions of the Muni Metro will reduce delays from trains waiting at junctions and portals, improving consistency of travel times and headways. Expanding train control supervision to the surface will also enable automatic speed and signal enforcement, enhancing safety for transit riders and other road users.
- *Wireless Communications.* CBTC will replace the ATCS's easily damaged analog signal loop-cable with a reliable wireless communications network. Wireless components are less fragile, simpler to install, and easier to maintain than the ATCS loop cable. Wireless access points will provide overlapping connectivity to virtually eliminate communication failures, ensuring trains are always in communication with the central system, and greatly reducing delays caused by noncommunicating trains (i.e., trains that have lost connection to the control system).
- *Modern Computers.* Train control systems rely on central, onboard, and wayside computers. The existing ATCS uses computers that are nearly 30-years old and were designed in the 1980s. Technology has advanced significantly since the ATCS was implemented; a new CBTC system will use modern, service-proven computers that will significantly improve system performance, communication, memory, and data handling.
- *Traffic Signal Integration.* The CBTC will connect to existing traffic signals, which will provide more reliable and effective traffic signal priority to rail transit vehicles. Improving transit signal priority will reduce delays caused by surface traffic and red lights, and will improve the consistency of Muni Metro service.
- *Service Management Tools.* CBTC systems offer a suite of tools to assist train controllers and operators in maintaining schedules and headways. A CBTC can be programmed to adjust the speed and dwell times of transit vehicles to optimize vehicle spacing, which will allow the Agency to increase the number of trains in service and decrease headways without compromising reliability or safety. On the surface, a CBTC can prioritize late-running trains by integrating train control with traffic signals, providing train operators (running on the surface in manual mode) with suggested speeds and dwell times, and provide train controllers with management tools to enforce schedules and headways.
- *Data and Diagnostics.* CBTC systems produce large amounts of performance data. Advanced data tools will allow staff to analyze that data and make better informed adjustments to service. CBTC components also have the ability to report their

operational status, and CBTC diagnostic features will allow maintenance staff to preemptively troubleshoot potential component failures. These features will greatly improve the overall reliability and maintainability of the system, ultimately improving transit service.

CBTC Project Goals, Contract Structure and Scope of Work

The SFMTA seeks a long-term partnership with a train control vendor in which the Agency and the vendor will work together to improve the reliability and performance of the Muni Metro through implementation, operation and maintenance of the vendor's state-of-the-art CBTC system. The SFMTA recognizes that a CBTC system will not be a static asset but must be adaptable to changes in transit operations and must be able to incorporate improvements in technology.

The SFMTA seeks to secure a single, negotiated contract for design, procurement, testing, commissioning, and long-term support of a state-of-the-art CBTC. The contract will be structured to provide incentives to the vendor deliver a CBTC with very high reliability by tying part of the vendor's compensation to its system performance and reliability, and the CBTC vendor will be required to update the CBTC as train control technology improves.

The SFMTA believes it will obtain better contract terms and prices if CBTC system support is included in the same contract as CBTC system procurement. CBTC systems are proprietary, meaning that the system software, system support, and much of the CBTC equipment can only be obtained from the system vendor under sole source contracts. The vendor has a significant advantage in negotiating such sole-source support contracts after its system is installed. In the past, City procurement regulations that limit the term of a contract to ten years have effectively prohibited combining procurement and long-term support in a single contract. But by ordinance passed on December 6, 2022, the Board of Supervisors authorized the SFMTA to use negotiated procurement procedures to procure a CBTC system with support services included in a contract with a 28-year term (which is the expected life of the system).

The CBTC contract will consist of two parts. The first part of the contract will cover CBTC design, procurement of software and equipment, oversight of equipment installation on light rail vehicles on trackways and in control rooms, system testing and certification, and will have a term of eight years. The new CBTC will be installed in phases corresponding roughly to each Muni Metro line to give the SFMTA beneficial use of the CBTC before it is fully installed on all rail lines, and to provide break points where the new system's performance and stability can be assessed. At the end of each phase, the CBTC vendor will test the CBTC to ensure that it meets performance, quality and safety standards and certify each portion of the system for revenue service. (See "CBTC Project Phasing", below.)

The second part of the proposed contract will require the CBTC vendor to provide system support, a supply of spare and replacement parts, trouble shooting and diagnostics, software updates, and related technical services to assist the SFMTA in maintaining and operating the CBTC for its entire expected 20-year life. The RFP requires the CBTC vendor provide regular software updates and security updates, and the negotiated contract will establish an obsolescence management plan to keep the CBTC system current. For the life of the contract, the CBTC vendor will maintain a two-year inventory of spare parts locally and replenish the parts as

necessary to maintain reliable transit service, which will act as an extended parts warranty. SFMTA maintenance crews will use the spare parts provided to perform preventative and corrective maintenance. The system support phase of the contract will have a base term of ten years, with two five-year extension options.

The SFMTA is strongly emphasizing CBTC system reliability, availability and maintainability, as selection criteria and contract requirements. The RFP establishes and defines performance metrics on which system reliability, availability and maintainability will be tracked. Proposers will submit values for these metrics in their proposals, which the Agency will use as scored selection criteria. The highest-ranking proposer's submitted performance values will be written into the contract as performance requirements. The SFMTA will include as part of its design reviews an evaluation of the capability of the design to deliver the promised performance. After each portion of the system is commissioned, it will go through a demonstration period to prove that it meets contract performance requirements. After the entire system is fully installed, the system vendor will provide support services. The system vendor's support service fees will be adjusted based on the system's performance, measured by the contract performance requirements. To maximize its fees, the CBTC vendor must provide a robust and reliable system, which must meet (or exceed) system performance requirements throughout the term of the contract.

SFMTA will contract separately for the installation of train control equipment on the wayside, central control, and on the light rail vehicles. The CBTC vendor will provide installation instructions, witness the installation of its equipment, and assume quality assurance and some construction management responsibilities with respect to the installers' work, with oversight provided by the SFMTA. At the end of installation, after acceptance by SFMTA, the CBTC vendor will inspect, test, certify, and ultimately guarantee the installation of the CBTC equipment.

CBTC Project Phasing

In managing the project, the SFMTA will seek to minimize risk and disruption to riders during installation, testing and commissioning activities. The Agency will implement the project in phases to minimize the risks associated with replacing the existing train control system while the system is in service, and provide a "learning curve" for operations and maintenance staff to become comfortable with the system while the CBTC vendor's technical experts are on-site. An initial Pilot phase will launch the CBTC on the surface along the Embarcadero and the northern half of the Third Street corridor to test the CBTC in service before it is installed in the subways. Following a successful Pilot, the CBTC system will be installed in the subways and the existing ATCS decommissioned. Installation will then branch out to each line on the surface until the entire Muni Metro rail system is in CBTC territory. Each phase will feature its own detail design and construction, allowing the design and construction of subsequent phases to overlap, improving the pace of delivery. The phases are planned as follows:

- Pilot phase: Embarcadero & 3rd to MME (3rd and Cesar Chavez)
- Subway replacement: Market Street Subway and Central Subway
- Surface expansion: N Judah (Duboce to Ocean Beach)
- Surface expansion: T Third (MME to Sunnydale)

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- Surface expansion: K & M Lines (West Portal to Balboa Park/Parkmerced)
- Surface expansion: J Church (Duboce to Balboa Park)
- Surface expansion: L Taraval (West Portal to Zoo)

CBTC Vendor Selection Process

Proposals will be evaluated by a committee comprised of staff from the SFMTA, other City departments, peer transit agencies, consultants, or external organizations with subject matter expertise. The committee will score each Proposal using predetermined selection criteria that emphasize and will select for system reliability through design, implementation, and ongoing revenue service support.

Negotiated procurement procedures will allow the SFMTA to have substantive, formal communications with proposers (as a group) after receipt of proposals. The SFMTA may then amend its CBTC system specifications and contract requirements to better align with available technology solutions, address cost-benefit issues, conform to market conditions, and to adapt to new information. If the SFMTA amends system specifications and contract requirements, proposers that have scored in the competitive range will be invited to submit revised proposals to respond to the amended requirements. The SFMTA will apply best value criteria to evaluate and rank the revised proposals.

After evaluating proposals, the Agency will invite the highest ranked proposer to negotiate a final contract, based on the terms and conditions stated in the sample contract (included with the RFP). The negotiated contract will be submitted for approval to the SFMTA Board of Directors, and then to the Board of Supervisors as required by Charter section 9.118.

2018 Request for Information and 2022 Industry Sounding

In 2018, the SFMTA released a Request for Information (RFI) to potential CBTC. The purpose of the RFI was to solicit vendor interest and determine the capabilities and offerings of modern CBTC systems. Eight vendors responded, suggesting a high level of interest. The SFMTA additionally released a follow-up RFI in July 2022 as an industry sounding to determine the viability of SFMTA's anticipated contract, technical, and legal requirements. After reviewing the responses, the SFMTA is confident that the project objectives and benefits listed above are attainable and thus have established them as guidelines for the performance requirements in this RFP. Due to mergers of system vendors and federal requirements, project staff anticipate that four vendors will submit proposals.

Small Business Enterprise Participation

SFMTA is committed to maximizing competition and business opportunities for Small Business Enterprise (SBE) and Disadvantaged Business Enterprise (DBE) firms (which include San Francisco Local Business Enterprise (LBE) firms). The project will issue multiple installation contracts. The SFMTA has identified control center and wayside equipment installation work as the largest opportunity to contract with SBE/DBE contractors and therefore expects SBE/DBEs would perform all of that work. The SFMTA anticipates the following SBE/DBE participation goals:

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- CBTC vendor contract: 5%
- Installation contracts: Up to 100% (preliminary)
- Consultant contract: Up to 15% (preliminary)

Tentative Procurement Schedule

- RFP Issuance: January 23rd, 2023
- Proposal Due Date: May 23rd, 2023
- Contractor selection: October 2023
- Award date: February 2024

STAKEHOLDER ENGAGEMENT

This project was initiated as a result of the report of the 2019 Muni Reliability Working Group, which made replacement of the train control system its top recommendation. The 2019 Muni Reliability Working Group was comprised of the SFMTA Board Chair, San Francisco Supervisors, the Mayor's Office, transit advocates, labor representatives, and outside transit experts.

The project team conducted extensive outreach to SFMTA staff from Transit Operations, Transportation Management Center, Fleet, Safety, Technology, Vehicle, Maintenance of Way, and Signal Maintenance groups, who provided input as to the scope of the project, and desired and required CBTC functionality. These stakeholders all identified reliability and maintainability as a priority for the new train control system. The procurement approach that combines system procurement with support services and uses system performance as selection criteria and a basis for vendor compensation was in part developed in response to stakeholder's concerns.

The project team has also given periodic briefings to the SFMTA and SFCTA Citizen's Advisory Committees, as well as MTC, SFCTA staff, and funding partners, and incorporated their feedback as appropriate. As the system is designed, the Agency will reach out to the communities and stakeholders who may potentially be impacted by wayside installation activities, and to transit riders.

In August 2022, the SFMTA Board established a Train Control Upgrade Project Committee to review and offer guidance to project staff concerning project objectives, scope, contracting approach, schedule and costs. The Committee has discussed and provided recommendations on project strategic objectives, contracting approach, and project risk assessment, and also has discussed train control systems used by peer agencies.

ALTERNATIVES CONSIDERED

The SFMTA considered the following alternatives to issuing this RFP:

No project. As a first alternative, the SFMTA would continue to invest resources necessary to maintain the existing ATCS system, keeping the system in a state of good repair for as long as

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possible. This approach would confer no additional operational benefits to the Agency and would likely increase operating costs, as ATCS parts have become increasingly scarce, and it is difficult and costly to maintain obsolete software. The ATCS is approaching the end of its useful life (30 years) and there are already periodic ATCS failures causing minor to moderate disruption. Continuing to use the existing system would likely lead to more frequent and severe failures, causing significant disruptions to subway service. It is possible that in the future the ATCS may completely fail and be unrepairable, at which point rail services would be seriously disrupted for a long period of time, and the Agency would need to replace it under a more urgent timeline and likely at greater cost.

Sole source procurement from incumbent vendor. As a second alternative, staff considered negotiating new contracts with the incumbent train control system vendor to upgrade the existing ATCS. Those contracts would be sole-source non-competitive procurements, because the ATCS is a proprietary system. This path is contrary to City and SFMTA policy to purchase new systems through competitive processes whenever possible and would likely not provide the best value or greatest improvements to Muni transit.

FUNDING IMPACT

The total estimated cost of the project including all contracts, SFMTA staff cost, contingency, and escalation is \$606,653,812 over the eight-year life of the project. Work planned for completion during the current Capital Improvement Program cycle (23-27) is fully funded. The total project is 49 percent funded. Work planned for completion in future CIP cycles will be funded through future CIP processes. Identified funds include a combination of regional, state, and federal grants. Enclosure 2 summarizes the funding sources for the project.

ENVIRONMENTAL REVIEW

On September 20, 2022, the SFMTA, under authority delegated by the Planning Department, determined that the proposed RFP is not a “Project” under the California Environmental Quality Act (CEQA) pursuant to Title 14 of the California Code of Regulations Sections 15060(c) and 15378(b).

A copy of the CEQA determination is on file with the Secretary to the SFMTA Board of Directors and is incorporated herein by reference.

OTHER APPROVALS RECEIVED OR STILL REQUIRED

On December 6, 2022, the San Francisco Board of Supervisors passed Ordinance #220947 authorizing the Municipal Transportation Agency to issue a Request for Proposals for a Communications Based Train Control System to be awarded by a contract with a term exceeding ten years; waiving the Administrative Code prohibition against issuing solicitations for a contract for general or professional services for a term longer than ten years; authorizing use of negotiated procurement procedures, stating that the award of the contract will be subject to the approval of the Board of Supervisors pursuant to Charter, Section 9.118(b); and adopting findings under the California Environmental Quality Act.

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The Civil Service Commission reviewed the procurement scope and the support scope of this contract separately. The Civil Service Commission approved Personnel Services Contract (PSC) requests No 41562 and No 42673 in connection with this contract.

The City Attorney's Office has reviewed this report.

RECOMMENDATION

Staff recommends that the SFMTA Board of Directors authorize the Director of Transportation to issue a Request for Proposals for Contract No. SFMTA-2022-40 FTA for a Communications-Based Train Control System (CBTC) and Related Professional Services, to solicit proposals from qualified CBTC vendors, and to implement a negotiated procurement process to evaluate proposals, select a vendor, and negotiate a contract to procure a CBTC system and related support services for a contract term of 18 years with two five-year extension options, for a total contract term not to exceed 28 years.

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. _____

WHEREAS, The SFMTA operates the Muni Metro light rail system, which includes both shared surface right of way and dedicated subways controlled by an outdated analog loop cable-based Automatic Train Control System (ATCS), which first went into service in 1998, and has reached the end of its useful life; and,

WHEREAS, The SFMTA seeks to issue a Request for Proposals for a Communications-Based Train Control (CBTC) system to replace the ATCS, which will leverage significant technological advances in train control that will enable the SFMTA to operate its rail service with greater reliability, reduced delays, and increased passenger capacity; and,

WHEREAS, The geographic layout of the Muni Metro rail network requires sophisticated management of rail traffic, especially as it relates to junctions and the transition between the surface portions of the network and the subways; and,

WHEREAS, A modern Communications-Based Train Control system will improve reliability, reduce delays, and increase the capacity of the Muni Metro, and will enable the SFMTA to centrally manage both surface and subway rail operations; and,

WHEREAS, The SFMTA seeks to negotiate a single contract with a term greater than 10 years for CBTC procurement and ongoing technical and system support for the expected 20-year life of the CBTC, which will consider system reliability, availability and maintainability as factors determining vendor compensation; and,

WHEREAS, Ordinance #220947, approved on December 6, 2022, authorizes the SFMTA to solicit proposals and use negotiated procurement procedures to purchase a CBTC with a contract term longer than 10 years; and,

WHEREAS, the Civil Service Commission approved Personnel Services Contract (PSC) request No 41562 in connection with the support portion of this contract and Personnel Services Contract (PSC) request No 42673 in connection with the procurement portion of this contract; and,

WHEREAS, On September 20, 2022, the SFMTA, under authority delegated by the Planning Department, determined that the proposed RFP is not a “Project” under the California Environmental Quality Act (CEQA) pursuant to Title 14 of the California Code of Regulations Sections 15060(c) and 15378(b); and,

WHEREAS, A copy of the CEQA determination is on file with the Secretary to the SFMTA Board of Directors and is incorporated herein by reference; now, therefore, be it

RESOLVED, That the SFMTA Board of Directors authorizes the Director of Transportation to issue a Request for Proposals for Contract No. SFMTA-2022-40 FTA for a Communications-Based Train Control System (CBTC) and Related Professional Services to solicit proposals from qualified CBTC vendors, and to implement a negotiated procurement process to evaluate proposals, select a vendor, and negotiate a contract to procure a CBTC system and related support services for a contract term of 18 years with two five-year extension options, for a total contract term not to exceed 28 years; and be it

FURTHER RESOLVED, That the SFMTA Board of Directors authorizes the Director of Transportation, in consultation with the City Attorney, to make nonmaterial corrections and changes to the RFP, sample contract, and appended documents, and to issue addenda to the RFP, as necessary to accomplish the purposes of this Resolution.

I certify that the foregoing resolutions were adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of January 17, 2023.

Secretary to the Board of Directors
San Francisco Municipal Transportation Agency

ENCLOSURE 2: PROJECT FUNDING PLAN

Funding Source	Prior to FY23	FY23	FY24	FY25	FY26	FY27	Future CIPs	Project Total
Operating Funds	\$2,095,000	-	-	-	-	-	\$8,000,000	\$10,095,000
Revenue Bond	\$5,405,000	\$11,672,882	\$23,922,118	-	-	-	-	\$41,000,000
General Fund	\$340,000	-	-	-	-	-	\$25,830,132	\$26,170,132
Transportation Sustainability Fee	\$10,000	-	-	-	-	-	\$8,785,609	\$8,795,609
Prop L	-	-	-	-	\$12,339,439	\$28,737,939	-	\$41,077,378
AB 664	-	-	-	-	-	-	\$7,490,752	\$7,490,752
STIP (Caltrans grant)	-	-	-	-	-	\$15,793,794	\$8,600,206	\$24,394,000
TIRCP (Caltrans grant)	-	-	-	-	-	\$28,364,282	\$72,211,718	\$100,576,000
SB1 (State of Good Repair)	-	-	-	-	-	-	\$30,000,000	\$30,000,000
FTA (Transit Capital Priorities)	-	-	\$6,014,161	\$40,010,884	\$45,918,992	\$73,057,122	\$152,053,782	\$317,054,941
Total	\$7,850,000	\$11,672,882	\$29,936,279	\$40,010,884	\$58,258,431	\$145,953,137	\$312,972,199	\$606,653,812



City and County of
San Francisco



**Request for Proposals for the
Design, Procurement, Support and Related Services for a
Communications-Based Train Control System**

RFP No. SFMTA-2022-40-FTA

**EVENT ID: SFGOV-[Insert the number generated by the FSP
Sourcing Event, e.g., #####.]**

(CCO No. 22-1584^(obj))

Date Issued: [Insert the date.]
Pre-Proposal Conference: [Insert the date & time.] PT
Deadline for Questions: [Insert the date & time.] PT
Proposal Due: [Insert the date & time.] PT

Contract Administrator: Kathy Larson
Principal Administrative Analyst
San Francisco Municipal Transportation Agency
Email: kathy.larson@sfmta.com

San Francisco Municipal Transportation Agency (SFMTA) Request for Proposals for a Communications-Based Train Control System

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I. Introduction

A. General

The San Francisco Municipal Transportation Agency (“SFMTA” or “Agency” or “Muni”) seeks qualified Proposers to provide Proposals for design, furnishment, integration, testing, Commissioning and long-term support of a state-of-the-art Communication-Based Train Control System (CBTC or System), covering the San Francisco Municipal Railway’s (Muni’s) entire 74-mile light rail network.¹

Most of the SFMTA’s rail network is on the surface, shared either with mixed-flow traffic or in semi-dedicated right-of-way with level crossings at each intersection. Currently, the SFMTA uses a Thales (formerly Alcatel) Seltrac-IS system that provides Automatic Train Control (ATC) in the 7-mile Market Street Subway and in the 1.6-mile long Central Subway. The SFMTA is seeking a Contractor to provide a CBTC System that will replace the existing ATC system and expand the SFMTA’s train control Capabilities to the surface, with greater reliability and maintainability than the existing ATC system.

The Contractor will design, furnish, integrate, test and commission CBTC Equipment to be installed in Muni’s Central Control locations and data centers, on wayside infrastructure and in SFMTA’s Siemens LRV4 vehicles. In addition, the Contractor will provide Software to operate the CBTC System, and then provide ongoing Support Services for the System for up to 20 years following the Final Acceptance of the System. Recognizing that a train control supplier will have the most expertise in maintaining and supporting a System of its design, the Contractor will provide in its Proposal a plan to deliver and support a highly reliable CBTC System that collaboratively integrates SFMTA and Contractor maintenance staff in a one-team approach to maintain that reliability for the life of the System.

SFMTA’s rail system has significant operational challenges owing to its design and physical layout, such as requiring that Vehicles transition in-service from a subway to an at-grade operating environment shared with road vehicles, and the convergence of all lines into a single subway. These structural issues require special operating procedures and practices to compensate for the physical restrictions of the Muni Metro and subway. This in turn demands a sophisticated train control and supervision system to maintain reliable operations despite regular disruptions, such as those caused by interactions with road vehicles, bicycles, or pedestrians, which can occur during service. As such, SFMTA places a premium on Reliability, Availability, and Maintainability (RAM) to keep train-control related delays and impacts to transit operations to a minimum, while maintaining the highest levels of safety. The SFMTA has the following objectives in implementing a new CBTC:

- Increase the capacity and throughput of trains of the Muni Metro system
- Maintain the high standards of safety currently provided by the ATCS in the subway and extend modern safety protections to surface operations

¹ Capitalized terms are defined below in Section I.I.

- Enable shorter, more consistent travel times and headways
- Provide a reliable CBTC that supports Muni Metro service at all times
- Support configurable and flexible service changes and contingency operations
- Continually update the new System to include the latest service-proven Hardware and Software.

During the Support Term, the Contractor will be responsible for the System's performance based on the targets stated in its Proposal. The Contractor will maintain and improve upon that performance by evolving the Functionality of SFMTA's CBTC System in sync with Contractor's Software and Hardware product lifecycles. The SFMTA intends to select the Proposer that commits to meeting the SFMTA's technical and Performance Requirements in a new CBTC that has a high level of reliability achieved through high-quality design, implementation and support that proposes a price that represents the best value to the Agency.

The Contractor will be responsible for providing replacement parts, Software modifications (including bug fixes, product-wide Software releases, security and compatibility updates, and enhancements), testing and on-site technical support, all of which will be compensated under a monthly fee. The amount of the monthly fee will vary in relation to System Performance, as measured relative to targets that the Proposer will propose, and as agreed in the Contract.

The Contractor will work closely with SFMTA maintenance and engineering staff to integrate the Proposer's Support Services for the System into SFMTA operations, maintenance, and Revenue Service activities. SFMTA staff will perform preventive and corrective maintenance according to the Proposer's specifications in order to ensure System reliability, while the Proposer will provide spare parts and technical support as defined in the Contract Specifications.

Issuance of Bid Documents:

RFP documents that are not Sensitive Security Information (SSI) may be obtained from the Contract Administration Division and downloaded from the SFMTA website at _____.

RFP Appendix L2 contains SSI. Appendix L2 must be obtained directly from the SFMTA and will only be provided to potential offerors that have: (1) demonstrated to the SFMTA that they meet the requirements of Minimum Qualification 1, Brownfield Experience; and (2) signed a Sensitive Security Information Confidentiality and Non-Disclosure Agreement. See Section IV.C.2 below for the description of the information that must be provided to satisfy the requirements of MQ1. Contact the SFMTA project manager for instructions on how to obtain SSI Documents for bidding at:

Kathy Larson
Principal Administrative Analyst
San Francisco Municipal Transportation Agency
Email: kathy.larson@sfmta.com

B. Relationship to Other Parties Working on the CBTC Project

The relationship between the various contractors necessary to deliver the System and the SFMTA is set out in the following Project Contracts Table.

Project Contracts Table

Contract	Firm	Scope
System Procurement and Support Services	Selected Proposer	Design, provide Equipment and Software, construction/installation oversight and management, QC, test and commission the CBTC System as specified in the Contract Documents. Provide technical support, parts, training, Software updates, testing as specified in the Contract Documents
System Installation	One or more Installers under separate contracts with SFMTA	Install central Equipment, wayside Equipment, communication/network Equipment and perform any other System installation work requiring a California contractor's license
LRV4 Installation	Separate Installer under separate contract with SFMTA	Install Proposer's onboard Equipment on LRV4 vehicles
Technical Services	Consultant under separate contract with SFMTA	Augment SFMTA engineering team, assist SFMTA with Project oversight

The Contractor will not perform any construction or installation work. The SFMTA will separately contract with one or more third-party construction contractors (Installers) to install System Equipment in SFMTA Central Control locations, data centers and on the wayside. The SFMTA will also separately contract to install the System onboard Equipment on the LRV4 vehicles. The SFMTA will contract with a Technical Services Consultant to assist the SFMTA engineering team and provide Project oversight support.

The Contractor will develop System installation specifications and designs that Installers will use to install Equipment. The Contractor will oversee Equipment installation, and will be responsible for construction and schedule management, and quality control (QC). The Proposer will work cooperatively with the SFMTA and its Installers to deliver the System within the schedule and budget.

While the SFMTA will be managing the separate contracts described above and will conduct its own project quality assurance (QA), the Contractor will implement the SFMTA's QA program and include the Installer(s) in the Contractor's own QC programs, overseeing all installation work and reporting findings to the SFMTA. The Contractor will inspect all completed installation work and certify that the work and Materials used to install the System meet Contract requirements. The Contractor will be responsible for the System's performance according to the Performance Metrics set out in the Agreement. Following installation, the Contractor will be responsible for testing and Commissioning. After Commissioning, the Contractor will be required to correct defects at no extra cost to the SFMTA beyond the Monthly Support Fee under the Contract.

The below table is provided to clarify key responsibilities in addition to those described above.

Roles and Responsibilities

Role	Organization	Responsibility
Provision of System	Contractor	Contractor will provide the CBTC System that satisfies the requirements in the Contract Specifications.
System Design & Procurement	Contractor	Design, procure and deliver Equipment and Software necessary to implement the CBTC System in accordance with the Contract Specifications.
Conduit & Fiber-Optic cable	SFMTA	Provide pre-installed (existing or new) conduit and fiber-optic cable based on approved design plans or schematics detailing required data connections provided by Contractor
System Installation Oversight and Management ²	Contractor	Oversight and management of the entire installation process.
System QA	Contractor and SFMTA	Establish, execute and enforce a QA program for System that supports the SFMTA QA plan; inspect and perform QA of installation work of System; identify deficiencies in installation work and notify the SFMTA; provide certification that installation of System was inspected and work was completed in accordance with the approved procedures, specifications and QA /QC program. Refer to the Section 5 (Quality Assurance and Quality Control) of the Contract Specifications for more detail.
System Testing and Commissioning	Contractor	Conduct testing and Commissioning of each Phase of the System to demonstrate compliance with the Contract Specifications; at the completion of testing, provide certification that System was tested and commissioned and that

² Contractor shall identify any other installation work not specifically identified in this table and promptly notify the SFMTA. The SFMTA shall determine who will be responsible for completion of that work. In general, SFMTA will be responsible for completion of installation work requiring a California contractor’s license.

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Role	Organization	Responsibility
		the System operates as specified in the Contract Specifications.
System Installation – Central Equipment Components	SFMTA using 3 rd party Installer	Install central Equipment components provided by Contractor in accordance with Contractor’s directions
System Installation – Wayside Equipment Components	SFMTA using 3 rd party Installer	Install wayside Equipment components provided by Contractor in accordance with Contractor’s directions.
System Installation – Communication and Network Equipment Components	SFMTA using 3 rd party Installer	Install communication or network Equipment provided by Contractor in accordance with Contractor’s directions.
Installation of System Components on LRV4	SFMTA using 3 rd party Installer	Install onboard Equipment components on LRV4 vehicle fleet in accordance with Contractor’s directions, with engineering support by Contractor.
Integration of LRV and System	Contractor	Integrate the LRV4 system (e.g. Train Operator’s Display, current train lines and current onboard Software) in order to certify that the System operates in accordance with the Contract Specifications; modifications to the LRV4 system may be subject to SFMTA approval.
Installation in Maintenance or Heritage Vehicles	Contractor	Install Equipment components on Maintenance or Heritage Vehicles, if option is exercised.
Modifications to CBTC System	Contractor	Modify the CBTC System to ensure full integration with other SFMTA systems, as approved by SFMTA, modify the CBTC System as necessary during testing and RAM Demonstration to ensure compliance with requirements in Contract Specifications
Information System Integration	SFMTA	Approve all technical design, including integrations. Management of integration into existing Agency information systems identified in the Section 28 (Interface Requirements Specifications) of the Contract Specifications.
Integration Assistance	Contractor	Provide APIs, ICDs or other information or assistance to support integration of the CBTC System with existing SFMTA systems or third-

Role	Organization	Responsibility
		party systems identified in Section 28 (Interface Requirements Specifications) of the Contract Specifications; support integration completed by others and work with SFMTA to test CBTC System integration with third-party systems.
Modifications to Third-Party Technology Systems	SFMTA	Provide APIs, ICDs to allow for integration; modification of third-party systems to accommodate the CBTC System.
Support Services	Contractor	Provide technical support, parts, training, Software updates, and further testing for each Phase after it receives Conditional Acceptance. Refer to Section 32 (Support Services) of the Contract Specifications for more information
First- and Second-Level System Maintenance	SFMTA	First- and Second-level Maintenance, as described Section 32 (Support Services) of the Contract.
Third-Level System Maintenance	Contractor	Third-Level Maintenance, as described in Section 32 (Support Services) of the Contract.
Operational Safety of the CBTC System	SFMTA	Engage the Independent Safety Assessor (Technical Services Consultant) and ensure compliance with regulations from the CPUC and the FTA.
Functional Safety of the CBTC System	Contractor	Develop, adhere to, and update the SSMP; provide certification and evidence to demonstrate that the System is designed, installed and tested as required by the Contract Documents and all relevant Code requirements, and that the System operates in a safe manner in accordance with those requirements.

C. Selection Overview

The SFMTA intends to award the Agreement to the Proposer that meets the Minimum Qualifications shown in Section III and whose Proposal receives the highest score after completion of the negotiated procurement process described in Section V and Appendix O of this RFP.

D. Anticipated Agreement Term

The Agreement is anticipated to have a term of 18 years. Final Acceptance of the CBTC is anticipated to occur eight years after Notice to Proceed, and the Support Term of the Agreement will continue for 10 years after Final Acceptance. The SFMTA will have two consecutive options to extend the Support Term for five years each, which it may exercise in its sole and absolute discretion, for a maximum anticipated contract term of twenty-eight years.

E. RFP Schedule

The anticipated schedule for this RFP is set forth below. These dates are tentative and subject to change. It is the responsibility of the Proposer to check for any Addenda to this RFP or other pertinent information posted in the City’s Supplier Portal at <https://sfcitypartner.sfgov.org/>

<u>Phase</u>	<u>Date</u>
RFP is issued by the SFMTA:	Jan 23, 2023
Pre-Proposal Conference:	Feb 22, 2023, 9:00 PT
Deadline for submission of written questions or requests for clarification:	May 1, 2023, 17:00 PT
Proposals due:	May 23, 2023 17:00 PT

F. City’s Social Policy Requirements

1. Proposers Unable to do Business with the City

Proposers that do not comply with laws set forth in San Francisco’s Municipal Codes may be unable to enter into a contract with the City. Laws applicable to this RFP are set forth below and in Appendix B (Sample Agreement).

2. Social Policy Provisions

The Sample Agreement (Appendix B) identifies the City’s applicable social policy provisions related to a contract awarded pursuant to this RFP. Proposers are required to review these terms and ensure they are able to comply with them.

G. City Supplier Registration

Proposer must become an “Approved Supplier” in order to enter into an Agreement with the City or SFMTA. Approved Suppliers are entities that have met all the compliance requirements necessary to conduct business with the City, such as business tax registration and Chapter 12B compliance.

The following requirements pertain only to Proposers not currently registered with the City as a Supplier.

Step 1: Register as a BIDDER at City’s Supplier Portal:

<https://sfcitypartner.sfgov.org/pages/index.aspx>

Step 2: Follow instructions for converting your BIDDER ID to a SUPPLIER ID. This will require you to register with the City Tax Collector’s Office and submit Chapter 12B and 12C forms through the Supplier portal. Once these forms have been completed, submitted, and processed, you will be notified via email with your organization's new Supplier ID. That email will also provide instructions for completing your Supplier registration.

- **City Business Tax Registration Inquiries:** For questions regarding business tax registration procedures and requirements, contact the Tax Collector’s Office at (415) 554-4400 or, if calling from within the City and County of San Francisco, 311.
- **Chapter 12B and 12C Inquiries:** For questions concerning the City’s Chapter 12B and 12C Equal Benefits and Non-Discrimination in Contracting requirements, go to: www.sfgov.org/cmd

H. Federal Contract Requirements and Restrictions

This Project is funded in part by a grant from the Federal Transit Administration, and this RFP and Agreement are subject to and incorporate federal contract requirements and forms. Proposers are required to meet the federal contract requirements set out in Appendix G and submit the required federal forms in Appendices C-E and I to this RFP.

The 2020 National Defense Authorization Act, Pub. L. 116-92 § 7613 (Dec. 20, 2019), added a new subsection (v) to 49 U.S.C § 5323 stating any recipient of federal public transportation funding that operates a rail fixed guideway public transportation system must “establish a process to develop, maintain, and execute a written plan for identifying and reducing cybersecurity risks” utilizing the approaches and best practices of both the National Institute of Standards and Technology Act and the U.S. Department of Homeland Security. Additionally, 49 U.S.C § 5323(v) requires the recipient to identify and determine Hardware and Software that “should undergo third-party testing and analysis to mitigate cyber security risks, such as Hardware or Software for rail rolling stock under the proposed procurement”. Specific requirements regarding cybersecurity are included in Section 6.4.3 (Cyber Security) of the Contract Specifications.

I. Definitions

The following terms used in this RFP, irrespective of capitalization, are defined below. For the definitions of additional terms used in this RFP but not listed herein, see Article 2 (Definitions) of the Sample Agreement and Section 1.4 (Definitions) of the Contract Specifications:

Agreement or **Contract** is as defined in Article 2 (Definitions) of the Sample Agreement.

Application Programming Interface (API) means a set of subroutine definitions, protocols, and tools for building application Software. An API allows two applications to talk to each other.

Automatic Train Control (ATC) means the system for automatically controlling train movement, enforcing train safety, and directing train operations. ATC includes ATP, ATO and ATS. Refer to IEEE 1474.1 as references in Section 7.5 (CBTC Performance and Functional Requirements) in the Contract Specifications.

Automatic Train Control System (ATCS) is as defined in Article 2 (Definitions) of the Sample Agreement.

Automatic Train Operation (ATO) means the subsystem within the ATC system that performs any or all of the Functions of speed regulation, programmed stopping, door control, performance level regulation, or other Functions otherwise assigned to the train operator (IEEE 1474.1).

Automatic Train Protection (ATP) means the subsystem within the ATC system that maintains fail-safe protection against collisions, excessive speed, and other hazardous conditions through a combination of train detection, train separation, and interlocking (IEEE 1474.1).

Automatic Train Supervision (ATS) means the subsystem within the ATC system that monitors trains, adjusts the performance of individual trains to maintain schedules, and provides data to adjust service to minimize inconveniences otherwise caused by irregularities. (IEEE 1474.1).

Base Product means Contractor's generic CBTC product that the Proposer will use to meet the requirements contained in this RFP, before any Customization or adaptation to a specific client. Base Products should be identified by product line or family, brand name, and generation, if any.

Betterment means a proposed change to a System Function or alternative approach to the Project technical requirements, Project management process, or schedule or payment provisions provided in this RFP, the Contract Specifications or the Sample Agreement, additional or modified Service(s), alternative or additional System Functions.

Brownfield means a project where a new CBTC System is installed on a railway infrastructure and / or rolling stock already in operation, replacing a legacy signaling system.

Capabilities means the Functions, processes, operations of the Proposer's CBTC System, including Base Product Functions, configured Functions, and customized Functions.

Central Control means the active and staffed Control Center, either TMC or OCC. When this term is used in a requirement, e.g. "Train positions shall be visible from Central Control", it refers to all facilities that are capable of acting as the active Control Center.

Central Equipment means Equipment located in SFMTA Control Centers, data centers, control rooms, and other non-wayside locations.

Contract Compliance Office (CCO) is as defined in Article 2 (Definitions) of the Sample Agreement.

Commissioning is as defined in Article 2 (Definitions) of the Sample Agreement.

Communication-Based Train Control (CBTC) System or **CBTC** is as defined in Article 2 (Definitions) of the Sample Agreement.

Conceptual Design means the point at which the Contractor develops and submits plans and documentation that describe the managerial and technical processes the Contractor will use to manage and oversee Project Work. See Section 4 (Engineering Management and Submittals) of the Contract Specifications.

Conditional Acceptance is as defined in Article 2 (Definitions) of the Sample Agreement.

Configuration is as defined in Article 2 (Definitions) of the Sample Agreement.

Construction Final Design Period is as defined in Section II.F.3.a.

Contract Administrator means the contract administrator assigned to the Contract by the SFMTA, or its designated agent.

Contract Term means the period stated in the Contract during which Contractor shall complete the Project, commencing on the date stated in the Notice to Proceed and ending at the conclusion of the Support Term.

Contractor is as defined in Article 2 (Definitions) of the Sample Agreement.

Contract Data Requirements List (CDRL) means an individually documented contractual deliverable.

Contract Documents is as defined in Article 2 (Definitions) of the Sample Agreement.

Contract Specifications is as defined in Article 2 (Definitions) of the Sample Agreement.

Control Center means both the Transportation Management Center and Operations Control Center.

Customization is as defined in Article 2 (Definitions) of the Sample Agreement.

Deployment Phase is as defined in Article 2 (Definitions) of the Sample Agreement.

Disadvantaged Business Enterprise or DBE is as defined in Article 2 (Definitions) of the Sample Agreement.

Equipment is as defined in Article 2 (Definitions) of the Sample Agreement.

Evaluation Committee means the committee of experts convened by the SFMTA to evaluate and score responsive Proposals.

Final Acceptance is as defined in Article 2 (Definitions) of the Sample Agreement.

Final Design Review means the SFMTA review of System Final Design to ensure it meets the requirements contained in the Contract Specifications. See Section 4 (Engineering Management and Submittals) of the Contract Specifications.

First-level Maintenance means all maintenance activities that are performed directly on Equipment without specialized training, including but not limited to repairing, inspecting, servicing, calibrating, lubricating, or adjusting. See Section 32 (Support Services) of the Contract Specifications.

Fitment or Fitting means the Services overseeing and supporting the installation of Equipment on Vehicles, including the preparation of surveys, providing the Equipment and installation instructions in “kits”, participating in installation activities, making field adjustments to designs and instructions to accommodate issues encountered during installation, and participating in Post-Installation Check-Out (PICO) testing

Fully Burdened Hourly Labor Rate is as defined in Article 2 (Definitions) of the Sample Agreement.

Function or Functionality means an operational task or series of tasks that the System performs.

GoA3 means the International Association of Public Transport (UITP) Grade of Automation 3, defined as driverless train operation (DTO) where the Train Operator is onboard the train to support recovery operations.

Greenfield means a project where a new CBTC System is installed on new railway infrastructure and / or rolling stock that is not in operation during installation, such as an expansion line.

Hardware means Equipment.

Heritage Vehicles means the SFMTA fleet of vehicles, mainly Presidents’ Conference Committee (PCC) and Peter Witt cars, along with veteran San Francisco streetcars and a very diverse group of streetcars including vehicles from the UK, Japan, Italy, and Portugal.

Human Factors means the usability, design, and ergonomics as they relate to humans using System Equipment and onboard Equipment.

Human/Machine Interface (HMI) means the interface between human operators and System Equipment or Vehicles.

Independent Safety Assessor means an independent consultant selected by the SFMTA to undertake and perform the safety assessment of the System delivered under the Contract in order to obtain an independent professional judgement that the System is safely designed, furnished, installed, tested, and commissioned.

Installation Period is as defined in Section II.F.3.c.

Installer is as defined in Article 2 (Definitions) of the Sample Agreement.

Interface Control Document (ICD) means a document which defines the technical relationship between the CBTC System and any critical interface internal or external to the Contractor’s System. Appendix L (Technical Addenda) provides a listing of SFMTA systems and external interfaces to be used as reference.

Key Personnel is as defined in Article 2 (Definitions) of the Sample Agreement.

Levels of Customization means the level of effort necessary to develop, test and deploy the Customization. Levels of Customization are defined as follows:

- **Low:** Would increase the development schedule by less than 3 months and/or result in an additional cost of less than \$250,000.

- **Moderate:** Would increase the development schedule between 3 months and one year and/or result in an additional cost of between \$250,000 and \$2,000,000
- **High:** Would increase the development schedule over a year and/or result in an additional cost of over \$2,000,000.

Light Rail Vehicle (LRV) or Light Rail Vehicle 4 (LRV4) is as defined in Article 2 (Definitions) of the Sample Agreement.

Maintenance Vehicles means the fleet of hi-rail vehicles maintained by the SFTMA for use in maintenance.

Materials is as defined in Article 2 (Definitions) of the Sample Agreement.

Milestone is as defined in Article 2 (Definitions) of the Sample Agreement.

Notice to Proceed is as defined in Article 2 (Definitions) of the Sample Agreement.

One-team Approach means a specific approach where in the Contract and SFMTA staff are integrated as much as possible so as to form a single team. The team adopts a problem-solving mentality working towards a set of shared goals (efficient management of the railway and minimizing delays).

Operations Control Center or Old Control Center (OCC) means the facility located at 151 Lenox Way near West Portal Station, which acts as the backup Control Center for Muni's bus and rail operations and the training facility for Train Controllers.

Performance Metric means the System Performance criteria and methodologies. See Section 30 (Reliability, Availability and Maintainability) of the Contract Specifications.

Performance Requirement is as defined in Article 2 (Definitions) of the Sample Agreement.

Performance Target is as defined in Article 2 (Definitions) of the Sample Agreement.

Post Installation Check Out (PICO) means tests conducted at the subsystem or assembly level immediately following the installation of each element to verify the Equipment is installed correctly and in good working order.

Pilot Deployment Phase or **Pilot Phase** means the first Deployment Phase, corresponding with the surface segment along the Embarcadero and northern Third Street corridor, over which the first complete portion of the System (with central Equipment, wayside, and onboard components) will be tested and commissioned. See Section 8 (Deployment, Migration and Acceptance) of the Contract Specifications.

Pilot Operating Period means the period immediately after Pilot Deployment Phase Commissioning, in which the SFMTA is operating the CBTC in Revenue Service on a trial basis. See Section 8 (Deployment, Migration and Acceptance) of the Contract Specifications.

Phase is as defined in Article 2 (Definitions) of the Sample Agreement. The word "Phase" on its own is distinguished from "Deployment Phase" which is a subset of Phases.

Preliminary Design means the Contractor's development and submittal to SFMTA of design documents that describe how the CBTC System will meet the requirements of the Contract

Specifications. See Section 4 (Engineering Management and Submittals) of the Contract Specifications.

Procurement Term means the initial eight-year period of the Contract Term, during which Contractor shall design, procure, oversee installation, test, certify and implement the CBTC System into Revenue Service. (See Article 3 (Contract Term) and Appendix A (Contract Specifications) of the Sample Agreement.) The Procurement Term ends at Final Acceptance.

Project is as defined in Article 2 (Definitions) of the Sample Agreement.

Project Schedule is as defined in Article 2 (Definitions) of the Sample Agreement.

Proposal means the technical and management information and prices submitted by Contractor in response to the RFP.

Proposer means any entity that submits a Proposal.

RAM Demonstration means a demonstration of System compliance to Reliability, Availability, and Maintainability requirements performed by the Contractor for each Deployment Phase. See Section 4 (Engineering Management and Submittals) of the Contract Specifications.

Reimbursable Parts is as defined in Article 2 (Definitions) of the Sample Agreement.

Reliability, Availability, and Maintainability (RAM) is as defined in Article 2 (Definitions) of the Sample Agreement.

Resolution Score means the score calculated based on each Proposer's commitment to a maximum allowable number of minutes elapsed between the time a trouble call is reported to the time the issue is resolved.

Revenue Service is as defined in Article 2 (Definitions) of the Sample Agreement.

San Francisco Municipal Transportation Agency (SFMTA) or **Agency** is as defined in Article 2 (Definitions) of the Sample Agreement.

Second-level Maintenance means all maintenance activities that are performed by SFMTA personnel on Equipment removed from the System. See Section 32 (Support Services) of the Contract Specifications.

Second Line Maintenance Device (SLMD) means a tool used during maintenance of components or sub-components of the CBTC, which can be scheduled on a regular basis or used for unscheduled and on-call maintenance. A SLMD provides diagnostics to troubleshoot issues with the Functions of components or sub-components of the CBTC.

Services means Work.

Shop Materials is as defined in Article 2 (Definitions) of the Sample Agreement.

Small Business Enterprise or SBE is as defined in Article 2 (Definitions) of the Sample Agreement.

Software is as defined in Article 2 (Definitions) of the Sample Agreement.

Subcontractor means any entity that has a contract with the Contractor to perform the Services (Work).

Subway Cutover means the action, following SFMTA approval, of permanently cutting over control of the subway wayside signaling systems to the Contractor's CBTC System, and disconnecting the existing system. See Section 8 (Deployment, Migration and Acceptance) of the Contract Specifications.

Support Fee or **Monthly Support Fee** is as defined in Article 2 (Definitions) of the Sample Agreement.

Support Services is as defined in Article 2 (Definitions) of the Sample Agreement.

Support Term is as defined in Article 2 (Definitions) of the Sample Agreement.

System is as defined in Article 2 (Definitions) of the Sample Agreement.

System Final Design means the design package that describes System design and shows how the System will meet Functional, non-Functional, and derived requirements contained in the Contract Specifications. See Section 8 (Deployment, Migration and Acceptance) of the Contract Specifications.

System Performance is as defined in Article 2 (Definitions) of the Sample Agreement.

System Performance Score means the score calculated to evaluate Proposals based on proposed System Performance Targets.

System Procurement means the delivery of the Contractor's fully functional CBTC System as described in the Contract Specifications, ending in Final Acceptance by the SFMTA.

Technical Services Consultant means a consultant under separate contract with the SFMTA to augment the SFMTA engineering team and assist with Project oversight.

Testing and Commissioning Period is as defined in Section II.F.3.d.

Third-level Maintenance means all maintenance activities on Equipment removed from the System that are performed by the Contractor in its repair facilities. These activities require Contractor's specialized equipment and personnel with specific technical skills. See Section 32 (Support Services) of the Contract Specifications.

Train Operator's Display means the built-in user interface for use by train operators in the Siemens' LRV4 vehicles.

Transportation Management Center (TMC) means the facility at 1455 Market Street used as the primary Control Center for Muni's bus and rail operations.

Update is as defined in Article 2 (Definitions) of the Sample Agreement.

Upgrade is as defined in Article 2 (Definitions) of the Sample Agreement.

Urgency Levels: is as defined in Article 2 (Definitions) of the Sample Agreement.

Vehicle is as defined in Article 2 (Definitions) of the Sample Agreement.

Warranty Period is as defined in Article 2 (Definitions) of the Sample Agreement.

Weighted Resolution Value means a weighted sum of the nine values proposed in Appendix J by Proposers for Response, Root Cause Disposition, and Resolution Times.

Work is as defined in Article 2 (Definitions) of the Sample Agreement.

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Refer to the Contract Specifications and the Sample Agreement for the meaning of various abbreviations, acronyms and terms used in those documents but not defined herein. Additional definitions are located in Section 1.4 (Definitions) of the Contract Specifications and Article 2 (Definitions) of the Sample Agreement.

II. Scope of Work

The Contractor will design, provide, test and commission a CBTC System in compliance with IEEE 1474.1 (2004 version) and the requirements specified in the Contract Specifications. The description in this section only summarizes the work that the Contractor will be required to perform. The Contract Specifications contain the full description of the Work and establishes the obligations of the parties under the contract.

The Contractor will oversee and support the installation of the CBTC System on SFMTA's Vehicles and in SFMTA's facilities, including wayside locations. The Contractor will provide technical support, spare parts, training, and Software releases as specified in the Contract Specifications for the Support Term, as described in Section I.D (Anticipated Agreement Term). The Contractor will be responsible for ensuring that the CBTC System meets all functional and technical requirements stated in the Contract Specifications, investigating and seeking clarifications for these requirements, and for gathering any additional information the Contractor may need to design and build the System.

The System will consist of the following subsystems, as described in the Section 16.2 (System Architecture) of the Contract Specifications:

1. Train Control and Supervision
2. Data Communication
3. Centralized Maintenance Management System (CMMS)
4. Simulators and Tools
5. Master Clock
6. External interfaces
7. Third-party interfaces
8. Cloud-based applications or data systems

A. Equipment and Materials Summary

The Contractor will provide at a minimum the following Equipment, in accordance with the System design and the technical requirements contained in the Contract Specifications:

1. **Central Equipment** to be located within the Transportation Management Center (TMC) complex on Market Street as the primary Control Center.
2. **Duplicate Central Equipment** to provide a fully provisioned replica of the primary Control Center in the Operations Control Center (OCC) facility on Lenox Way.

3. **Wayside Equipment** to provide connections to wayside signaling infrastructure, such as signals, switches, and traffic signal controllers, as necessary to ensure all 29 existing interlockings and two new additional interlockings that will be part of the new Central Subway are centralized under the System, as well as provide for tracking and communications of trains on the full surface and subsurface rights of way.
4. **Additional wayside Equipment** to permit an additional ten switches, currently manual, to be motorized and centralized under the new System. The location of those ten switches will be defined by SFMTA during the design Phase.
5. **Onboard Equipment** to fit 219 LRV4 railcars to enable the ATP, ATO, and ATS Functions described in the Contract Specifications.
6. **Human interfaces necessary to control the System** provided to the Control Centers and maintenance facilities as described in the Contract Specifications.
7. **Network infrastructure and Equipment including wireless network infrastructure** necessary to ensure fully redundant communication pathways between the various pieces of subsystems, excluding SFMTA-furnished infrastructure as described in the Contract Specifications Sections 9 (SFMTA Furnished Items) and 26 (Communications).
8. **Power distribution and Uninterruptible Power Supply (UPS) Equipment** required for proper operation of System Equipment at the Control Centers and wayside locations.
9. **Simulator Equipment** to be located at the OCC and tied into the replica Control Center to permit this facility to be used as a fully functional operational training simulator when not used to control the revenue System.
10. **Maintenance Equipment** needed to permit SFMTA to perform all Second-level Maintenance as defined in the Maintenance Plan and in the technical requirements set out in the Contract Specifications.
11. **Other Equipment as needed to meet the functional and technical requirements** as described in the Contract Specifications.
12. **All Materials necessary to deploy the System, other than Shop Materials**, in accordance with the Proposer's design and the Contract Specifications. The Installer(s) will furnish their own Shop Materials, but the Proposer will provide all Materials not readily obtainable by Installers that are necessary to deploy its System.

B. Software Summary

The Contractor will provide the CBTC Software, firmware, licensing, manuals, instructions, guides, training materials (such as interactive computer-based training materials, handbooks, videos, presentations), SLMDs, simulators and other devices or Software necessary for the SFMTA to operate and maintain the System in accordance with the Contract Specifications.

The SFMTA recognizes that the System procured will to some extent require Customization to meet the SFMTA's requirements and to adapt to San Francisco's operating environment. However, the Contractor will design SFMTA's System to be as close as possible to its Base Product such that it is able to receive Software Updates and Upgrades and stay in alignment with the Contractor's long-term product lifecycle over the entire Contract Term. To the greatest extent possible, the System will meet SFMTA's requirements without requiring Customization by the Contractor.

The SFMTA operates a fleet of Siemens Light Rail Vehicles (LRV4s), which have onboard systems and software with which the CBTC must communicate. The Contractor will be responsible for integrating its CBTC System with the onboard systems on the LRV4s. The LRV4s are in the process of being delivered. Refer to Section 2 (Summary of Work & Scope Split) of the Contract Specifications for more details.

The SFMTA, along with third-party contractors, provides and maintains its data infrastructure, computer-aided dispatch and scheduling software, customer information systems, asset management systems, and other information systems that support transit operations and maintenance. Descriptions of the third-party systems and software that the SFMTA currently uses are in Appendix L1 (Concept, Plan, and Interface Documents) of this RFP. The Contractor will support the SFMTA's effort to integrate the CBTC System with these information systems. To support that integration, the Contractor will provide APIs and data exchange, provide and comment on ICDs, respond to RFIs, modify its Equipment and/or Software, or take other actions as necessary to integrate the CBTC with legacy and third-party systems.

C. Support Services Summary

The Contractor will provide the following Support Services as described in the Contract Specifications:

1. Technical support, including providing on-site staff who will assist in failure and root cause analysis, troubleshooting, and escalation in response to technical problems upon request from the SFMTA maintenance staff who will be responsible for First- and Second-level Maintenance.
2. Real-time maintenance monitoring Software and Equipment provided at dedicated workstations for SFMTA staff in Central Control locations and other SFMTA facilities to monitor the System and its components.
3. Sufficient resources to respond rapidly to incidents, System outages and malfunctions so as to meet the response and resolution times committed to in the Proposal.
4. A regularly updated and comprehensive training curriculum for train operators, train controllers and maintenance staff to understand the operations and maintenance of the

System. The Contractor will revise the training curriculum each time the System is updated and include training through the life of the Agreement.

5. Replacement parts, as needed, to support preventative and corrective maintenance completed by SFMTA staff through the life of the Agreement, at no additional cost beyond the Monthly Support Fee. The Contractor will ensure at all times that a sufficient stock of replacement parts is available in the Bay Area to cover two years of System operation, replenishing the stock of these parts as they are consumed during the term of the Agreement. The Contractor will be reimbursed by the SFMTA for furnishing parts for exempted repairs, such as repairs made necessary by force majeure or vandalism, as described in the Agreement.
6. Maintain duplicate units/assemblies of replaceable components, which are on-site but not part of the System used in Revenue Service, for use in testing or training, such as training simulators for train controllers and train operators and SLMD/test benches for maintenance staff, as described in the Contract Specifications.
7. Maintain System Equipment and tools for every test track at SFMTA rail maintenance facilities to diagnose Vehicle-to-wayside communications issues and onboard Equipment issues, as described in the Contract Specifications.

The Contractor will also provide Software support for the System as described in the Contract Specifications. All Software bugs identified during testing, Commissioning, or RAM Demonstration will be corrected before Final Acceptance. After Final Acceptance, the Contractor will install, test, and commission new releases of the Software at regular intervals to keep SFMTA's version of the Software current with the latest release of the Contractor's product, provide patches for security and operating system compatibility, and fix Software bugs, as described in the Contract Specifications.

D. Installation Summary

The Contractor will not perform any work that constitutes a public work or construction, including the installation of any wayside or LRV4 vehicle Equipment. The SFMTA will contract with third-party Installers to perform LRV and wayside Equipment installation.

The SFMTA will contract with a Vehicle Installer to perform all LRV4 Equipment installation work. The SFMTA may exercise options to direct Contractor to install its Equipment on maintenance and Heritage Vehicles. The SFMTA will bid out the other installation work following the selection of the CBTC System Supplier. The Contractor will assist the SFMTA in establishing the qualifications for prospective Installers.

The Contractor will provide the Installers with all specialized tools, Equipment, documentation, training, special materials, and oversight that is necessary to install the CBTC to meet Contract Specifications. The Installer will provide standard Shop Materials and tools. If the Installer is unable to obtain Materials meeting the Contractor's specifications, the Contractor will provide them. The Contractor will have personnel who are familiar with the System design and proper installation of the Equipment present at the job site during installation activities. The Contractor will respond promptly to requests for information from the SFMTA and/or the SFMTA's Installers that may arise during installation.

Following each Phase of the System installation, the Contractor will inspect, test, and certify that the supporting infrastructure conforms to System designs and the Equipment has been correctly installed and is working as specified. The Contractor will be responsible for QA/QC related to any third-party installations, testing, or certification. The SFMTA will retain overall QA oversight through its Project team.

Once the Contractor has certified that the System was correctly installed, the Contractor will be responsible for meeting the Performance Targets it commits to in its Proposal, as specified in the Agreement. The Contractor will be required to follow any procedures, policies or practices included in its Proposal related to meeting this responsibility.

E. Geographic Scope and Deployment Phasing

The geographic scope of the System is the entire Muni rail network. (See map on following page.) The Contract employs a phasing plan. The Contractor will deliver the work in accordance with the Milestone Schedule in Appendix C to the Agreement and the Deployment Phases, described below.

1. Pilot Phase: includes Third Street corridor from Muni Metro East yard to the Central Subway portal at 4th and Bryant, N Judah corridor from 5th & King along the Embarcadero to Ferry Portal.
2. Subway Replacement Phase: includes Market Street Subway & Central Subway
3. N Expansion Phase: includes Judah corridor from Duboce Portal to Ocean Beach
4. T Expansion Phase: includes Third Street corridor from Muni Metro East yard to Sunnydale
5. K&M Expansion Phase: includes Ocean View and K Ingleside corridors from West Portal to Green yard
6. J Expansion Phase: includes Church corridor from Duboce Portal to Green Yard
7. L Expansion Phase: includes Taraval corridor from West Portal to SF Zoo

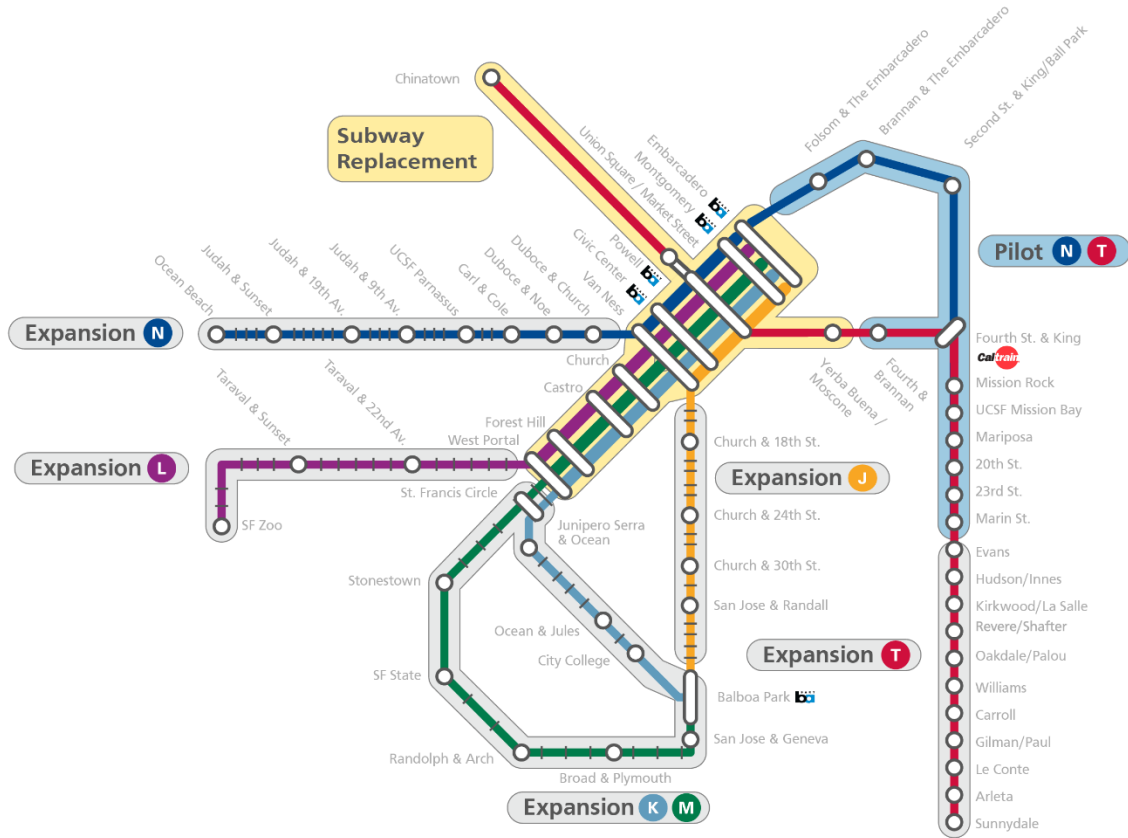


Exhibit 1: Deployment Phases

Appendix C (Payment Milestones) to the Sample Agreement defines the Milestones which make up the Project, including delivery due dates. The Proposer shall propose a Project Delivery Schedule which fits both the delivery dates for the Milestones and the meets the dates in the expected schedule presented in the table below.

Exhibit 2: Expected Schedule

Planned Project Schedule		
1	Projected Notice to Proceed	2/14/2024
2	Approval of Final System Design (estimated 497 days after NTP)	6/22/2025
3	Approval of Pilot Phase Construction Final Design (estimated 672 days after NTP)	12/15/2025
4	Approval to begin Pilot Revenue Service (estimated 1281 days after NTP)	8/15/2027
5	Approval to begin Subway Revenue Service (estimated 1862 days after NTP)	3/18/2029
6	Final Acceptance of System (estimated 2919 days after NTP)	2/8/2032

Exhibit 2 includes key Milestone completion dates, assuming the Notice to Proceed is issued on February 14, 2024. If the Notice to Proceed occurs on a different date, the dates on Items 2 through 6 above will be adjusted appropriately.

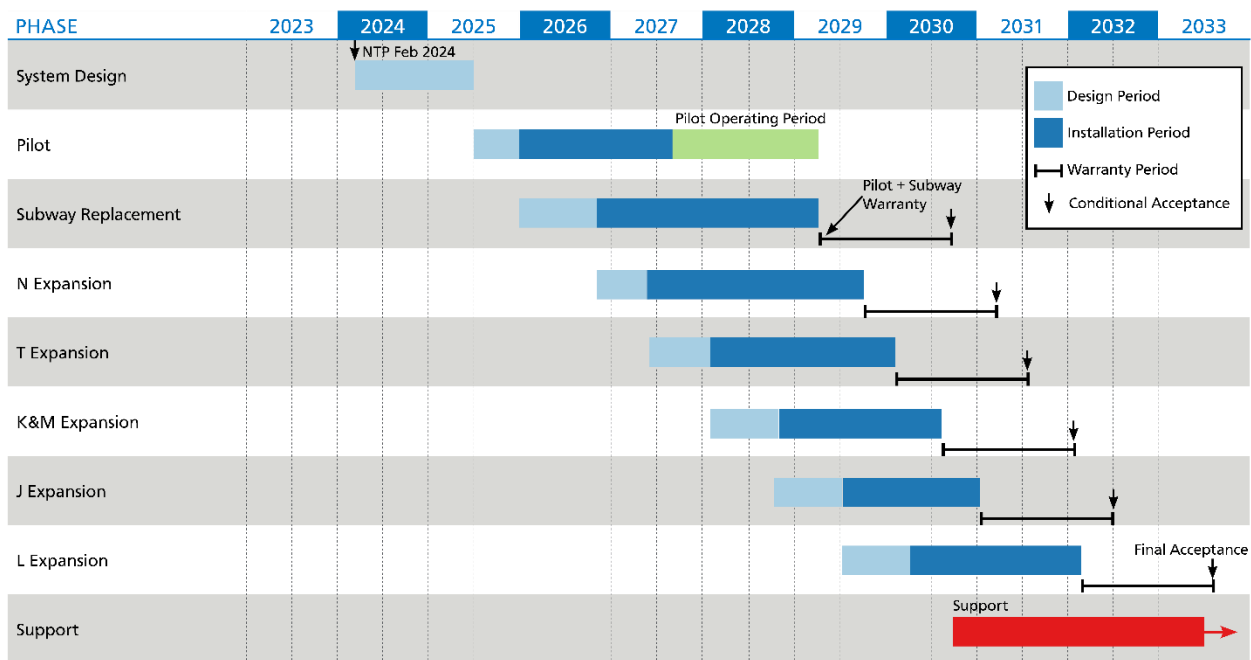
The SFMTA will evaluate a Deployment Plan with an alternative schedule or phasing which improves upon the above project schedule as a Betterment. A Proposer submitting an alternative Deployment Plan as a Betterment still must also submit a compliant Deployment Plan to meet the requirements in Section IV.C (Proposal Content). The narrative description of the Betterment shall articulate the advantages to SFMTA of using the proposed alternative over the schedule and phasing outlined in this Section. See Section IV.C.4 (Betterments) for more details.

F. System Procurement Phases

The System Procurement execution consists of 10 Phases, including 3 Systemwide Phases and the 7 Deployment Phases listed in Section II.E. (Geographic Scope and Deployment Phasing), as listed below:

1. System Design
2. Central Equipment, Delivery, and Installation
3. Onboard Equipment Fitting
4. Pilot Deployment Phase
5. Subway Replacement Deployment Phase
6. N Expansion Deployment Phase
7. T Expansion Deployment Phase
8. K&M Expansion Deployment Phase
9. J Expansion Deployment Phase
10. L Expansion Deployment Phase

Exhibit 3: Overview of the System Procurement Milestones



3. System Design

During the System Design, the Contractor will complete the CBTC design in close collaboration with SFMTA. The System Design will be advanced in three stages: Conceptual Design, Preliminary Design, and System Final Design. These design stages are defined in Section 4.2 (Design Life Cycle) and Section 8.3.1.1 (System Design) of the Contract Specifications.

4. Central Equipment, Delivery, and Installation

Following the System Final Design Review, the Contractor will deliver the Central Equipment, simulators, tools, documentation, and training. The Contractor will Fit the Vehicles with onboard Equipment in time for the LRV4 Installer to install that Equipment concurrently with the Pilot Deployment Phase. The delivery of all central Equipment, simulators, tools, documentation, and training, as well as the onboard Equipment for Fitting must be completed before the Subway Cutover. This work is defined in Section 8.3.1 (Description of Systemwide Phases) of the Contract Specifications.

5. Deployment Phases

Each Deployment Phase has a Construction Final Design Period, a Pre-Installation Period, an Installation Period, a Testing and Commissioning Period, and a Warranty Period. The Pilot Deployment Phase additionally has a Pilot Operating Period which takes place immediately after Commissioning and ends at Subway Cutover. Deployment Phases and their structure are defined Section 8.3.2 (Description of Migration Phases) of the Contract Specifications; these requirements are summarized here.

a. Construction Final Design Period

Each Deployment Phase will start with a Construction Final Design Period in which the Contractor develops schematics, installation instructions and plans to be used for infrastructure construction and Equipment installation. During this period, the Contractor will collaborate with the SFMTA to develop a bid package to allow the installation work for the Deployment Phase to be bid on by potential Installers. The Construction Final Design Period for each Phase ends when the SFMTA approves the Contractor's design.

b. Pre-Installation Period

After the Construction Final Design has been accepted by SFMTA, SFMTA will use the Contractor's design documents to conduct a competitive procurement of the installation work for the Deployment Phase. During this pre-Installation Period, which is expected to last approximately 6 months, the SFMTA will undertake its construction contracting process while the Contractor procures, delivers and stages the equipment and materials necessary to perform the installation.

c. Installation Period

During the Installation Period of each Deployment Phase, the Installer will install the Equipment on the wayside and control rooms in accordance with the Contractor's instructions and designs. The Contractor will monitor the installation and ensure it is done consistent with its

designs and specifications, noting any discrepancies to the SFMTA. The Contractor will provide all necessary Materials and Equipment for installation prior to this period. The Installation Period ends when all Equipment has been installed and has successfully passed Post-Installation Check-Out (PICO) tests.

d. Testing and Commissioning Period

In the Testing and Commissioning Period the Contractor will conduct all tests necessary for it to certify the System has been installed correctly for that Phase and is working as designed. This testing includes Software factory tests, as well as both static (with no trains or a static train) and dynamic (with trains in motion) site tests. Towards the end of the period, the Contractor will conduct pre-commissioning tests intended to inform the safety certification required by the CPUC. The Testing and Commissioning Period ends with the Commissioning event, where the Contractor warrants to the SFMTA that the System has been installed properly, is safety certified, and is ready to be used in Revenue Service.

Additionally, the Subway Replacement Phase requires the Subway Cutover from the existing ATCS to the new System to occur in order to be placed into Revenue Service. This creates additional requirements for completing the Subway Replacement Phase, including satisfactory resolution of issues which have arisen during the Pilot Phase. The Subway Cutover requirements are located in Section 8.3.2.6 (Subway Cutover) of the Contract Specifications.

e. Pilot Operating Period

The Pilot Operating Period will begin upon Commissioning of the System installed for the Pilot Deployment Phase and will end at Subway Cutover. During this period, the SFMTA will operate the CBTC System in Revenue Service in the Pilot geographic area described in the Contract Specifications. The SFMTA will monitor the performance and reliability of the System during this period. The Contractor will provide on-the-job training to SFMTA staff during this period and support maintenance according to the roles and responsibilities described in Section 8.3.2.5 (Pilot Operating Period) of the Contract Specifications, while the Subway Replacement Phase is underway.

The purpose of the Pilot Operating Period is to demonstrate the Capabilities of the System, with Central, wayside and Vehicle components, before initiating the Subway Cutover. One of the goals of the Pilot Operating Period will be to reduce the significant risks to SFMTA's ability to provide rail service posed by the transition from the existing ATCS to the Contractor's CBTC.

During the Pilot Operating Period, the Contractor will correct design defects, omissions, and other issues at no additional cost if the System does not meet performance or other Contract requirements. The SFMTA may also submit one or more change orders for minor modifications to the System Software and/or design to address SFMTA comments made during this period. The System's performance during the Pilot Operating Period will be considered in determining when the System is ready for the Subway Cutover.

f. Warranty Period

The Warranty Period for each Deployment Phase (with the exception of the Pilot Phase) will commence upon Commissioning and will continue for eighteen months as specified in Section 13 (Warranty and Spare Parts) of the Contract Specifications. The Pilot Phase Warranty Period

will begin at Subway Cutover and will be active concurrently with the Subway Replacement Phase Warranty period.

During the eighteen-month Warranty Period for each Deployment Phase, the Contractor will be responsible for the following:

- Replenish spare parts for the System and provide technical assistance as per the requirements defined in Section 13 (Warranty and Spare Parts) of the Contract Specifications.
- Correct any defects in System Equipment, Materials or Software discovered during the Warranty Period.

The SFMTA will not commence payment for Support Services for a Deployment Phase until the SFMTA has given Conditional Acceptance for that Deployment Phase and the applicable Warranty Period has expired. Immediately following the expiration of the Warranty Period, the Contractor will provide Support Services so that there is no lapse in services between warranty and support.

Any Software defects identified after all Warranty Periods have expired will be corrected by the Contractor under the Support Services terms. Any defects in System Equipment or Materials identified after all Warranty Periods have expired will be corrected by the SFMTA, however the Contractor will replenish spare parts used in the repair at no additional cost. For more information, refer to the System Support Services terms stated in Section 32 (Support Services) of the Contract Specifications.

g. Conditional Acceptance by Phase

The Contractor may apply for Conditional Acceptance at the end of the Warranty Period for that Phase. The Conditional Acceptance marks the end of Procurement and the beginning of Support Services payments for the portion of the CBTC System delivered during a Deployment Phase. It is intended to occur eighteen months after that portion of the CBTC System has been commissioned but may occur later if the requirements for Conditional Acceptance have not been met.

SFMTA's Conditional Acceptance criteria for each Deployment Phase includes the following:

- The Contractor has submitted all Project deliverables applicable to the Phase, and they are determined to be acceptable by the SFMTA.
- The Contractor has implemented and verified all System requirements applicable to the Phase.
- The Contractor has resolved all System defects, including Hardware and Software defects, found during verification and test activities.

Section 8.3.2.8 (Conditional Acceptance) of the Contract Specifications contains the requirements for Conditional Acceptance. The SFMTA may grant Conditional Acceptance for a Deployment Phase even while minor deficiencies with the System exist that do not impact safety or the core operations. Notwithstanding SFMTA's Conditional Acceptance as to each

Deployment Phase, the Contractor must resolve all System defects, including these minor deficiencies, as a condition of Final Acceptance of the System.

6. RAM Demonstrations

The Contractor will demonstrate that the CBTC System meets the Performance Requirements twice before Final Acceptance. The Initial RAM Demonstration will start at Subway Cutover and continue for a minimum operating period of six months of Revenue Service. The Final RAM Demonstration will start at the Commissioning of the final Deployment Phase and continue for a minimum operating period of six months of Revenue Service. During the RAM Demonstration, the System Performance, as specified in Section 30 (Reliability, Availability and Maintainability) of the Contract Specifications, will be measured and compared to the Performance Targets established based on Contractor's Proposal in Appendix J (Performance Targets). During the RAM Demonstration, the Contractor will make adjustments to the System, at no additional cost to SFMTA, to achieve the required performance.

The RAM Demonstration will continue until the Performance Targets are met for a period of six consecutive months. Thus, the RAM Demonstration may be extended if the System Performance Targets are not being met. The SFMTA may give Conditional and Final Acceptance even while the RAM Demonstration has not been completed. If the Contractor fails to complete either the Initial or Final RAM Demonstration, the SFMTA will reduce the monthly support payments until it successfully completes the RAM Demonstration.

7. Final Acceptance

Upon the end of the Warranty Period for the final Deployment Phase and delivery of all final System documentation, the Contractor may then apply for Final Acceptance. The requirements for Final Acceptance are provided in Section 8.3.1.4 (Final Acceptance) of the Contract Specifications.

G. Optional Scope

1. Additional LRV Fitment

The SFMTA is in the process of taking delivery of new Siemens LRV4 railcars, with a total quantity of 219 LRVs to be delivered. The Fitting of these 219 railcars is included in the base scope as indicated in Section II.A (Equipment Materials Summary) and the Contract Specifications. The SFMTA may procure up to an additional 30 Siemens LRV4 vehicles from Siemens. The Contract shall include options priced on a per-vehicle basis to fit up to 30 additional LRVs beyond the specified 219 LRV4 vehicles with the Contractor's Equipment

2. Heritage and Maintenance Vehicle Installation

The Contract Specifications contain specific requirements for the handling of both Heritage streetcars and Maintenance hi-rail vehicles. The Contractor is required to produce a design meeting those requirements, and the Contractor's design may or may not require these vehicles to have onboard Equipment.

The Contract will include options for installation of the Contractor's Equipment on up to 30 Maintenance and up to 50 Heritage Vehicles on a per-vehicle basis. If the Contractor can meet the requirements regarding Heritage and Maintenance Vehicles without onboard Equipment, the Contractor shall clearly indicate this in their Proposal and price each of these options at \$0.

Installing Equipment on these vehicles will require specialized work accounting for the unique characteristics of each vehicle. If these options are exercised, the Contractor will perform these installations. This option is the only instance where Contractor may perform installations.

3. Five-Year Extensions to Support Services

The Contract will include two options for five-year extensions of the Support Services.

III. Minimum Qualifications

Proposer must meet the Minimum Qualifications (MQs) set forth below. As explained in Sections IV (Submission Requirements) and V (Evaluation and Selection Criteria) below, Proposer must fill out the forms and supply the information requested in Appendix M (Minimum Qualifications) to provide evidence that it meets these qualifications. The SFMTA will review each Proposal to determine whether the Proposer meets the MQs. **This screening is a pass or fail determination; a Proposer that fails to meet any MQ will not be eligible for further consideration.**

MQ #	Description
MQ1	Proposer has successfully delivered a Brownfield CBTC resignaling project covering a minimum of 8 miles double track. The system must have been in revenue service for at least two years from the date of submittal of the Proposal.
MQ2	Proposer has successfully delivered a CBTC Project with a minimum grade of automation of GoA3, along a minimum of 8 miles double track. The system must have been in revenue service for at least two years from the date of submittal of the Proposal.
MQ3	Proposer has successfully delivered a surface light rail train control project in mixed-flow traffic or semi-exclusive right of way, which interfaces with road traffic signals. The system must have been in revenue service for at least two years from the date of submittal of the Proposal.
MQ4	The Proposer’s reference projects (as described in RFP Section IV.C.3 (Technical Proposal) must have been with at least two different public sector owners, such as municipalities or transportation agencies.
MQ5	Proposer currently provides Software and Hardware Support Services for its CBTC to at least two public sector clients, such as municipalities or transportation agencies.
MQ6	Proposer must have a current Moody’s credit rating of Baa3 or better at the date of submittal of the Proposal.

IV. Submission Requirements

A. Time and Place for Submission of Proposals

Proposals must be received by 17:00 PT on May 23, 2023. Proposer must submit its Proposals in an electronic format by email to Kathy.Larson@sfmta.com

Proposers must limit email messages to 25MB or less.

Proposers may break up its Proposals into separate electronic files and submit these in separate emails as described in Section IV.B (Proposal Format) below,

Proposers are fully responsible for ensuring its Proposals are received by the time and date indicated. The SFMTA will not accept late Proposals, even in cases of known email system failure. Accordingly, Proposers are encouraged to submit their Proposals at least 24 hours before the time and date due.

B. Proposal Format

A Proposal must include the information requested in Section IV.C (Proposal Content). This information must be organized in order according to the below table, with the sections as laid out below, and with each section not exceeding the page limit as annotated below. The page limit is single-sided, so that a double-sided document will be counted as two pages.

Proposal Submission Checklist				
Tab		Submission Requirement	Pages	Submission Checklist
	Part 1	Introduction and Executive Summary		
1	1	Introduction and Executive Summary	3 Pages	Letter of Introduction with an executive summary (See IV.C.1)
2	1	Attestation of Compliance		Completed Appendix C
3	1	Certification Regarding Debarment, Suspension, and Other Responsibility Matters		Completed Appendix D
4	1	Certification Regarding Lobbying		Completed Appendix E
5	1	Certification Regarding Buy America Compliance		Completed Appendix I
	Part 2	Minimum Qualifications		
6	2	Minimum Qualifications	5 pages	Summary of how each MQ is met (See IV.C.2)

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6a	2	Minimum Qualifications	No page count	Completed documents from Appendix M (See IV.C.2)
	Part 3	Technical Proposal		
7	3	Project Procurement Approach	60 Pages	<ol style="list-style-type: none"> 1. Description of Approach to Meeting the Requirements Included in the Contract Specifications (See IV.C.3.a.i) 2. Description of CBTC System and Already-Designed Capabilities (See IV.C.3.a.ii) 3. Description of Project Management Processes (See IV.C.3.a.iii) 4. Description of Approach to System Integration (See IV.C.3.a.iv) 5. Description of Approach to CBTC System’s Handling of Heritage and Maintenance Vehicles (See IV.C.3.a.v) 6. Draft Implementation Plan (See IV.C.3.a.vi) 7. Description of Certification, Testing, QA and QC Programs and Draft Safety and Security Certification Plan (See IV.C.3.a.vii) 8. Description of Buy America Compliance Plan (See IV.C.3.a.viii)
8	3	Project Support Approach	30 Pages	<ol style="list-style-type: none"> 1. Draft Support Plan (See IV.C.3.b.i) 1. Description of Approach to Meeting SFMTA’s Operations and Maintenance Objectives (See IV.C.3.b.ii) 2. Description of Support Program and Methodology (See IV.C.3.b.iii)
9	3	Proposer’s Experience	30 Pages	<ol style="list-style-type: none"> 1. Description of History and Structure of Proposer (See IV.C.3.c.i) 2. Narrative of Proposer’s Most Similar CBTC Projects (See IV.C.3.c.ii)

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				<p>3. Information About All of Proposer’s Similar CBTC Projects (See IV.C.3.c.iii)</p> <p>4. List of All Other CBTC Projects (See IV.C.3.c.iv)</p>
9a	3	Project Procurement Approach Support Documents	No page count	<p>1. Sample Project Management Plan (See IV.C.3.c.ii)</p> <p>2. Sample Design Document (See IV.C.3.c.ii)</p>
10	3	Commitment of Qualified Team Personnel	20 pages	<p>1. Statement of Commitment of Key Personnel (See IV.C.3.d.i)</p> <p>2. Organization and Staffing Plan (See IV.C.3.d.ii)</p> <p>3. Staffing Plan for Support Services (See IV.C.3.d.iv)</p>
10a	3	Team Resumes	No page count	<p>1. Resumes of Key Personnel (See IV.C.3.d.iii)</p> <p>2. Organization and Resumes of Representative Maintenance and Support Team (See IV.C.3.d.iv)</p>
11	3	Customization Effort	__ pages	<p>1. Completed Appendix K (See IV.C.3.e.i)</p> <p>2. Description of Customization Required for Operation in Both ATO and Street-Running Territory (See IV.C.3.e.ii)</p>
12	3	Performance Metrics	10 pages	<p>1. Completed Appendix J (See IV.C.3.f.i)</p> <p>2. Description of Calculations and Assumptions Made in Completing Appendix J (See IV.C.3.f.ii)</p>
	Part 4	Betterments Proposal		
13	4	Betterments	__ pages per Proposal	Betterment Proposals (See IV.C.4.b)
	Part 5	Price Proposal		
14	5	Price Proposal		Completed Appendix F (See IV.C.5)

	Part 6	Small Business Enterprise Program Proposal		
15	6	Demonstration of Compliance with SFMTA SBE Requirements	No page count	Required forms from Appendix A (See IV.D and IX.Q.5)

Proposer must ensure that Proposals are legible and may be easily viewed on a computer monitor, laptop, or (electronic) tablet. Text should be unjustified (i.e., with a ragged-right margin), and in 11-point or larger serif font (e.g., Times New Roman, and not Arial). Pages must have page margins of at least 1” on all sides (excluding headers and footers).

All electronic files must include scanned (PDF) copies of any documents that require signature. Signatures must be by an official of the Proposer’s firm who is authorized to represent the Proposer.

Each Proposal Part must be submitted as a separate electronic file. Each electronic file must be clearly marked “RFP No. SFMTA-2022-40-FTA” and, as applicable, “Part 1 – Introduction and Executive Summary,” “Part 2 – Minimum Qualifications Proposal,” “Part 3 – Technical Proposal,” “Part 4 – Betterments Proposal,” “Part 5 – Price Proposal,” and “Part 6 – Small Business Enterprise Program Proposal.”

Proposals must be in writing and include the information requested in this Section, organized in the order set out below. They must include a table of contents showing the applicable section headings and sub-headings, section numbering, and page numbers. Page limitations, if any, are indicated in the Proposal Submission Checklist in Section IV.B (Proposal Format). Cover pages do not count against the page limits.

The Proposer is responsible for ensuring that the information provided in its Proposal is complete and accurate.

C. Proposal Content

1. Part 1 – Introduction and Executive Summary

Submit a letter of introduction with an executive summary of the Proposal that includes the information listed below. The letter must be signed by a representative of the Proposer with the authority to obligate the Proposer’s team to perform the commitments made in the Proposal. The introduction and executive summary must include:

- Proposer Organization. Name of the organization as a Prime, or organizations that comprise the Joint Venture (if applicable).
- Proposer Contact. Name, address, telephone number, and email address of Proposer’s contact person for this Proposal.
- Project Manager. Identify the Proposer’s Project Manager who will serve as the primary contact with the SFMTA from Notice to Proceed through Final Acceptance.

- Statement of Ability to Perform. Statement that Proposer will provide the System and Services described in the RFP, and that the Proposer will meet the SBE requirements stated in the RFP.
- Statement of Ability to provide Insurance and Indemnity. Statement that Proposer will provide the insurance and indemnity requirements as outlined in Article 6 (Insurance and Indemnity) of the Sample Agreement.
- Statement of Ability to provide Performance Bond. Statement that Proposer will provide the performance bond requirements as outlined in in Section 5.13 (Bond Requirements) of the Sample Agreement.
- Statement Accepting Terms and Conditions. Statement that Proposer accepts all of the SFMTA’s proposed terms and conditions included in the Sample Agreement.

The Proposer will enclose the following signed documents in Part 1 after the letter of introduction:

- Appendix C – Attestation of Compliance
- Appendix D – Certification Regarding Debarment, Suspension, and Other Responsibility Matters
- Appendix E – Certification Regarding Lobbying
- Appendix I – Buy America Requirements

2. Part 2 – Minimum Qualifications Proposal

The Proposal must include a summary describing how the Proposer satisfies each of the six Minimum Qualification (MQ) requirements listed in RFP Section III (Minimum Qualifications), with supporting documentation, in the format described in this section. Appendix M (Minimum Qualifications) contains forms that will be completed as part of the MQ Proposal. Supporting documentation should be clearly marked as “MQ1”, MQ2”, and so forth, to indicate which MQ it supports.

A Proposer may include multiple projects to meet an MQ, and a Proposer may satisfy multiple MQs using a single project. The MQs must all be met by a single firm, or if the Proposer is a joint venture, by the lead partner’s firm; the Proposer may not use Subcontractors to meet the MQs. All projects included in this Section of the Proposal to satisfy MQ requirements must also be included in the Proposal for Section IV.C.3 (Proposer’s Experience).

MQ1: Brownfield Experience

Describe one Brownfield CBTC resignaling project that Proposer has successfully delivered that covers a minimum of 8 miles double track and has been in revenue service for at least two years from the date of submittal of the Proposal. For the project, submit a completed Form M.1. Attach contract award notices, close out

certification documents, a certificate of final completion or notice of completion, and any other acceptance documentation from the project owner that demonstrates the Proposer meets MQ1.

MQ2: CBTC Experience with GoA3 Automation

Describe one CBTC Project that Proposer has successfully delivered that has a minimum grade of automation of GoA3 along a minimum of 8 miles double track and has been in revenue service for at least two years from the date of submittal of the Proposal. For the project, submit a completed Form M.2. Attach contract award notices, close out certification documents, a certificate of final completion or notice of completion, and any other acceptance documentation from the project owner that demonstrates the Proposer meets MQ2.

MQ3: Surface Light Rail Train Control Project Experience

Describe one surface light rail train control project that Proposer has successfully delivered that involves mixed-flow traffic or semi-exclusive right of way, interfaces with road traffic signals, and has been in revenue service for at least two years from the date of submittal of the Proposal. For the project, submit a completed Form M.3. Attach contract award notices, close out certification documents, a certificate of final completion or notice of completion, and any other acceptance documentation from the project owner that demonstrates the Proposer meets MQ3.

MQ4: Experience with Two Different Public Sector Owners

Describe two projects completed for two different public sector owners, such as municipalities or transportation agencies, which also meet the requirements for MQ1, MQ2 and/or MQ3. For the projects, submit a completed Form M.4. Attach contract award notices, close out certification documents, a certificate of final completion or notice of completion and any other acceptance documentation from the reference project owner that demonstrates the Proposer meets MQ4.

MQ5: Software and Hardware Support Services Experience

Describe two projects where Proposer currently provides Software and Hardware Support Services for its CBTC to two separate public sector clients, such as municipalities or transportation agencies. For the projects, submit a completed Form M.5. Attach contract award notices and any other acceptance documentation from the project owner that demonstrates the Proposer meets MQ5.

MQ6: Credit Rating

Provide evidence of that the Proposer's current Moody's credit rating is Baa3 or better. Submit a completed Form M.6. Attach documentation, statements, or other evidence of Moody's credit rating that demonstrates the Proposer meets MQ6.

3. Part 3 – Technical Proposal

a. Project Procurement Approach

Describe the Proposer’s CBTC System, and the Services that the Proposer will provide to the SFMTA to meet the requirements in the Contract Specifications. Provide the following information in the order and format indicated below:

- i. A summary of the Proposer’s approach to meeting the requirements included in the Contract Specifications, incorporating the considerations from this RFP and information from the Reference Materials, and to meeting the performance levels committed to in its Proposal, including:
 - a) A description of the specific operational challenges posed by this Project and Proposer’s plan to address them, including (but not limited to) those associated with the Brownfield installation, managing separate installers, migration from ATCS during the Subway Cutover, and providing ATS for a system that runs both in a subway and on the street with road traffic.
 - b) A description of how the Proposer will support SFMTA’s operations and will ensure a collaborative partnership from Notice to Proceed until the end of the Support Term, which demonstrates the Proposer’s commitment to the Project and to partnering with SFMTA to ensure successful light rail operations in San Francisco.
- ii. A description of the proposed CBTC System and its Capabilities, including:
 - a) A description of how the fully implemented CBTC System will meet the requirements in the Contract Specifications, including the Performance Requirements submitted by the Proposer in the worksheet in Appendix J, which includes a statement confirming that the Proposer’s CBTC will comply with the Contract Specifications when Configured and Customized.
 - b) The name of the Base Product that the Proposer will use to meet the Contract Specifications.
 - c) The names of transit agencies that currently operate a CBTC system based on the Base Product or have an active contract with Proposer to install one, and contact information for the CBTC Project Manager at each of the agencies.
 - d) A description of the Functions of the Base Product that meet the Contract Specifications without Configuration or Customization.
 - e) A description of the Contract Specifications which will be met through Configuration only. A description of necessary Customizations will be provided in a separate section of the Proposal described in IV.C.3.e (Customization Effort) below.

- f) If the Proposer plans to replace any of the SFMTA-provided equipment (as listed in Section 9 (SFMTA Furnished Items) of the Contract Specifications) with its own Equipment, a description of the equipment to be replaced and an explanation of the rationale (e.g. cost savings, reliability improvement, etc.) for why the Proposer's approach needs to do this.
- iii. A description of the project management processes that Proposer applies to a contract for the design, provision, integration and testing of a CBTC System, including how the team will manage the documentation, matrices, checklists and submittals required by the Contract Specifications.
- iv. A description of Proposer's approach to integrating its System with the Siemens LRV4 onboard Equipment and systems, existing wayside Equipment, such as switch machines, and signals, as well as existing SFMTA third-party technology systems that must be integrated to the CBTC (listed in Section 28 (Interface Requirements Specifications) of the Contract Specifications).
- v. A description of Proposer's approach to meeting the requirements regarding the CBTC System's handling of Heritage and Maintenance Vehicles as specified in Sections 2.4.2 (Heritage Fleet) and 2.4.3 (Maintenance Vehicles) of the Contract Specifications.
- vi. A draft Implementation Plan containing:
 - a) A draft Project Schedule, including contractually required completion dates for the key Milestones and each Phase described in Section I.I.E (Geographic Scope and Deployment Phasing), and showing the critical path for the Project;
 - b) Assumptions made in developing the schedule, such as the number of hours the track must be available for wayside Equipment installation and System testing, the number of trains made available for installation per week, the number of days to install Equipment on each train, and other factors that may impact schedule;
 - c) Resources and support that must be provided by the SFMTA or third parties to achieve the draft Project Schedule, including the expected performance of Installers. This should include Proposer's estimate of the expected cost of additional SFMTA resources and labor necessary to deliver the CBTC System that are not included in the Contractor's price, so that SFMTA can evaluate the overall cost of the Proposer's plan.
 - d) A description of the Proposer's Migration and Cutover Plan from the existing Seltrac ATCS to the Proposer's System, including onboard the Vehicles and on the wayside. The plan should include a description of how the SFMTA will operate Revenue Service during the migration period.
- vii. A description of Proposer's certification, testing, QA and QC programs, including:
 - a) A description of the policies and procedures that the Proposer considers necessary to ensure that the third-party Installers will properly install Proposer's Equipment.

- b) A description of how QC activities will be staffed in comparison to QA activities.
 - c) A draft Safety and Security Certification Plan, demonstrating how the Proposer will meet the requirements of the California Public Utilities Commission (CPUC) for deploying, certifying, and Commissioning a train control system.
- viii. A description of Proposer’s Buy America compliance plan.

b. Support Approach

Describe the Services that the Proposer will provide to the SFMTA during the Support Term of the Contract. Provide the following information in the order and format indicated below:

- i. A draft Support plan describing in detail:
 - a) How the Proposer will provide the Support Services described in Section 32 (Support Services) of the Contract Specifications;
 - b) The ticketing/trouble call/support system and how it will meet response times as committed to at the levels Proposer entered into the worksheet from Appendix J (Performance Requirements), and the process by which SFMTA may escalate trouble calls to obtain a higher level of support;
 - c) The proposed division of maintenance roles and responsibilities between SFMTA and Proposer, along with descriptions of tasks designated as First-level, Second-level, and Third-level Maintenance;
 - d) The Software update schedule, including: the intended frequency of Software updates or patches and major Upgrades; what types of features and modifications would be included in each type of Software release; a narrative of the process methodology used by the Proposer during its regular update schedule to confirm requirements for releases; and the expected durations of standard development periods, test periods, Commissioning activities and release activities. Note: all Software Upgrades and Updates compatible with the SFMTA’s installed Equipment are included in the Support Services;
 - e) The Hardware upgrade schedule, including: where the proposed CBTC System is within the Proposer’s product lifecycle; how many years after Final Acceptance the System will no longer be considered the Proposer’s “current generation”; and the planned replacement of CBTC System components based on useful life or planned obsolescence. Note: Hardware upgrades are not included in the Support Services; this schedule instead advises the SFMTA when to make additional capital investments in its CBTC System.
- ii. A description of how the Proposer’s support program will meet the SFMTA’s operations and maintenance objectives that are described in the Concept of Operations and Maintenance in Appendix L (Technical Addenda).
- iii. A description of Proposer’s performance management program for its CBTC System, including product lifecycle, on-site support, and helpdesk support, showing how the Supplier will ensure the System continues to meet the Performance Requirements agreed to in the worksheet from Appendix J

(Performance Requirements) during the entire Support Term. The description must include:

- a) How System and Contractor performance will be monitored, reported and enforced during the Support Term.
- b) Processes or methods that Contractor will use to improve System Performance over the course of the Support Term.
- c) How Proposer will manage issues that will arise during Revenue Service that cause System Performance to deviate from the agreed Performance Requirements. Specifically address: Equipment that does not meet predicted reliability; disruptions to parts supply; defects resulting from faulty installation; Software bugs and defects; situations where the System is functioning as designed but not meeting Performance Requirements (design defects).
- d) Proposer's process for handling requests from the SFMTA for modifications to its Software, including a timeline from the moment Contractor receives a request to the point at which the modification goes live into Revenue service. Include discussion of design, engineering, development, testing, safety process, and commissioning.

c. Proposer's Experience

Describe the Proposer's experience with CBTC Systems. Provide the following information in the order and format indicated below:

- i. A brief description of the structure of the Proposer's firm and staff, including the following:
 - a) a description of the corporate structure of the Proposer's firm, or if the Proposer is a joint venture, of the lead partner's firm, addressing the corporate qualifications, technical capabilities, financial capacity, and commitment of the Proposer necessary to perform the work required by the Contract Specifications;
 - b) if Proposer is a joint venture, a description of the organization, relationships, and respective responsibilities of all partners, describing any previous projects the joint venture worked on, and demonstrating that the lead joint venture partner has experience in managing and leading a complex and long term CBTC project; and
 - c) a description of the organization, relationships, roles and responsibilities of all Subcontractors.
- ii. A narrative description of the Proposer's participation on at least two, but not more than four, projects with a size and scope most similar to the requirements stated in the Contract Specifications, and which have been in commercial operation for over two years from the date of Proposal submission. Include in the narrative the following:

San Francisco Municipal Transportation Agency
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- a) a description, with examples, of how the proposed team resolved technical and management issues involved in system integration of the Proposer's CBTC System to existing ancillary and legacy systems (including cutover from legacy ATC systems), focusing on introducing a new train control system into an existing system infrastructure and assuring proper systems integration and interface management across the entire System; and
 - b) a description, with examples, of the proposed team's management of: a complex project with multiple phases; contract modifications in accordance with FTA requirements; change order estimating and negotiation; schedule and delay analysis; and dispute analysis and review.
 - c) A sample Project Management Plan from a recent project that demonstrates the Proposer's best practices on topics such as methods and processes for project management, integration of work sites, Contract Data Requirements List (CDRL) development and review process, design reviews, engineering management, communications, decision making, and conflict resolution.
 - d) A sample design document from a recent project that represents the level of quality and content Proposer will provide for this Project.
- iii. The following information about all CBTC projects with a size and scope similar to the requirements stated in the Contract Specification, which the Proposer has worked on within the last 10 years, and which is representative of the work and performance Proposer is offering for SFMTA's Project:
- a) project name;
 - b) project scope summary;
 - c) an explanation of how the project is similar in size and scope to those required for the SFMTA's Project;
 - d) whether the project is a Brownfield project, that is, installed on an existing light rail system;
 - e) the name of the Base Product upon which the project CBTC system is based;
 - f) dates when the project was performed;
 - g) how long the CBTC system has been in revenue service;
 - h) Proposer's role and responsibilities in the project;
 - i) whether Proposer is providing support or maintenance services, and a summary of the support services provided; and
 - j) the generation of hardware and software, if applicable.
 - k) project costs;
 - l) whether the project was completed on-time and within budget, or if in progress whether project is currently on time and on budget;

- m) Proposer's staff who worked on the project, specifically identifying those individuals who the Proposer is offering to work on this Project; and
 - n) client name, reference, and contact information.
- iv. A list of all other locations and clients where the Proposer's CBTC system is currently in service (not including projects under construction), showing the following:
- a) whether the project is a Brownfield project, that is, installed on an existing light rail system;
 - b) the name of the Base Product upon which the project CBTC system is based;
 - c) how long the CBTC system has been in revenue service;
 - d) whether Proposer is providing support or maintenance services, and a summary of the support services provided; and
 - e) the generation of hardware and software, if applicable
 - f) client name.

The SFMTA may contact references to confirm the information provided in the Proposal. It is the Proposer's responsibility to ensure that all contact information for references is accurate and current, including names, telephone numbers, and email addresses. If the SFMTA is unable to reach the identified contact for a project, the SFMTA may disregard the project when scoring the Proposal.

d. Commitment of Qualified Team Personnel

Describe the commitment and qualifications of the personnel that the Proposer will deploy to the Project. Provide the following information in the order and format indicated below:

- i. Proposer's commitment of Key Personnel to this Project, including a statement identifying by name the following Key Personnel and committing that they will be located in the San Francisco Bay Area after SFMTA gives Notice to Proceed, and that the SFMTA will not be required to reimburse travel or relocation expenses to the San Francisco Bay Area:
 - a) Project Manager
 - b) Lead Engineer
 - c) Lead Vehicle Engineer
 - d) System Assurance Manager
 - e) Quality Assurance Manager
 - f) Test and Commissioning Lead
 - g) Safety and Security Manager
 - h) Technical Support Lead

- ii. An Organization and Staffing Plan which includes the following:
 - a) an organizational chart showing all personnel responsible for delivering this Project up to Final Acceptance.
 - b) the assignment of responsibility within the Proposer's team during the Procurement Term
 - c) the location of the Proposer's San Francisco Bay Area office
 - d) a description of the split of responsibilities and activities between the San Francisco Bay Area office and the Proposer's remote offices, including subcontractors.
 - e) a personnel matrix providing the following details for Key Personnel and all other personnel proposed for the Procurement Term: (1) proposed role; (2) current employer; (3) a summary of qualifications; (4) years of experience; (5) location during the Project; (6) relevant projects worked on over the past five years; (7) availability; and (8) current job assignment.
- iii. Resumes of Key Personnel containing at a minimum the following information: (1) relevant experience, starting with the most recent, including titles or positions held, dates employed, names of employers, types and size (dollar value) of projects worked on, and a description of specific roles and responsibilities; (2) education and training received, including name of school and degree earned; and (3) other pertinent credentials, including licenses with a description of the type, state registered, and date acquired. Resumes do not count toward the page count, but resumes for Key Personnel must not exceed two pages for each person. The resumes must contain sufficient information to show that the following qualifications of the proposed Key Personnel have been met:
 - a) Project Manager: 10 years of experience as a Project Manager of train control projects.
 - b) Lead Engineer: experience as a lead train control systems engineer in introducing a new train control system into existing system infrastructure on an operational railway.
 - c) Light Rail Vehicle Engineer: experience in light rail vehicle engineering, vehicle rehabilitation or retrofit, vehicle modifications after manufacture, and specific train control systems integration.
 - d) System Assurance Manager: experience supporting Reliability, Maintainability, Safety and Human Factors (RMSH) programs, including analysis, testing, and Human/Machine Interfaces (HMI) compliance aspects of the program.
 - e) Quality Assurance Manager: experience in quality control and quality assurance, including compliance with required quality standards, audits, inspections, and oversight of installation and field modifications.

- f) Test and Commissioning Lead: experience in: (1) organizing all types of CBTC tests, including static and dynamic qualification tests, shadow running, as well as acceptance tests; (2) implementing and executing a failure reporting and corrective action system; and (3) addressing challenges and preparing solutions when integrating into or cutting over to a new system.
 - g) Safety and Security Lead: experience supporting project safety and security certification plans, including preparing and reviewing hazard analyses, threat and vulnerability analyses, and leading safety reviews for train control projects.
 - h) Technical Support Lead: experience providing as-needed specialty support to maintain the operational performance of CBTC systems.
- iv. A staffing plan for Support Services, including training, that are required by Contract Specifications, Section 32, that includes:
- a) a matrix describing the positions proposed for the Support Services, with the following information provided for each position: (1) the required services the position will provide; (2) the availability and physical location of the personnel in the position; and (3) the required experience and qualifications for the personnel in the position.
 - b) a schedule of dates, times and days in which the Proposer's System Support Specialist will be working on the SFMTA's premises.
 - c) a description of the organization of one of Proposer's current maintenance and support teams and resumes of the staff of that team.
 - d) a description of the depth of resources of the Proposer with respect to the Support Services the team will be required to provide
- e. Customization Effort

Describe all Customizations necessary for the Proposer's CBTC system to meet the Contract Specifications. The Proposer will also estimate the cost of these Customizations and include this estimate in Part 5, the Price Proposal. Provide the following information in the order and format indicated below:

- i. Complete and submit the Functionality Assessment worksheet from Appendix K (Functionality Assessment), following these instructions:
 - a) List all Customizations from the Base Product necessary for the final designed System to meet all of the functional and technical requirements described in the Contract Specifications. If any modification to the Base Product could prevent the System from receiving regular version Upgrades, both minor and major releases, it must be identified as a Customization on the worksheet
 - b) Describe the level of Customization required. Definitions of low, moderate and high Customizations are in Section I.I (Definitions) of this RFP. If multiple requirements in the same section require Customization, assess them together. For example, if three requirements in the same section would each

increase the development schedule by 2 months, for a total of 6 months, mark “Moderate”. If customizing the Base Product to meet all three requirements would take a total of 2 months, mark “Low”.

- c) Attach a statement that explains, for each row indicated as requiring Customization, why the requirements from the applicable section can only be met through Customization. Include an estimate the overall reduction of the length of the schedule included in its Implementation Plan submitted in response to IV.C.3.a.iv. if the Proposer did not have to perform the Customizations necessary to meet the Contract Specifications. The SFMTA will verify statements made in this Proposal about Customization and include those statements in the Contract requirements.
- ii. Include a written narrative describing the Proposer’s approach to Customization, including any impacts such Customization may have on the lifecycle management of the System, Proposer’s ability to provide the Support Services following Final Acceptance, or the System’s ability to meet other requirements in the Contract Specifications.
- iii. Describe how much Customization will be necessary to allow the Proposer’s CBTC System to operate in both ATO territory and street-running territory and transition between the two modes.

f. Performance Requirements

Describe the Performance Requirements that Proposer agrees to meet. Provide the following information in the order and format indicated below:

- i. The completed worksheet from Appendix J (Performance Requirements). The values entered into this worksheet will be incorporated into the Contract and will be used during the RAM Demonstration as Performance Targets to measure achievement of performance during Revenue Service operations and maintenance. In addition, a portion of the Support Services fee will be adjusted based on the Contractor and their System’s actual performance as compared to these Performance Targets. Follow these instructions in completing Appendix J (Performance Requirements):
 - a) System Reliability, Availability, and Maintainability Objectives. Proposer must enter its committed objectives into the Appendix J (Performance Requirements) worksheet. The values stated by the Contractor will replace the suggested values in Table 30-1 as a Contract Document.
 - b) Response Times. The Proposer must enter its committed maximum allowable number of hours elapsed between the time a trouble call is first reported and the first response of corrective action. These values are per-trouble call. These response times may vary based on the Urgency Levels defined in Section I.I (Definitions)
 - c) Root Cause Disposition. The Proposer must enter its committed maximum allowable number of hours elapsed from the time a trouble call is reported until a root cause is determined and communicated to the SFMTA. These values are per-

trouble call. These response times may vary based on the Urgency Levels defined in Section I.I (Definitions)

- d) **Resolution Time.** The Proposer must enter its committed maximum allowable number of hours elapsed between the time a trouble call is reported to the time the issue is resolved. “Resolution” can mean a reduction in Urgency Level. For example, if a workaround is established to address an “Urgent” issue such that trains are no longer delayed but additional operational procedures are necessary, the “Urgent” issue can be marked as resolved, and a “Priority” issue opened until a permanent fix restores Functionality. These values are per-trouble call. These response times may vary based on the Urgency Levels defined in Section I.I (Definitions)
- e) **Software Releases.** The Proposer must commit to providing regular Software releases (i.e., updates, patches and upgrades) during the Support Term. The Proposer must specify the frequency of the Software release program it will offer SFMTA.
- ii. A description of the assumptions and calculations made by the Proposer in completing Appendix J (Performance Requirements).

4. Part 4 – Betterments Proposal

Proposers may propose Betterments, which will be treated as priced offers for changes to the Contract requirements. The SFMTA has the discretion to accept Betterments where in the opinion of the SFMTA the Betterments provide a benefit to the SFMTA. Betterments do not have to result in Contract cost savings; they may provide benefits to SFMTA’s operations or maintenance such that cost savings or efficiency improvements manifest in other areas. The SFMTA reserves the right to accept or reject any proposed Betterment for any reason.

a. Types of Proposed Betterments

A Proposer may offer enhancements to its Base Product, or features in its Base Product which are not included in the SFMTA’s Contract Specifications, as Betterments. A Proposer may also offer to supply more Equipment than is required by the Contract Specifications as Betterments.

A Proposer may also offer Betterments to the SFMTA’s project delivery approach which represent process improvements. These Betterments may include alternatives to proposed management, schedule and payment approaches contained in the Contract Specifications, or changes to the terms and conditions found in the Sample Agreement or Contract Specifications.

b. Submission Requirements for Betterments

For each Betterment offered, the Proposer will provide the following information in the order and format indicated below:

- i. Description: A narrative description of the proposed Betterment and conceptual drawings or other descriptive information, as appropriate. The narrative should summarize the benefit to the SFMTA if it accepts the Betterment.
- ii. Experience: describe how the proposed Betterment has been implemented on other CBTC systems and the results of the implementation.
- iii. Quality: explanation of how the Betterment will improve the quality of the CBTC System compared to the existing Contract requirements.
- iv. Schedule impacts to the delivery of the CBTC System.
- v. Anticipated life: Changes, if any, in the anticipated life of the item (or items) that are affected by the Betterment.
- vi. Effect on Operations and Maintenance: Any change in operations and maintenance requirements associated with the Betterment, including greater ease and lower cost of maintenance.
- vii. Change to Contract Requirements: proposed revision to the Contract, identifying both specific text to be added to and specific text to be deleted from the Contract.
- viii. Accompanying modifications (if any) to the proposed Reliability, Availability, Maintenance and Safety targets.
- ix. Price: revised Appendices F.1 and F.2 (Table 3 only) showing the proposed increase or decrease in the price of the Contract if the SFMTA accepts the Betterment. Proposer may also include an estimate of cost savings, other than the Contract price, the SFMTA should expect to realize if it accepts the Betterment.

5. Part 5 – Price Proposal

Proposer must submit a Price Proposal as a separate electronic file that includes the information requested and is in the format in Appendix F (Price Proposal). The Price Proposal form has separate sections for the procurement price and for the support price.

The Price Proposal must include:

- a. Table I: Total System Procurement Price. The total price to deliver Proposer's fully functional CBTC System as described in the Contract Specifications, which shall include all costs to perform all Services required by the System Procurement Phases of the Contract. The Proposer's total price for System Procurement must be broken down into labor and Material costs for each of the Phases identified in in Section II.E (Geographic Scope and Deployment Phasing).
- b. Table II: Pricing for Procurement Options. Pricing for the optional per-Vehicle Fitment fees for additional LRV4, Heritage and Maintenance Vehicles as described in Section II.G (Optional Scope).
- c. Table III: Support Services Prices, including two 5-year term extension options. 10% of this Support Fee will be variable depending on System performance using an agreed upon calculation based on System availability. An additional 10% of this Support Fee will be variable based on the Supplier's performance as it relates to providing Support Services. The remaining 80% of the fee is not tied to System performance. The formula to be used to calculate the variable portions of the Support Fee are included in Appendix B2 (Calculation of Charges) to the Sample Agreement.

- d. Table IV: Hourly Labor Rates for Additional Work. Hourly rates for labor for the purposes of calculating additional design/Software work constituting a change order, as provided in Section 12.5 (Modification of this Agreement) of the Sample Agreement. The Proposer shall list every position that appears in the organizational chart submitted as required by Section IV.C.3.d.
- e. Table V: Spare Part Price Sheet. Price sheet for billing Reimbursable Parts under the terms provided in Appendix B2.2.3 (Monthly Support Fee Calculation) of the Sample Agreement. While spare parts are normally included in the Support Services price in the Monthly Support Fee, these prices will be applied to spare parts replaced under certain circumstances defined in Section 32.4.1 (Provision of Equipment and Spare Parts) that are not included in the Support Services price.
- f. Table VI: Specific Included Costs. Proposer must provide the total estimated cost of Customizing the Proposer's Base Product to meet all Contract Specifications and the cost of providing performance bonds. Customization costs must be included in the price entered into Table I, such that if the Total Procurement Price from Table I were reduced by the cost entered into Table VI, Line 1 this would represent the cost of procuring the Proposer's Base Product (without Customization). If no Customization is required to meet all the requirements from the Contract Specifications, state "No Customization" on this form.
- g. Table VII: Detailed Cost Breakdown for System Procurement. Provide the detailed cost breakdown based on the requested categories that total to the complete System Procurement Price. Table VII requires the Proposer to provide the labor costs, quantity, and cost of Materials and individual components for the listed categories that make up the total fixed Price Proposal.

All prices/fees/costs/rates entered in Appendix F (Price Proposal) must be stated in 2023 U.S. dollars, which will be adjusted as described in Section B2.3.2 (Economic Price Adjustment) of the Sample Agreement for inflation over the term of the Agreement.

The prices in Tables I-V will be used to establish the payments due under the Agreement. Appendix B (Price Schedule and Calculation of Charges) of the Sample Agreement describes the methods used for the calculation of charges. Appendix C (Milestone Schedule) of the Sample Agreement contains a table establishing the payment Milestones and the percent of the procurement prices from Table I to be awarded at each Milestone. Appendix N (Sample Support Calculations) to this RFP provides examples to aid in the Proposer's understanding of how the Performance Targets and prices included in the Proposal will be used to determine the support payment each month.

6. Part 6 –Small Business Enterprise Program Proposal

Submit completed and signed forms in RFP Appendix A, "SFMTA SBE Requirements for Architects, Engineers, Planners, Environmental Scientists and Other Professional Services Contracts," as instructed in Section IX.Q (SBE Non-Discrimination) of this RFP. The SBE Program Proposal will be evaluated for compliance with SBE requirements as part of the Initial Screening described in Section V (Evaluation and Selection Criteria) below.

V. Evaluation and Selection Criteria

A. Summary of Negotiated Procurement Evaluation Process

The SFMTA will use negotiated procurement procedures to evaluate the Proposals and select a Contractor. The negotiated procurement evaluation process is set out in Appendix O (Negotiated Procurement Procedure).

B. Scoring

The evaluation process will consist of the evaluation phases specified below with the following allocation of points. Points will be awarded based on the Selection Criteria described below.

Evaluation Factor	Maximum Points
1. Initial Screening	Pass/Fail
2. Minimum Qualifications	Pass/Fail
3. Technical Proposal	
Completeness and Organization of Proposal Submission	5
Project Procurement Approach	20
Project Support Approach	15
Proposer's Experience	10
Qualifications of Team Personnel	10
Customization Effort	5
Performance Requirements	15
4. Betterments	5
5. Price	10
6. Oral Interview	5
TOTAL	100

C. Evaluation Process

The SFMTA will conduct the evaluation of Proposals using the following process.

1. Initial Screening (Pass/Fail)

SFMTA staff will review each Proposal for initial determination of responsiveness. Elements reviewed will include: Proposal completeness, compliance with format requirements, statements affirming Proposer's compliance with Minimum Qualification requirements, compliance with SBE requirements, and substantial agreement with the material terms and conditions in Appendix B (Sample Agreement), and submittal and completion of required forms. The Initial Screening may also determine whether a Proposer is responsible

The SFMTA will not score Proposals during the Initial Screening but will determine on a "pass/fail" basis whether a Proposal meets the threshold requirements described above. The SFMTA may deem non-responsive any Proposal that fails to meet these requirements. Non-responsive Proposals will not be scored or further evaluated. The SFMTA reserves the right to request clarifications from a Proposer prior to rejecting a Proposal as non-responsive.

The SFMTA may determine at any time during the selection process that a Proposal is not responsive. The SFMTA may determine at any time that a Proposer is not responsible.

Any corporation or joint-venture partnership that includes any corporation that is prohibited from receipt of Contract award by United States Code, Chapter 49, Section 5323(u) (49 U.S.C. sec. 5323(u)) or other applicable federal law or is otherwise prohibited from being awarded the Contract is not responsible, and such corporation should not submit a Proposal.

2. Minimum Qualifications (Pass/Fail)

The SFMTA Evaluation Committee will evaluate Proposals on a pass/fail basis to determine whether the response and submitted documentation meets the MQ requirements set out in Section III (Minimum Qualifications). Proposer must receive an evaluation of Pass on all six MQs to be eligible for the next stage of evaluation.

3. Technical Proposal

The Evaluation Committee will evaluate and score responsive Proposals using the criteria described below.

a. Completeness and Organization of Proposal (5 points)

A Proposal will receive a higher score to the extent that:

- i. The content of the Proposal concisely but comprehensively addresses RFP requirements in Section IV (Submission Requirements).
- ii. The Proposal is professionally presented and organized in accordance with requirements in Section IV.

- iii. The Proposal is clear and easy to understand. Arguments are logically presented and organization is easy to follow.

b. Project Procurement Approach (20 points)

A Proposal will receive a higher score for Project Procurement Approach to the extent that:

- i. The Proposer's approach summary clearly and convincingly articulates how the SFMTA's requirements will be met at the performance levels Proposer has committed to in this Proposal. Scoring will consider
 - a) How well the summary accounts for the SFMTA's operating environment, challenges, and needs, and reflects the information and constraints provided in Appendix L (Technical Addenda).
 - b) How well the summary articulates the Project's operational challenges and provides a clear plan to address them
 - c) How well the summary demonstrates the Contractor's commitment to the Project and to a long-term partnership with the SFMTA.
- ii. The proposed CBTC System meets the requirements stated in the Contract Specifications. Scoring will consider:
 - a) How well the proposed CBTC System meets the Contract Specification requirements.
 - b) How well the Base Product is operating where installed.
 - c) How many of the Contract Specification requirements can be met by the Base Product and Configuration without requiring Customization.
 - d) Benefits and risks of proposed replacement of SFMTA-provided equipment
- iii. The Proposer's project management processes increase the likelihood of success of the Project. Scoring will consider how well those processes are consistent with industry best practices for project management and emphasizes strong collaboration between the Proposer and its client.
- iv. The proposed CBTC System integrates well with the LRV4 onboard Equipment and systems, wayside Equipment, and systems, and existing SFMTA technology systems. Scoring will consider:
 - a) The extent to which the integration approach meets the SFMTA's integration goals stated in the Contract Specifications and reflects the information and constraints provided in Appendix L (Technical Addenda).
 - b) The technical feasibility of the integration approach.
- v. The proposed solution for the Heritage and Maintenance Vehicles meets the SFMTA's requirements and is technically feasible.
- vi. The Implementation Plan meets the SFMTA's schedule requirements while accounting for the SFMTA's constraints. Scoring will consider:

- a) The likelihood that the Implementation Plan will deliver the System while meeting the schedule Milestones provided in Section II.E (Geographic Scope and Deployment Phasing).
 - b) The soundness of assumptions made in developing the schedule, including the resources and support expected from SFMTA or third parties to achieve the proposed Project schedule.
 - c) The extent to which Proposer anticipates likely risks in the plan to manage migration and cutover from the existing Seltrac train control system to the Proposer's System, including how this migration plan will affect the SFMTA's operations and minimizes disruptions to SFMTA's service.
- vii. The Proposer offers certification, testing, and QA/QC programs that increase the likelihood of a successful installation of its CBTC System. Scoring will consider:
- a) How well policies and procedures enforce quality in installation by other contractors and demonstrate Proposer's assumption of responsibility for future System performance.
 - b) How efficient and minimally burdensome the programs and procedures are.
 - c) How well the proposed policies and procedures work within the SFMTA's policies and procedures, especially the Track and Tunnel Access Procedures included within Appendix B (Sample Agreement), and are flexible in response to schedule conflicts and changes which may arise during the course of rail operations.
 - d) How well the draft Safety and Security Certification Plan meets CPUC requirements for deploying, certifying, and Commissioning a train control system.
- viii. The proposed CBTC System will comply with Buy America provisions. Scoring will consider
- a) The feasibility of the proposed compliance approach.
 - b) The extent to which the compliance approach demonstrates Proposer's full understanding of the Buy America provisions as applied to this Project.

c. Project Support Approach (15 points)

A Proposal will receive a higher score for Project Support Approach to the extent that:

- i The draft Support Plan demonstrates a commitment to a long-term partnership with the SFMTA in supporting the CBTC System. Scoring will consider:
 - a) The extent to which the Proposal demonstrates the Proposer will meet all Support Services requirements stated Contract Specifications, Section 32.
 - b) The Proposer's responsiveness and commitment to customer support and service based on the ticketing/trouble call/support system and how it supports the guaranteed response times.

- c) The extent to which the proposed division of maintenance roles and responsibilities between the SFMTA and the Proposer is consistent with the SFMTA's current maintenance organization.
 - d) The extent to which the Proposer's Software update schedule demonstrates a commitment to ensure that the SFMTA CBTC System stays up to date with the latest security and OS updates, as well as product upgrades and improvements.
 - e) The extent to which the Proposer's Hardware upgrade schedule demonstrates a plan to keep the SFMTA CBTC current with the pace of advancement of the Proposer's product line, as shown by the Schedule's identification of the years of useful life before planned obsolescence for major System components and subsystems, and by the Hardware upgrade schedule having a clear relationship with the Software update schedules.
- ii. The Proposer's approach to meeting the SFMTA's operations and maintenance objectives supports and reinforces those objectives. Scoring will consider how well the proposed Support Services will integrate with the SFMTA's operations and maintenance organization and are consistent with the SFMTA's maintenance vision as described in the Concept of Operations and Maintenance in Appendix L1 (Concept, Plan, and Interface Documents).
 - iii. The Proposer's performance management program demonstrates that the Proposer's CBTC System will meet the agreed-upon Performance Requirements during the entire Support Term. Scoring will consider:
 - a) The extent to which the Proposer will monitor, report, enforce and correct System performance.
 - b) The quality of the program to improve System performance reliability, availability, and maintainability over the course of the Support Term.
 - c) The ability of the program to manage issues that may seriously hinder SFMTA's ability to provide satisfactory service to its passengers.
 - d) The efficiency and speed with which the Proposer will handle requests for Software modifications.
- d. Proposer's Experience (10 points)

A Proposal will receive a higher score for Proposer's Experience to the extent that:

- i. Prime Contractor and subcontractors have the corporate qualifications, technical capabilities, financial capacity, and commitment to perform the work required by the Contract Specifications.
- ii. The Proposer has successfully delivered projects that are comparable to the Project, as demonstrated by the narrative description of the projects with a size and scope most similar to the requirements stated in the Contract Specifications. Scoring will consider:

- a) The extent to which the Proposer invests in achieving its clients' service and performance goals;
 - b) Evidence that the Proposer works with its client to resolve issues collaboratively.
 - c) Evidence of a mutually beneficial relationship between the Proposer and its client.
 - d) How well the sample Project Management Plan demonstrates application of the processes included in the narrative description, and shows evidence of an organized, efficient and collaborative project management approach.
 - e) The overall quality of the sample design document which demonstrates attention to detail, clear presentation, technical rigor, and is evidence of an organized and efficient design process.
- iii. Proposer has a greater quantity and a higher quality of experience with CBTC projects that have a size and scope similar to the requirements stated in the Contract Specifications.
 - iv. Proposer has a greater quantity and a higher quality of experience with all types of CBTC projects.
- e. Commitment of Qualified Team Personnel (10 points)

A Proposal will receive a higher score for Commitment of Qualified Team Personnel to the extent that:

- i. Key Personnel are identified and committed to work on this Project, will be located in the San Francisco Bay Area after SFMTA gives Notice to Proceed. If at any time after submission of the Proposal and before the final approval of the contract by the City of San Francisco, the Proposer learns that a proposed Key Personnel will be unable to meet this commitment, the Proposer must immediately notify the SFMTA, propose a substitute Key Personnel, and provide a resume as required in Section IV (Submission Requirements). The SFMTA may then re-evaluate and re-score the Proposal based on the qualifications of the substitute.
- ii. The Organization and Staffing Plan commits the Proposer to providing highly qualified personnel located in the Proposer's San Francisco office to support the Project. Scoring will consider:
 - a) How the Proposer splits responsibilities and activities between the Proposer's San Francisco office and the Proposer's remote offices, including subcontractors.
 - b) The accessibility of the San Francisco office to SFMTA staff.
 - c) The number of Key Personnel and other personnel who will be based on in the San Francisco office during the Project.
 - d) The qualifications and experience of the personnel who will be based in the San Francisco office

- iii. Resumes of the proposed Key Personnel show that the Key Personnel meet and exceed the desired experience for each position described in Section IV.c.3.d.iii.
 - iv. The staffing plan for Support Services shows that the Proposer will meet the requirements of Section 32 (Support Services) of the Contract Specifications.
- f. Customization Effort (5 points)

A Proposal will receive a higher score for Customization Effort to the extent that:

- i. Its Appendix K worksheet indicates it will require less Customization to meet SFMTA's requirements than other Proposers.
 - ii. Its written narrative describes Customizations which do not preclude the SFMTA from receiving regular Software upgrades and updates for its CBTC System; and which do not adversely affect the System lifecycle plan or make it more difficult for SFMTA to obtain service or spare parts during the Contract Term.
 - iii. Less Customization is necessary to allow the Proposer's CBTC System to operate in both ATO territory and street-running territory and transition between the two modes.
- g. Performance Requirements (15 points)

The Performance Metrics Evaluation Criteria includes two scores: System Performance Score and Resolution Score.

A Proposal will receive a higher System Performance Score, up to a maximum of 10 points, to the extent that its Availability Target in the worksheet from Appendix J (Performance Requirements) is higher than other Proposers.

A Proposal will receive a higher Resolution Score, up to a maximum of 5 points, to the extent that its Weighted Resolution Value is lower than other Proposers. The SFMTA will calculate the Weighted Resolution Value as a weighted sum of the values proposed in Appendix J for Resolution Times. The Routine time will be multiplied by one, the Priority time will be multiplied by two, and the Urgent time will be multiplied by 2000. The sum of the three amounts will be the Proposer's Weighted Resolution Value.

The other values from Appendix J (Performance Requirements) will be evaluated for reasonableness relative to the Availability and Resolution Time Targets. SFMTA may deduct points for values it considers unreasonable or incongruous with the System Performance Score and Resolution Score.

4. Betterments (5 points)

The SFMTA will award up to a maximum of five points to Proposers who offer Betterments in their written Proposals that the SFMTA agrees will add value to the SFMTA.

5. Price Proposal (10 points)

The maximum of 10 points will be awarded to the Proposal with the lowest total evaluated price, based on the prices as entered in Appendix F (Price Proposal), Tables I-V, including all options.

The SFMTA intends to award this Contract to the Proposer it determines will provide the best value to the Agency. **The SFMTA reserves the right to award the Contract to a Proposer other than the Proposer that submits the lowest-priced Proposal.**

6. Oral Interview (5 points)

Following the evaluation of the Proposals, Proposers that are determined to be within the competitive range (see Appendix O (Negotiated Procurement Procedures)) will be interviewed by the Evaluation Committee.

The interview will consist of standard questions asked of each interviewee and may also include specific questions of individual Proposers intended to clarify their written Proposals. The Evaluation Committee may award up to five points for Proposers' response to interview questions, based on the extent to which the Proposer demonstrates a sound understanding of Project requirements and the SFMTA's transit operating environment, and how those elements relate to the Contractor's design, procurement, implementation, testing, certification and long-term support of its CBTC System.

The SFMTA reserves the right not to hold oral interviews and select a firm based on the submitted Proposals only.

D. Request for Best and Final Offer

The SFMTA's process for requesting and evaluating Best and Final Offers is described in Appendix O (Negotiated Procurement Procedures).

VI. Pre-Proposal Communications

A. Pre-Proposal Conference

The SFMTA encourages Proposers to attend a Pre-Proposal Conference on **February 23, 2023 at 9:00 AM**. The SFMTA will address Proposers' questions and will provide any new or additional information concerning the RFP or selection process at the Pre-Proposal Conference. The Pre-Proposal Conference will be conducted in-person at SFMTA's offices at 1 S. Van Ness Avenue, San Francisco, CA 94102 and remotely via teleconference at the same time. Attendees may opt to attend virtually or in-person, however, firms are encouraged to have at least one representative attend in-person.

After the Pre-Proposal Conference, the SFMTA will give tours of both Control Centers (TMC and OCC), as well as make LRV4 and wayside Equipment available for inspection. Tours will be for in-person attendees only. Proposers are encouraged to bring technical staff.

For the Pre-Proposal Conference, Proposers are encouraged to submit questions in writing by email no later than **February 9, 2023 at 5:00 PM** and directed to: Kathy.Larson@sfmta.com.

Proposers are further encouraged to provide the following information to Kathy.Larson@sfmta.com to register for the Pre-Proposal Conference and have their contact information listed on the virtual sign-up list.

1. Attendee Name
2. Organization Name
3. Organization's Business Address
4. Email/Phone Contact Information
5. Indicate if your firm is a Small Business Enterprise (SBE)
6. Indicate if your firm is interested in submitting a Proposal as a prime Contractor, subcontractor or both.
7. Indicate if attendee will be in-person or remote.

The Pre-Proposal Conference will begin at the time specified, and company representatives are urged to arrive on time. Topics already covered will not be repeated for the benefit of late arrivals. **Failure to attend the Pre-Proposal Conference will not excuse the Contractor from any obligations of a contract awarded pursuant to this RFP.** Any change or addition to the requirements contained in this RFP as a result of the Pre-Proposal Conference will be executed by a written Addendum to this RFP. (See Section IX.E. (RFP Addenda) below).

B. Proposer Questions and Requests for Clarification

Proposers must submit questions and requests for clarification by email to the Contract Administrator whose name and contact information appears on the cover page of this RFP no later than the deadline for submission of written questions or requests for clarification as stated in Section I.E (RFP Schedule). Questions shall be submitted using the form provided in Appendix P (RFP Question Form).

The SFMTA may issue written Addenda either in response to Proposers' questions or by the SFMTA's own initiation, which the Agency will post on the City's Suppliers Portal at

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<https://sfcitypartner.sfgov.org/pages/Events-BS3/event-search.aspx>.. It is the responsibility of each Proposer to check the City’s Supplier Portal for any Addenda and other updates to this RFP.

All communications regarding the RFP must be directed in writing to the Contract Administrator whose name and contact information appears on the cover page of this RFP:

Communications should reference “SFMTA-2022-40-FTA” in the subject line of Proposer’s email or letter.

VII. Contract Award

The SFMTA will evaluate and rank Proposals as described herein, and intends to invite the highest-ranked Proposer to negotiate a final contract, which will be an Agreement substantially similar to the Sample Agreement attached hereto as Appendix B. The Agency's ranking of any Proposal or invitation to any Proposer to negotiate a contract does not imply acceptance by the SFMTA of all terms of the Proposal, which may be subject to further negotiations and are subject to SFMTA Board and Board of Supervisors' approvals before the SFMTA may be legally bound thereby. If a satisfactory contract cannot be negotiated within a period of time deemed reasonable to the SFMTA, then the SFMTA, in its sole discretion, may terminate negotiations with that Proposer and begin contract negotiations with the next highest-ranked Proposer.

After completing Contract negotiations, if the Contractor fails to timely execute the negotiated Agreement, or to provide insurance certificates and policy endorsements, bonds or other required materials, the SFMTA may deem the selected Proposer to have abandoned its Proposal and rejected the Contract, and the SFMTA, in its sole discretion, may select another Proposer.

VIII. Insurance and Performance Bond

A. Insurance

The selected Proposer must provide evidence of, or confirm that it can obtain, the insurance as specified below and in Article 6 (Insurance and Indemnity) of the Sample Agreement.

B. Performance Bonds

The selected Proposer shall provide evidence of, or confirm that it can obtain, a performance bond as specified below and in Section 5.13 (Bond Requirements) of the Sample Agreement.

C. Failure to Provide Insurance and/or Guarantee

Unless otherwise stated, the Contractor shall deliver the required bonds and/or specified insurance certificates and policy endorsements to the SFMTA within 30 Days of the SFMTA's issuing a Notice of Contract Award. Proposer's providing said bonds and insurance certificates is a condition precedent for the SFMTA's issuing Notice to Proceed. If the Proposer fails or refuses to provide the required bond and/or insurance certificates within the 30 Days of the date stated on the Notice of Contract Award, the SFMTA may determine that the Proposer has abandoned its Proposal.

IX. Terms and Conditions for Receipt of Proposals

A. Cybersecurity Risk Assessment

As part of the evaluation process, the SFMTA may require a Cybersecurity Risk Assessment (CRA) for a Proposer or any Proposer-related entity that would have access to the City's or the SFMTA's networks and systems under the resulting Contract, including any Proposer-related entity that manufactures the technology and/or performs Functions related to the technology services being procured.

As part of the CRA, the SFMTA will accept either of the following two reports:

1. **SOC-2 Type 2 Report:** Report on Controls at a Service Organization Relevant to Security, Availability, Processing Integrity, Confidentiality or Privacy; or
2. **City's Cyber Risk Assessment Questionnaire :** Proposer's responses to a SFMTA's Cyber Risk Assessment Questionnaire.

The SFMTA may request these reports when considering a Proposer for selection or after selection. If so requested, the SFMTA will evaluate the reports and identify for Proposer any cyber risks that would require mitigation prior to selection or within a period of time that the SFMTA deems reasonable after selection. If awarded the Contract, Proposer's compliance with such mitigation measures will be subject to the SFMTA's on-going review and direction.

B. Errors and Omissions in RFP

Proposer is responsible for reviewing all portions of this RFP. Proposer must promptly (but no later than the deadline for questions) notify the Contract Administrator, in writing, if the Proposer discovers any ambiguity, discrepancy, omission, or other error in the RFP. Proposer should direct any such notification to the SFMTA promptly after discovery, but in no event later than the deadline for questions. The SFMTA will issue modifications and clarifications to the RFP as Addenda as provided below.

C. Inquiries Regarding RFP

All communications regarding the RFP shall be made in accordance with the procedures in Section VI.B (Proposer Questions and Requests for Clarifications) of this RFP.

D. Objections to RFP Terms

Should a Proposer object on any ground to any provision or legal requirement set forth in this RFP, the Proposer must, no later than the deadline for questions, provide written notice to the SFMTA setting forth with specificity the grounds for the objection. The failure of a Proposer to object in the manner set forth in this paragraph constitutes a complete and irrevocable waiver of any such objection.

E. RFP Addenda

The SFMTA may modify this RFP, prior to the Proposal due date, by issuing an Addendum to the RFP, which will be posted on the City's Supplier Portal. Every Addendum will create a new version of the Sourcing Event (RFP) webpage, and a Proposer must monitor the City's Supplier Portal for new versions. **The Proposer is responsible for ensuring that its Proposal reflects any and all RFP Addenda issued by the SFMTA prior to the Proposal due date regardless of when the Proposal is submitted.** Therefore, the SFMTA recommends that the Proposer consult the website frequently, including shortly before the Proposal due date, to confirm that the Proposer has downloaded all RFP Addenda. It is the responsibility of the Proposer to check for any Addenda, Questions and Answers documents, and updates, which may be posted to the subject RFP.

EXCEPT AS EXPRESSLY PROVIDED IN THIS RFP, BY SUBMITTING A PROPOSAL, A PROPOSER INDICATES ITS ACCEPTANCE AND AGREEMENT TO ALL TERMS AND CONDITIONS STATED IN THIS RFP.

F. Proposal Term; Bid Validity

Following the parties' completion of Contract negotiations, it will take four to six months to obtain approval of the SFMTA Board of Directors and the San Francisco Board of Supervisors. Proposer's submission of a Proposal is agreement that the Proposal, including the proposed scope of Services and prices for the Services stated in the Proposal, will be valid for a minimum of 180 calendar days from date the SFMTA and the Contractor complete contract negotiations. Proposer further represents and warrants that its Proposal and proposed prices are genuine and not the result of collusion or any other anti-competitive activity. At Proposer's election, the Proposal may remain valid beyond the 180-day period by agreement of the parties.

G. Revision to Proposal

Proposer may revise its Proposal on the Proposer's own initiative at any time before the deadline for submission of Proposals. The Proposer must submit a revised Proposal in the same manner as the original. A revised Proposal must be received on or before the Proposal due date and time.

In no case will a statement of intent to submit a revised Proposal, or commencement of a revision process, extend the Proposal deadline for any Proposer.

At any time during the Proposal evaluation process, the SFMTA may require a Proposer to provide oral or written clarification of its Proposal. The SFMTA reserves the right to make an award without requesting such further clarification.

H. Proposal Errors and Omissions

Failure by the SFMTA to object to an error, omission, or deviation in the Proposal will in no way modify or waive any requirements stated in the RFP or excuse the Proposer from full compliance with the specifications of the RFP or any contract awarded pursuant to the RFP.

I. Financial Responsibility

The SFMTA shall not have any liability or other financial responsibility for any costs incurred by a Proposer in preparing a Proposal or otherwise responding to this RFP. Proposer acknowledges and agrees that its submissions in response to this RFP will become the property of the City and may be used by the City in any way it deems appropriate. Proposer's submission of a Proposal indicates its agreement to provisions.

J. Proposer's Obligations under the Campaign Reform Ordinance

Proposer must comply with Section 1.126 of the S.F. Campaign and Governmental Conduct Code. Local law prohibits City elected officials from soliciting or accepting contributions from any person or entity seeking to enter into a contract or grant worth \$100,000 or more with the City, if the contract or grant requires its approval or the approval of its appointees to the board of a state agency. This restriction applies to the party seeking the contract or grant, the party's board of directors, chairperson, chief executive officer, chief financial officer, chief operating officer, any person with an ownership interest greater than 10 percent, and any political committees controlled or sponsored by the party, as well as any subcontractors listed in the awarded contract or Proposal. The law both prohibits the donor from giving contributions and prohibits the elected official from soliciting or accepting them.

A person or entity that contracts with the City may not make a campaign contribution to an elected official if the contract would require approval by that official, a board on which the official serves, or a board of a state agency on which an appointee of the official sits. The people and entities listed in the preceding paragraph may not make a campaign contribution to the elected official at any time from the submission of a Proposal for a contract until either: (1) negotiations are terminated and no contract is awarded or no grant is approved; or (2) 12 months have elapsed since the award of the contract or approval of the grant.

A violation of Section 1.126 may result in the criminal, civil, or administrative penalties. For further information, Proposer should contact the San Francisco Ethics Commission at [\(415\) 252-3100](tel:4152523100).

K. Limitation on Communications Prior to Contract Award

It is the policy of the SFMTA that only the SFMTA staff identified in the RFP as contacts for communication concerning this RFP are authorized to respond to comments or inquiries from Proposers or potential Proposers seeking to influence the contractor selection process or the award of the contract. This prohibition extends from the date the RFP is issued until the date when the contractor selection is finally approved by the SFMTA Board of Directors and the San Francisco Board of Supervisors.

All Proposers and their subcontractor(s) are hereby notified that they may not contact any SFMTA staff member other than the person(s) identified in the Section ____ of this RFP as the authorized contact, for the purpose of influencing the selection process or the award of the contract from the date the SFMTA issues the RFP to the date when the Contract award is approved by the SFMTA Board of Directors and the San Francisco Board of Supervisors. This

prohibition does not apply to communications with SFMTA staff members regarding normal City business not regarding or related to this RFP.

Any written communications sent to one or more members of the SFMTA Board of Directors concerning a pending contract solicitation will be distributed by the SFMTA to all members of the SFMTA Board of Directors and the designated staff contact person(s) identified in the RFP.

Except as expressly authorized in the RFP, where any person representing a Proposer or potential Proposer contacts any SFMTA staff for the purpose of influencing the content of the competitive solicitation or the award of the contract between the date when the RFP is issued and the date when the final selection is approved by the SFMTA Board of Directors, and, if required, by the San Francisco Board of Supervisors, the Proposer or potential Proposer may be disqualified from the selection process. However, a person who represents a Proposer or potential Proposer may contact City elected officials and may contact the Director of Transportation of the SFMTA if s/he is unable to reach the designated staff contact person(s) identified in the RFP or wishes to raise concerns about the competitive solicitation.

Proposers and their subcontractor(s) are prohibited from providing any gifts, meals, transportation, materials or supplies or any items of value or donations to or on behalf of any SFMTA staff member at any time.

All lobbyists or any agents representing the interests of a Proposer (including prime contractors and subcontractor(s)) are also subject to these prohibitions.

Proposer must submit with its Proposal an executed Attestation of Compliance (see Appendix C) certifying compliance with these requirements. The Attestation of Compliance must be signed by all firms and subcontractor(s) named in the Proposal. A Proposal that does not include the executed Attestation of Compliance as required by this section will be deemed non-responsive and will not be evaluated. Any Proposer who violates the prohibitions of this section, directly or through an agent, lobbyist or subcontractor, will be disqualified from the selection process.

L. Public Disclosure

Documents in the possession of the SFMTA or the City concerning this RFP and the selection process are subject to public disclosure per the California Public Records Act (California Government Code Section §6250 et. Seq) and the San Francisco Sunshine Ordinance (San Francisco Administrative Code Chapter 67). Contracts, Proposals, responses, and all other records of communications between the City and Proposers will be open to inspection immediately after a contract has been awarded, but not before award. Nothing in this Administrative Code provision requires the disclosure of a private person's or organization's net worth or other proprietary financial data submitted for qualification for a contract or other benefit until and unless that person or organization is awarded the contract or benefit.

If the SFMTA receives a Public Records Request (Request) pertaining to this RFP, the SFMTA will use its best efforts to notify the affected Proposer(s) of the Request and to provide the Proposer with a description of the material that the SFMTA deems responsive and the due date for disclosure (Response Date). If the Proposer asserts that some or all of the material requested contains or reveals proprietary information or trade secrets that are legally or that is otherwise exempt from disclosure and directs the SFMTA in writing to withhold such material from production (Withholding Directive), then the SFMTA will comply with the Withholding

Directive on the condition that the Proposer seeks judicial relief on or before the Response Date. Should Proposer fail to seek judicial relief on or before the Response Date, the SFMTA will proceed with the disclosure of responsive documents.

M. Public Access to Meetings and Records

If a Proposer receives a cumulative total per year of at least \$250,000 in City funds or City-administered funds and is a non-profit organization as defined in Chapter 12L of the S.F. Administrative Code, the Proposer must comply with Chapter 12L. The Proposer must include in its Proposal (1) a statement describing its efforts to comply with the Chapter 12L provisions regarding public access to Proposer's meetings and records, and (2) a summary of all complaints concerning the Proposer's compliance with Chapter 12L that were filed with the City in the last two years and deemed by the City to be substantiated. The summary must also describe the disposition of each complaint. If no such complaints were filed, the Proposer must include a statement to that effect. Failure to comply with the reporting requirements of Chapter 12L or material misrepresentation in Proposer's Chapter 12L submissions shall be grounds for rejection of the Proposal and/or termination of any subsequent Agreement reached on the basis of the Proposal.

N. Reservations of Rights by the City

The issuance of this RFP does not constitute an agreement by the City that any contract will be awarded by the City. The City expressly reserves the right at any time to:

1. Waive or correct any defect or informality in any response, Proposal, or selection process;
2. Reject any Proposal or all Proposals;
3. Reissue a Request for Proposals or a request for revised Proposals;
4. Prior to submission deadline for Proposals, modify all or any portion of the selection procedures, including deadlines for accepting responses, the specifications or requirements for any materials, Equipment or Services to be provided under this RFP, or the requirements for contents or format of the Proposals;
5. Procure any materials, Equipment or Services specified in this RFP by any other means; or
6. Determine that no Project will be pursued.

O. No Waiver

No waiver by the SFMTA of any provision of this RFP may be implied from any failure by the SFMTA to recognize or take action on account of any failure by a Proposer to observe any provision of this RFP.

P. Other

1. The SFMTA may make such investigation, as it deems necessary, prior to the award of this contract to determine the conditions under which the goods are to be delivered or

the work is to be performed. Factors considered by the SFMTA may include, but not be limited to:

- a. Any condition set forth in this RFP;
 - b. Adequacy of Proposer's plant facilities and/or Equipment, location and personnel location to properly perform all Services called for under the purchase order; and
 - c. Delivery time(s).
2. The SFMTA reserves the right to inspect an awarded Proposer's place of business prior to award of and/or at any time during the contract term (or any extension thereof) to aid the SFMTA in determining an awarded Proposer's capabilities and qualifications.
 3. The SFMTA reserves the right to reject any Proposal on which the information submitted by Proposer fails to satisfy the SFMTA and/or if Proposer is unable to supply the information and documentation required by this RFP within the period of time requested.
 4. Any false statements made by a Proposer or any related communication/clarification may result in the disqualification of its Proposal from receiving further evaluation and a contract award.

Q. Small Business Enterprise (SBE) Non-Discrimination

The following information is provided to assist the Proposer in the preparation of Proposals. Please also see Appendix A (SFMTA Small Business Enterprise Program for Professional and Technical Services) for a description of SFMTA's SBE Program, along with all forms required for submittal of Proposals and for use by the Proposer.

1. Policy

The SFMTA is committed to an (SBE) Program ("Program") for the participation of SBEs in contracting opportunities. The SFMTA is also committed to compliance with the federal regulations in 49 CFR Part 26, issued March 4, 1999, as amended from time to time (the "Regulations"). The Regulations are incorporated into this Program as though fully set forth herein. It is the intention of the SFMTA to create a level playing field on which SBEs can compete fairly for contracts and subcontracts relating to the procurement and professional services activities of the SFMTA.

2. Questions

Questions concerning SBE Non-Discrimination Requirements should be addressed in writing to:

Preston Tom
SFMTA, Contract Compliance
One South Van Ness Ave., 6th Floor
San Francisco, CA 94103

or

Email: preston.tom@sfmta.com

Please include "**SFMTA-2022-40-FTA**" in the subject line of your e-mail.

3. Non-Discrimination in Employment

SFMTA will evaluate the Proposer's response to the Questionnaire on Recruitment, Hiring, and Training Practices (MTA SBE Form No. 3) to determine whether the Proposer is in compliance with the Nondiscrimination Requirements.

Should SFMTA deem it necessary, the SFMTA will seek a written commitment from the Proposer to use good faith efforts to provide equal employment opportunities during the term of the contract. One measure of such a commitment would be comparing utilization of women and minorities with the relevant labor market in order to improve parity between the composition of the Proposer's workforce and the available labor market. The Proposer may be required to provide the SFMTA with the relevant data regarding its labor market.

4. SBE Goals

The Contract Compliance Office has established a **five percent SBE participation goal** for the Contract. Small business firms may qualify for this program by enrollment in the State of California's Small Business Program, the federal DBE program, or the City and County of San Francisco's LBE Program.

To be determined responsive, a Proposer must demonstrate in its submittal that it will meet the goals in the performance of this contract; or if it is unable to meet the goals, the Proposer must submit documentation (MTA Form 2 – SBE Contractor/Subcontractor – Good Faith Efforts) with its Proposal that it performed good faith efforts, prior to submission of the bid or Proposal, to meet this goal. A Proposal that is not responsive as to these requirements will be ineligible for award of the contract.

5. SBE Forms Required to be Submitted with Proposal (Note: SBE Forms provided in Appendix A to this RFP)

Submit completed and signed forms listed in RFP Appendix A, "SFMTA SBE Requirements for Architects, Engineers, Planners, Environmental Scientists and Other Professional Services Contracts," to document compliance with the SBE requirements. Proposers must submit the following forms with their Proposals:

- a. Contractor/Joint Venture Partner and Subcontractor Participation Report (SFMTA SBE Form 1)
- b. SBE Contractor/Subcontractor – Good Faith Efforts (SFMTA SBE Form 2)
- c. Bidders List (SFMTA SBE Form 2A)
- d. SBE Contractor/Joint Venture Partners/Subcontractor – Gross Revenue Declaration (SFMTA SBE Form No. 2B)
- e. Questionnaire on Recruitment, Hiring and Training Practices for Contractors (SFMTA SBE Form 3)
- f. Subcontractor Participation Declaration (SFMTA SBE Form 4)
- g. SBE/DBE Acknowledgement Declaration (SFMTA SBE Form 5)

- h. Joint Venture Participation Form (Schedule B)
- i. A Copy of the firm’s Nondiscrimination Program or EEO Policy Statement (if any)

Note: Forms described in this paragraph do not count against the Proposal page limits specified in Section IV.

Please label the file/folder “RFP No. SFMTA-2022-40-FTA Part 6 – Small Business Enterprise Program Proposal.”

Both prime contractor and subcontractors will need to submit Items 3, 4 (if applicable), 5, and 9.

Items 1, 2, and 6 apply to the prime contractor only. Item 7 applies to the SBE subcontractor only. Information about all firms submitting quotes or Proposals to the prime and subcontractors must be included on Item 3 (Bidders List). Directions for completing the above forms can be found in the SBE Program in Appendix A.

R. Employment Nondiscrimination and Economically Disadvantaged Workforce Hiring Provisions

Proposer selected pursuant to this RFP may not, during the term of the Agreement, in any of its operations in San Francisco, on real property owned by San Francisco, or where work is being performed for the City elsewhere in the United States, discriminate in the provision of bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pension and retirement benefits or travel benefits, as well as any benefits other than the benefits specified above, between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of such employees, where the domestic partnership has been registered with a governmental entity pursuant to state or local law authorizing such registration, subject to the conditions set forth in Section 12B.2(b) of the San Francisco Administrative Code. *Refer to the Sample Agreement (Appendix B) terms for additional details related to the application of this Ordinance to a contract awarded pursuant to this RFP.*

1. General

As a material condition of contract award, the Proposer and its subcontractors agree to comply with the nondiscrimination in employment provisions required by Chapter 12B of the Administrative Code and the hiring of economically disadvantaged persons, as required by the City’s First Source Hiring Program, Chapter 83 of the Administrative Code.

2. Nondiscrimination Provisions

As a material condition of the contract, the selected Proposer represents and agrees that:

- a. It does and will not, during the term of the contract or any contract amendment, discriminate in the provision of benefits between its employees with spouses and employees with domestic partners.

- b. The selected Proposer and its subcontractors on this contract will not discriminate against any employee or applicant for employment because of race, color, religion, ancestry, national origin, age, sex, sexual orientation, gender identity, domestic partner status, marital status, disability or AIDS/HIV status, weight, height, or association with members of classes protected under this chapter or in retaliation for opposition to any practices forbidden under this chapter. Discrimination on the basis of sex includes sexual harassment as defined in Section 16.9-25(b) of the Code. The contractor, selected Proposer or subcontractor/subcontractor will take action to ensure that applicants are employed, and that employees are treated equally during employment, without regard to the fact or perception of their race, color, creed, religion, ancestry, national origin, age, sex, sexual orientation, gender identity, domestic partner status, marital status, disability, weight, height, or AIDS/HIV status. Such action includes, but is not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rate of pay or other forms of compensation; and selection for training, including apprenticeship.

3. Non-Compliance with Chapter 12B Prior to Contract Award

As a material condition for award of the contract, the selected Proposer and its subcontractors must be in compliance with the nondiscrimination provisions of Chapter 12B, on all existing City contracts prior to award of this contract. The SFMTA has the authority to review the selected Proposer's and subcontractors' prior performance to ensure compliance with the nondiscrimination provisions of Chapter 12B.

If the SFMTA determines that there is cause to believe that any selected Proposer or subcontractor is not in compliance with the nondiscrimination provisions of Chapter 12B, the SFMTA will attempt to resolve the non-compliance through conciliation.

- a. If the non-compliance cannot be resolved, the SFMTA will submit to the selected Proposer or subcontractor a written Finding of Non-compliance.
- b. The SFMTA will give the selected Proposer or subcontractor an opportunity to appeal the Finding.
- c. The SFMTA may, by written notice, stay the award of any contract to a Proposer where the Proposer or any subcontractor is the subject of an investigation for a violation of the City's non-discrimination ordinance(s).

4. Complaints of Discrimination after Contract Award

- a. A complaint of discrimination in employment initiated by any party after contract award will be processed in accordance with CCO procedures. A copy of those procedures is available at <https://sfgov.org/cmd/forms-resources>.
- b. A finding of discrimination may result in imposition of appropriate sanctions, including:

- i. There may be deducted from the amount payable to the selected Proposer or subcontractor under this contract a penalty of \$50 for each person for each calendar day the person was discriminated against in violation of the provisions of the contract.
- ii. The contract may be canceled, terminated or suspended in part by the SFMTA.
- iii. The contractor, subcontractor or vendor may be determined ineligible to perform work or supply products on any City contract for a period not to exceed two years.

Said sanctions are not the City’s exclusive remedies, which may be imposed in combination with additional legal remedies, sanctions or penalties.

5. Trainees – SFMTA Employment Training Program

- a. **Trainee Requirements:** Proposer must comply with the City’s First Source Program, Administrative Code Section 83 (see Section X.E below), which fosters employment opportunities for economically disadvantaged individuals. Proposer must notify the First Source Program of all open, entry-level positions and consider all program referrals fairly and equally.

In addition, the SFMTA requires Proposer to hire a minimum number of professional service trainees in the area of the Proposer’s expertise. These hires count toward the First Source Hiring requirements. Trainees may be obtained through the City’s One Stop Employment Center, which works with various employment and job training agencies/organizations or other employment referral source.

Number of Trainees

Project Fees	To Be Hired
\$0 – \$499,999	0
\$500,000 – \$899,999	1
\$900,000 – \$1,999,999	2
\$2,000,000 – \$4,999,999	3
\$5,000,000 – \$7,999,999	4
\$8,000,000 – \$10,999,999	5
\$11,000,000 – \$13,999,999	6
(> = \$14M, for each additional \$3 million in contractor fees, add one additional trainee)	

- b. The trainee must be hired by the Proposer or by any subcontractor on the Project team.
- c. No trainee may be counted towards meeting more than one contract goal.
- d. A trainee must meet qualifications for enrollment established under the City’s First Source Hiring Program as follows:

- i. “Qualified” with reference to an economically disadvantaged individual means an individual who meets the minimum bona fide occupational qualifications provided by the prospective employer to the San Francisco Workforce Development System in the job availability notices required by the Program, and
 - ii. “Economically disadvantaged individual” means an individual who is either: (1) eligible for services under the Workforce Investment Act of 1988 (WIA) (29 U.S.C.A 2801 et seq.), as determined by the San Francisco Private Industry Council; or (2) designated “economically disadvantaged” for the First Source Hiring Administration, as an individual who is at risk of relying upon, or returning to, public assistance.
- e. On-the-job training (to be provided by the Proposer): The Proposer shall hire the trainee on a full-time basis for at least 12 months or on a part-time basis for 24 months, with prior approval offering him/her on-the-job training which allows the trainee to progress on a career path.
- f. Selected Proposer shall submit for the City’s approval a description and summary of training proposed for the trainee, along with the rate of pay for the position.
- g. The trainee’s commitment does not require that he/she is used only on this Project; the trainee may also be used on other projects under contract to the Proposer that may be appropriate for the trainee’s skill development.

X. Contract Requirements

A. Standard Contract Provisions

The selected Proposer will be required to enter into a contract substantially in the form of the Sample Agreement, attached hereto as Appendix B. Failure to timely execute the contract, or to provide any and all insurance certificates and policy endorsement, Proposal bonds or other materials required in the contract, will be deemed an abandonment of a contract offer. The SFMTA, in its sole discretion, may select another firm and may proceed against the original selectee for damages.

B. Nondiscrimination in Contracts and Benefits

As a material requirement of the contract, the selected Proposer must comply with Chapters 12B and 12C of the San Francisco Administrative Code. Generally, Chapter 12B prohibits the City and County of San Francisco from entering into contracts or leases with any entity that discriminates in the provision of benefits between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of employees. The Chapter 12C requires nondiscrimination in contracts in public accommodation. Additional information on Chapters 12B and 12C is available on the CMD's website at: <http://sfgsa.org/index.aspx?page=6058>.

C. Minimum Compensation Ordinance

The selected Proposer is encouraged to comply with Administrative Code Chapter 12P. Proposer selected pursuant to this RFP shall pay covered employees no less than the minimum compensation required by San Francisco Administrative Code Chapter 12P, including a minimum hourly gross compensation, compensated time off, and uncompensated time off. Proposer selected pursuant to this RFP is subject to the enforcement and penalty provisions in Chapter 12P. Information about and the text of the Chapter 12P is available on the web at <http://sfgov.org/olse/mco>. *Refer to the Sample Agreement (Appendix B) for additional details related to the application of this Ordinance to contracts awarded pursuant to this RFP.*

D. Health Care Accountability Ordinance

The selected Proposer is encouraged to comply with the requirements of Chapter 12Q. For each Covered Employee, an awarded Proposer shall provide the appropriate health benefit set forth in Section 12Q.3 of the Health Care Accountability Ordinance (HCAO). If a Proposer selected pursuant to this RFP chooses to offer the health plan option, such health plan shall meet the minimum standards set forth by the San Francisco Health Commission. Information about and the text of the Chapter 12Q and the Health Commission's minimum standards available at <http://sfgov.org/olse/hcao>. Any Subcontract entered into by Proposer shall also be required to comply with the requirements of the HCAO and shall contain contractual obligations substantially the same as those set forth in this section. *Refer to the Sample Agreement (Appendix B) for additional details related to the application of this Ordinance to contracts awarded pursuant to this RFP.*

E. First Source Hiring Program

The selected Proposer shall comply with all of the provisions of the First Source Hiring Program, Chapter 83 of the San Francisco Administrative Code that apply to this Agreement and an awarded Proposer is subject to the enforcement and penalty provisions in Chapter 83. Additional information regarding the FSHP is available on the web at <http://oewd.org/first-source> and from the First Source Hiring Administrator, business.services@sfgov.org or call (415) 701-4848. *Refer to the Sample Agreement (Appendix B) for additional details related to the application of this Ordinance to contracts awarded pursuant to this RFP.*

F. Conflicts of Interest

The selected Proposer must agree to comply fully with and be bound by the applicable provisions of state and local laws related to conflicts of interest, including Section 15.103 of the City's Charter, Article III, Chapter 2 of City's Campaign and Governmental Conduct Code, and Section 87100 et seq. and Section 1090 et seq. of the Government Code of the State of California. The selected Proposer will be required to acknowledge that it is familiar with these laws; certify that it does not know of any facts that constitute a violation of said provisions; and agree to immediately notify the City if it becomes aware of any such fact during the term of the Agreement.

Individuals who will perform work for the SFMTA on behalf of the selected Proposer might be deemed "contractors" under state and local conflict of interest laws. If so, such individuals will be required to submit a Statement of Economic Interests, California Fair Political Practices Commission Form 700, to the City within 10 days of the SFMTA's notice of award of the contract.

G. Prevailing Wage and Employee Retention

The Services that the selected Proposer will perform under the Contract, as described in this RFP and the Contract, is not a public work and does not constitute construction work covered by prevailing wage requirements. It is possible, however, that the selected Contractor or its subcontractors may employ persons who perform tasks or services that are covered by prevailing wage laws. To the extent that Contractor or its subcontractors employ persons whose work is subject to prevailing wage laws, the following requirements shall apply:

1. California Labor Code section 1770 et seq. and San Francisco Administrative Code Sections 6.22(e) and 6.22(f). Copies of the prevailing wage rates, as determined by the Director of the State of California Department of Industrial Relations, are available at the City's Office of Labor Standards Enforcement and are also available on the Internet at <http://www.dir.ca.gov/DLSR/PWD> and <https://sam.gov/content/wage-determinations>.

2. Davis-Bacon Act. Under 49 U.S.C. § 5333(a), prevailing wage protections apply to laborers and mechanics employed on FTA-assisted construction, alteration, or repair projects. For those types of workers, the Contractor will comply with the Davis-Bacon Act, 40 U.S.C. §§ 3141-3144, and 3146-3148 as supplemented by DOL regulations at 29 C.F.R. part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction." In accordance with the statute, the Contractor shall pay wages to laborers and mechanics at a rate not less than

San Francisco Municipal Transportation Agency
RFP for Communications-Based Train Control System

the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, the Contractor agrees to pay wages not less than once a week.

Appendix A

SFMTA Small Business Enterprise Program for Professional and Technical Services

Requirements for Architects, Engineers, Planners, Environmental Scientists and Other Professional Services Contracts

Appendix A is a separate file to be downloaded from the online posting for this RFP on the San Francisco City's Supplier Portal.

You may access the website at the following link:

<https://sfcitypartner.sfgov.org/pages/index.aspx>

Appendix B

Sample Agreement

Appendix B will be a separate file to be downloaded from the online posting for this RFP on the City's Supplier Portal.

It may be accessed at the website at the following link after the RFP has been issued:

<https://sfcitypartner.sfgov.org/pages/index.aspx>

Appendix B (the Sample Agreement) is included in the following pages as part of the MTA Board Calendar Item Enclosure

TITLE PAGE

To be added once contract is finalized

TABLE OF CONTENTS
To be added once contract is finalized

**City and County of San Francisco
Municipal Transportation Agency
One South Van Ness Ave., 7th Floor
San Francisco, California 94103**

**Agreement between the City and County of San Francisco and
[Insert name of contractor]
for the Design, Procurement, System Implementation, Support and Related Services for a
Communications Based Train Control System**

Contract No. SFMTA-2022-40 -FTA

This Agreement for the Design, Procurement, System Implementation, Support, and Related Consulting Services for a Communications Based Train Control System (“Agreement” or “Contract”) is dated for convenience as _____, 2023, negotiated and to be performed in San Francisco, California, by and between _____ [name of Contractor, and corporate/business status (e.g., “ABC, Inc., a California corporation”)] with its principal place of business in _____] (Contractor), and City, a municipal corporation, acting by and through its Municipal Transportation Agency (SFMTA).

Recitals

- A.** The SFMTA wishes to procure a Communications Based Train Control System (“CBTC”) that will replace and expand the SFMTA’s current train control system, including the Software development, engineering, technical and other services, Equipment and parts, and design, Systems operations, installation oversight, maintenance and related professional and general services necessary to design, procure, provide, implement, test, certify, support and maintain a CBTC.
- B.** Time is of the essence in the performance of this Agreement, as the SFMTA current train control system has reached the end of its useful life.
- C.** The Contractor will not perform any work that constitutes a public work. Contractor will not perform installation work on transit and other City vehicles, except as authorized by the SFMTA. The SFMTA will separately contract with third-party Installers to perform Equipment installation on SFMTA’s light rail vehicles (LRVs) and wayside and control room Equipment installation.
- D.** This Agreement was competitively procured as required by San Francisco Administrative Code Chapter 21 through a Request for Proposals (RFP) issued on January 23, 2023, pursuant to which City selected Contractor as having submitted the highest-ranked Proposal.
- E.** The Small Business Enterprise (SBE) subcontracting participation requirement for this Agreement is five percent (5%).

- F. Contractor represents and warrants that it is qualified to perform the Services required by City as set forth under this Agreement.
- G. The City’s Civil Service Commission approved Contract numbers 42673 – 21/22 for the System Procurement portion of this Agreement on June 6, /2022, and 41562 – 21/22 for the Support portion of this Agreement on February 7, 2022.
- H. The Municipal Transportation Agency Board of Directors approved this Agreement by [insert resolution number] on [insert date of Commission or Board action].
- I. The San Francisco Board of Supervisors approved this Agreement by [insert resolution number] on [insert date Board action].
- J. Now, therefore, in light of the statements in these Recitals, the Parties agree as follows:

General Provisions

ARTICLE 1 CONTRACT DOCUMENTS

This Agreement is comprised of the following documents (“the Contract Documents”), which together state all obligations, duties, and requirements of the Parties, and the benefits each Party will obtain from performance of this Contract, and constitute the Contract:

1.1. This “General Provisions,” document, which establishes the contractual relationship of the Parties and the general terms and conditions of the Agreement, and any approved Contract Modifications, and approved Change Orders.

1.2. The Included Appendices are listed in Article 14.

ARTICLE 2 DEFINITIONS

The following definitions apply to this Agreement. Where any word or phrase defined below, or a pronoun in place of the word or phrase, is used in any part of this Agreement, it shall have the meaning set forth below. Appendix A (Contract Specifications) and Appendix K (Software License Agreement) contain additional defined terms, which are incorporated here by reference.

2.1. “Acceptance” (or “Accept”) means the formal written statement to Contractor from the SFMTA acknowledging that all Work that Contractor must provide, (or a specific portion thereof) have been satisfactorily completed in accordance with the requirements stated in the Contract. See Appendix A, Section 8 (Deployment, Migration and Acceptance); see also definition of “Conditional Acceptance,” below.

2.2. “Agreement” or “Contract” Agreement or Contract means the documents listed in Article 1 (Contract Documents) of the Sample Agreement memorializing the parties’ agreement, the Contract bonds or other security, approved Contract Modifications, and all applicable City Ordinances and Mandatory City Requirements and other documents that are expressly incorporated into this Agreement by reference. Reference Materials are not Contract Documents.

2.3. “Automatic Train Control System” or “ATCS” means the Thales Seltrac system currently installed and in use in the Market Street and Central Subways.

2.4. “Award” means approval of the award of the Contract to Contractor by the SFMTA Board of Directors, the San Francisco Board of Supervisors, and the Mayor, subject to

Contractor's providing documents evidencing bonds and insurance coverage as required by this Agreement, and to such other conditions as may be specified in the Request for Proposals, or otherwise required by the City or by law

2.5. "CCO" means the SFMTA's Contract Compliance Office,

2.6. "Change Order" means a written directive from the SFMTA to the Contractor to effect a change in the CBTC. See Section 12.5 and Appendix E (Clarifications and Changes in the Work).

2.7. "Change Order Request" (COR) is a written request from Contractor to amend the Agreement, as further described in Appendix E.

2.8. "City" means the City and County of San Francisco, a municipal corporation, acting by and through its Municipal Transportation Agency.

2.9. "City Data" or "Data" means that data as described in Article 13 of this Agreement, which includes, without limitation, all data collected, used, maintained, processed, stored, or generated by or on behalf of the City in connection with this Agreement, as well as City Confidential Information, and data provided by a third-party to the City for use under this Agreement.

2.10. "Clarification" means a written communication from the SFMTA in response to a Request for Information explaining a Contract requirement that may provide Contractor additional information or context concerning a Contract requirement, but does not change the Contract provision at issue. (See Section 12.5 and Appendix E.)

2.11. "Closures" means the planned suspension or unplanned interruption of any Revenue Service during the usual operating hours and dates listed in SFMTA's Track and Tunnel Access Procedures of Appendix J (SFMTA Policies and Procedures).

2.12. "Commissioning" means the Contractor's certification that a Phase of the Work has passed all required safety tests and may be placed in Revenue Service.

2.13. "Communications-Based Train Control System" or "CBTC System" or "CBTC" generally means the railway signaling System that makes use of telecommunications between the train and track equipment for traffic management and infrastructure control, and specifically refers to the System to be procured under this Agreement. "Conditional Acceptance" means the formal written acknowledgement by the SFMTA Director of Transportation or his or her designee that a portion of the Project or Services meets the criteria stated or described in the relevant provisions for that portion of the Project or Services to be accepted. See Section 8 (Deployment, Migration and Acceptance) of the Contract Specifications. "Confidential Information" means information, documents, schematics, plans and data that the SFMTA has identified as confidential or otherwise not to be released to the public without the express written authority of the SFMTA, which includes, but is not limited to Security Sensitive Information (SSI) and Critical Infrastructure Information (CII), and proprietary information from third parties that is licensed to the SFMTA. See Section 13.1 (Nondisclosure of Private, Proprietary, or Confidential Information).

2.14. "Configure" (Configuration) means the use of native tools in the System to change its behavior or features without modifying the System's Software or Hardware. Requirements which can be met through Configuration do not require Customization.

2.15. "Contract Amount" is the value stated in Section 4.4.1 (Calculation of Charges), as that amount may be amended by properly approved Contract Modifications.

2.16. "Contract Documents" means the documents listed in Article 1 (Contract Documents) of the Sample Agreement, which memorialize the Parties' agreement concerning the matters described therein.

2.17. “Contract Modification” means a written amendment to the Contract, executed by the City and Contractor in accordance with the City’s Charter and Municipal Codes, effecting changes in the Contract concerning the Term of the Agreement , Contract Amount, or the scope or details of the Work .

2.18. “Contract Rates” means the original prices and rates stated in the Contract when the Contract was awarded. See Appendix B (Schedule of Prices and Calculation of Charges).

2.19. “Contract Schedule” means the schedule Contractor submitted with its Proposal, which shall be the basis for the Project Schedule. See Appendix D (Project Schedule).

2.20. “Contract Specifications” means the System functional, performance, and technical requirements stated in Appendix A (Contract Specifications) of the Agreement. “Contract Term” means the period stated in the Contract during which Contractor shall complete the Project, commencing on the date stated in the Notice to Proceed and ending at the conclusion of the Support Term. (See Article 3 (Contract Term) of this Agreement).

2.21. “Contract Time” means times stated in the Contract during which Contractor shall complete Milestones, Phases, and the Project, as applicable.

2.22. “Contractor” means [insert name and address of Contractor] _____, and as applicable its agents, subcontractors and suppliers that will perform Work under this Agreement.

2.23. “Controller” means the Controller of the City.

2.24. “Critical Infrastructure Information” means documents, data files, computer files, designs, and other Materials that contain information that may not qualify as Security Sensitive Information, but that the City directs are not to be released to the public or otherwise disclosed as doing so would pose a risk to the security of the City’s public transit system, public infrastructure, or to public safety.

2.25. “Customization” means a feature, extension, or modification that requires custom coding and/or some form of special implementation to add function(s) or features to the Software, as more specifically described in the Appendix A.

2.26. “Day” (whether or not capitalized) means a calendar day commencing at 12:00 AM and expiring on 11:59 PM, unless otherwise expressly stated. Unless expressly stated otherwise, “Days” shall mean consecutive calendar days.

2.27. “Delay” is defined in Section 5.17 (Delay, Force Majeure, and Liquidated Damages).

2.28. “Deliverables” means Contractor’s work product resulting from the Services provided by Contractor to City under this Agreement, including without limitation, the work product described in Appendix A and the Submittals listed in Section 35 (Contract Data Requirements List (CDRL)) of Appendix A.

2.29. “Deployment Phase” means a phase of the Project that results in deploying a fully-functional System over a specifically defined geographic portion of the SFMTA light rail network.

2.30. “Director” means the Director of Transportation of the SFMTA or his or her designee.

2.31. “Disadvantaged Business Enterprise” or “DBE” means a for-profit, small business concern owned and controlled by a socially and economically disadvantaged person(s) as defined in 49 Code of Federal Regulations (CFR) Section 26.5.

2.32. “Effective Date” means the date the SFMTA notifies Contractor through a Purchase Order and Notice to Proceed that the City’s Controller has certified the availability of funds for this Contract as provided in Section 3.1 of Article 3 (Contract Term), and that the Contract has been fully approved and executed by the City.

2.33. “Enhancement” means a modification to the Software code to add new features or functions to the Software specific to the SFMTA’s CBTC requested by the SFMTA under a Change Order.

2.34. “Equipment” means the hardware, computers, servers, diagnostic and simulation tools, spare parts, special tools, and all other electronic, mechanical or electrical components to be provided by Contractor under this Agreement.

2.35. “Errors”, “Defects” or “Malfunctions” means either a deviation between the function of the Software and the Documentation furnished by Contractor for the Software, or a failure of the Software which degrades the use of the Software.

2.36. “Fix” means repair or replacement of source, object or executable code in the Software to remedy an Error, Defect or Malfunction.

2.37. “Event of Default” is an action or failure to act by Contractor that is a material breach of the Agreement. See Section 9.2.1 (Event of Default).

2.38. “Final Acceptance” means the formal written Acceptance by the SFMTA Director of Transportation or his or her designee that all Contract Deliverables for the Procurement portion of the Contract have been satisfactorily completed and accepted. See Section 8 (Deployment, Migration and Acceptance) of the Contract Specifications.

2.39. “Final Commissioning Date” means the Commissioning date of the Final Deployment Phase.

2.40. “Force Majeure Event” means an act of God; flood; windstorm; tornado; wars; riot; insurrection; epidemic and other public health emergencies; quarantine restrictions; strikes and lockouts; freight embargoes; acts of a governmental agency exercising regulatory or other police powers; priorities or privileges established for the manufacture, assembly, or allotment of Materials by order, decree, or otherwise of the United States or by any department, bureau, commission, committee, agent, or administrator of any legally constituted public authority that delay to progress or completion of the Project, Milestone, or other portion of the Project.

2.41. “FTA” means the Federal Transit Administration.

2.42. “Fully Burdened Labor Rate” means an hourly labor rate that includes wages, benefits, taxes and overhead costs, but does not include profit.

2.43. “Hardware” means Equipment.

2.44. “Heritage Vehicles” means the SFMTA fleet of vehicles, mainly Presidents’ Conference Committee (PCC) and Peter Witt cars, along with veteran San Francisco streetcars and a very diverse group of streetcars including vehicles from the UK, Japan, Italy, and Portugal.

2.45. “Incidental Work” means work, expenditure, costs and time that Contractor expends that may not be specifically described in the Agreement as Work, but that is integral and necessary to perform the Work.

2.46. “Indemnitee” means any party or entity to which Contractor owes a duty of indemnity of claims and lawsuit as provided in this Agreement. See Section 6.2 (Indemnification).

2.47. “Installer” means the third-party contractor(s) that the SFMTA will engage to install System Equipment.

2.48. “Issue” means a failure or problem with the System that has been reported by the SFMTA to the Contractor in accordance with the procedures in Appendix I.

2.49. “Issue Report Form” means a form used by SFMTA to report Issues to the Contractor with a format agreed upon by both Parties.

2.50. “Key Personnel” means Contractor’s and Subcontractors’ personnel identified in the RFP (or otherwise identified by Contractor) as having specialized expertise and experience necessary for the design and/or implementation of the CBTC and successful completion of the Project.

2.51. “Legacy System” means those existing SFMTA data and technology systems listed in Appendix A, Section 28.3 (CBTC External Interfaces).

2.52. “Light Rail Vehicle (LRV)” or “Light Rail Vehicle 4 (LRV4)” means the light rail vehicles being procured by the SFMTA under a contract with Siemens Mobility, Inc.

2.53. “Loss of Critical Function” is as defined in Appendix A, Section 30.2.1 (Failure Allocation and Categorization).

2.54. “Mandatory City Requirements” means those City laws set forth in the San Francisco Municipal Code, including the duly authorized rules, regulations, and guidelines implementing such laws that impose specific duties and obligations upon Contractor.

2.55. “Materials” means items or supplies necessary for the installation or implementation of the System provided by the Contractor that are not Equipment or Shop Materials.

2.56. “Milestone” means a specific portion of the Work to which the Contract states a completion date and ties compensation to the completion of that Work..

2.57. “Muni” means the San Francisco Municipal Railway, a division of the SFMTA.

2.58. “Notice to Proceed” means written notice to the Contractor of the date on which it shall begin performance of the Contract.

2.59. “Option” means the power of the City under the Agreement to direct Contractor to perform additional Work that is identified as an Option for the price stated in the Agreement.

2.60. “Patch” means temporary repair or replacement of code in the Software to remedy an Error, Defect or Malfunction. Patches may be made permanent and released in Subsequent Releases of the Software.

2.61. “Party” and “Parties” means the City and Contractor either individually or collectively.

2.62. “Performance Requirement” means the requirements defined in the Contract for System Performance, based on the Performance Targets and Performance Metrics. See Contract Specification, Section 30 (Reliability, Availability and Maintainability).

2.63. “Performance Target” means a quantifiable level of performance or condition, expressed as a value for the measure, to be achieved in the time period stated in the Agreement.

2.64. “Phase” means a phase of System Procurement.

2.65. “Precedence” means the higher authority of a Contract Document over all other Contract Documents with lower precedence, used in the construction and interpretation of this Agreement. See Section 12.14 (Order of Precedence).

2.66. “Priority Category” means the priority assigned to an Error, Defect or Malfunction, designating the urgency of correcting an Error, Defect or Malfunction. Assignment of a Priority Category to an Error, Defect or Malfunction is based on City's determination of the severity of the Error, Defect or Malfunction and Contractor's reasonable analysis of the priority of the Error, Defect or Malfunction.

2.67. “Priority Protocol” means the rules, based on the Priority Category, that specify the turnaround time for correcting Errors, Malfunctions and Defects, escalation procedures, and personnel assignment.

2.68. “Procurement Term” means the initial eight-year period of the Contract Term, ending at Final Acceptance, during which Contractor shall design, procure, oversee installation, test, certify and implement the CBTC System into Revenue Service. See Article 3 (Contract Term) and Appendix A (Contract Specifications).

2.69. “Project” means the entire endeavor of designing, installing, integrating, testing and commissioning the CBTC System described in the Agreement.

2.70. “Project Schedule” means the SFMTA-approved schedule prepared by Contractor showing the schedule for the design, implantation, testing and Commissioning of the CBTC and delivery of related Services. See Appendix A, Section 3 (Project Management).

2.71. “Project Manager” (or “Engineer”) means the manager assigned to manage the Project for the SFMTA.

2.72. “Proposed Contract Change” (PCC) is a written request from SFMTA to amend the Agreement, as further described in Appendix E.

2.73. “Purchase Order” means the written order issued by the City to Contractor, authorizing the Effective Date as provided in Section 3.1 of Article 3 (Contract Term).

2.74. “Reduction in Operation Margin” is as defined in Appendix A, Section 30.2.1(Failure Allocation and Categorization).

2.75. “Reference Materials” means those documents, drawings, and other Materials listed in Appendix L (Technical Addenda) to the RFP that the City provides to Contractor for information only. Reference Materials are not Contract Documents, and are not incorporated into the Agreement. See Section 7.6 (Liability for Reference Materials).

2.76. “Reimbursable Parts” means the parts, special tools or Materials for which the Contractor shall be entitled to reimbursement from the SFMTA due to an out-of-scope replacement. See Appendix A, Section 32.4.1 (Provisions of Equipment and Spare Parts) item 5.

2.77. “Release” means a deployment of the newest final version of the Software for use in SFMTA’s CBTC System which supersedes previous versions of the Software.

2.78. “Reliability, Availability, and Maintainability” (RAM) means metrics that relate to the reliability, availability, and maintainability of the System.

2.79. “Resolution” means the Issue as described in the Issue Report Form no longer occurs. See Section I.2.3.4.1.

2.80. “Response” means the engagement of Contractor’s technical support staff on the reported Issue and the initial technical communication between Contractor’s technical support staff and SFMTA’s staff on the reported Issue. See Section I.2.3.2.1.

2.81. “Root Cause Disposition” means Contractor’s written explanation of the reasons why an Issue occurred, along with Contractor’s recommended plan to resolve the Issue. See Section I.2.3.3.1.

2.82. “Revenue Service” means the activities by which the SFMTA provides transit services to the public and the state of a transit Vehicle providing transit service for payment of fares.

2.83. “San Francisco Municipal Transportation Agency” (SFMTA) or Agency means the City department with jurisdiction over public transit in San Francisco, as provided under Article VIII A of the City’s Charter.

2.84. “Sensitive Security Information” or “SSI” is as defined under applicable federal law and federal Department of Transportation security policies, 49 Code of Federal Regulations (CFR) Parts 15 and 1520.

2.85. “Service Affecting Failure” is as defined in Appendix A, Section 30.2.1(Failure Allocation and Categorization).

2.86. “Services” means “Work.” “Shop Materials” means common Materials that are readily obtainable by Installers in the local (San Francisco Bay Area) market, as determined by the SFMTA and described in Section 2 (Summary of Work & Scope Split) of the Contract Specifications.

2.87. “San Francisco Municipal Transportation Agency (SFMTA)” or “Agency” is defined in Section I of the RFP.

2.88. “Small Business Enterprise” or “SBE” means a for-profit, small business concern with a three-year average gross revenue that do not exceed the thresholds set forth in Section III.B and either: 1) is certified under any of the following programs: the State of California's Small Business Program with the Department of General Services (State Program), the City and County of San Francisco's LBE Program (City Program), or the California Unified Certification Program (Federal DBE program), or 2) has received written confirmation from CCO that it meets the SFMTA’s program eligibility requirements.

2.89. “Software” means all or any part of the specific collection of computer programs and/or machine-readable instructions used to operate or monitor the CBTC provided by Contractor under this Agreement, whether as a stand-alone product or pre-installed on Equipment. Software shall include any Enhancements, Updates or Upgrades to the original Software licensed to the SFMTA under this Agreement. See Appendix K, Section _____ (Software as a Service and Software License Agreement) of the Sample Agreement.

2.90. “Subcontractor” means any entity that has a contract with the Contractor to perform the Services (Work).

2.91. “Supplier” means any firm or individual under contract to Contractor to provide Equipment or other goods necessary for Project.

2.92. “Support Fee” means the payment received by the Contractor paid by the SFMTA in exchange for monthly Support Services.

2.93. “Support Services” means Software Updates, Equipment replacement, remote advice and System problem diagnostics, trouble shooting, as-needed on-site support, training, and ancillary Services, as described more fully in RFP Section II.C (Support Services Summary) and Section 32 (Support Services) of the Contract Specifications, and such other services as necessary to assist the SFMTA maintaining the System for its expected life.

2.94. “Support Term” means the portion of the Contract Term after completion of the Procurement Term during which Contractor shall provide Support Services for the CBTC System.

2.95. “System” means the Software, firmware, Equipment, components, subcomponents, subsystems, assemblies, processes, data, and other Services that constitute the CBTC.

2.96. “System Performance” means the actual performance of the System as measured using the Performance Metrics calculated using the methodology set out in Appendix A, Section 30 (Reliability, Availability and Maintainability) to the Contract Specifications

2.97. “Unavoidable Delay” is a delay to the Work that Contractor could not by reasonable efforts avoid or mitigate. See Section 5.17.2 (Unavoidable Delay).

2.98. “Unsatisfactory Issue Resolution” means an Issue to which the Contractor did not respond, did not provide a root cause disposition or did not resolve within the “Response and Resolution Time” targets identified in Appendix I. See Section I.4.

2.99. “Update” means modifications to the Software to correct Errors, Defects and Malfunctions within the existing functions of the Software, to address security vulnerabilities, and to stay current with the version of the operating system (including operating system updates and patches) installed on the Equipment. Updates are within the scope of prepaid Support Services.

2.100. “Upgrade” means modifications to the Software code to add new features or functions to the Software that are offered universally to Contractor’s other customers using the same Base Product as SFMTA’s CBTC System, or new versions of the Software developed to facilitate migration of the Equipment to a new operating system. Upgrades are within the scope of prepaid Support Services.

2.101. “Urgency Levels” means the severity of a System problem and the corresponding time in which Contractor must respond and resources provided to mitigate or solve the problem. See Appendix I, Section I.2 (Service Levels for Technical Support Services)..

2.102. “Urgency Levels” means the severity of a System problem and the corresponding time in which Contractor must respond and resources provided to mitigate or solve the problem..

2.103. “Vehicle” means LRVs, Heritage Vehicles, or Maintenance Vehicles that travel on SFMTA trackway and are required to be tracked by the CBTC System.

2.104. “Warranty Period” means the eighteen-month period starting at Final Acceptance during which the Contractor will provide Warranty Services. See Contract Specifications, Section 13 (Warranty and Spare Parts).

2.105. “Work” means Contractor’s obligation to perform and the work product derived from Contractor’s performance and provision of design, engineering, manufacturing, testing, commissioning, labor, supervision, products, Materials, machinery, Equipment, tools, supplies, and facilities described in the Contract Documents or otherwise necessary for the implementation and support of the CBTC. The terms Work and Services are synonymous.

2.106. “Workaround” means a change in the procedures followed or end user operation of the Software to avoid an Error, Defect or Malfunction without significantly impairing functionality or degrading the use of the Software.

ARTICLE 3 CONTRACT TERM

3.1. The Contract Term shall commence on the Effective Date of this Agreement and expire 18 years later, on [insert expiration date], unless earlier terminated or extended as provided in this Contract. The Contract Term comprises a System Procurement Term followed by a Support Term, which together with all exercised Options shall not exceed a total of 28 years.

3.2. The System Procurement Term commences on the Effective Date of this Agreement and shall continue for a period of not more than 8 years, which includes the warranty coverage at the end of each Phase of the System Procurement.

3.3. The Support Term shall commence at end of the first Warranty Period of the Procurement Term and continue for a period (base term) of 10 years after Final Acceptance. See Section 2.36 of Article 2 (Definitions). The City has two Options to extend the Support Term for five years each, for a total Support Term not to exceed of 20 years (a portion of which overlaps the Warranty Period for the final Phase of the Procurement Term due to the staggered acceptance of Deployment Phases).

3.4. The phases of the Project within the Contract Term are more specifically described in Appendix A, Section 8 (Deployment, Migration and Acceptance).

ARTICLE 4 FINANCIAL MATTERS

4.1. Certification of Funds; Budget and Fiscal Provisions; Termination in the Event of Non-Appropriation. This Agreement is subject to the budget and fiscal provisions of the City's Charter. Charges will accrue only after prior written authorization certified by the Controller in the form of a Purchase Order, and the amount of City's obligation hereunder shall not at any time exceed the amount certified for the purpose and period stated in such advance authorization. This Agreement will terminate without penalty, liability or expense of any kind to City at the end of any fiscal year if funds are not appropriated for the next succeeding fiscal year. If funds are appropriated for a portion of the fiscal year, this Agreement will terminate, without penalty, liability or expense of any kind at the end of the term for which funds are appropriated. City has no obligation to make appropriations for this Agreement in lieu of appropriations for new or other agreements. City budget decisions are subject to the discretion of the Mayor and the Board of Supervisors. Contractor's assumption of risk of possible non-appropriation is part of the consideration for this Agreement.

THIS SECTION CONTROLS AGAINST ANY AND ALL OTHER PROVISIONS OF THIS AGREEMENT.

4.2. Guaranteed Maximum Costs. The City's payment obligation to Contractor shall not at any time exceed the amount certified by City's Controller for the purpose and period stated in such certification. Absent an authorized public emergency as provided in the City's Charter and Municipal Codes or other applicable laws, no City representative is authorized to offer or promise, nor is the City required to honor, any offered or promised payments to Contractor under this Agreement in excess of the certified maximum amount without the Controller having first certified the additional promised amount and the Parties having modified this Agreement as provided in Section 12.5 (Modification of this Agreement).

4.3. Certified Funding. The City may receive and authorize funding for this Project in installments. The SFMTA by formal notice will inform Contractor of the value of certified funds, and Contractor shall by formal notice inform the SFMTA when the value of the Services and goods provided is 80 percent of the value of the certified funds.

4.4. Amendments to Contract Amount and Term. Contractor shall not be entitled to an increase in the Contract Amount or an extension of the Term unless the Parties memorialize that amendment in a Contract Modification in accordance with Section 12.5 (Modification of this Agreement).

4.5. Contractor Compensation

4.5.1. Calculation of Charges. The City shall compensate Contractor for Work for the period invoiced in accordance with this Section 4.5 (Contractor Compensation) for Work that the Director of Transportation, or his or her designee, in his or her reasonable

discretion, concludes have been satisfactorily performed in accordance Contract requirements and CBTC System Specifications. In no event shall the amount of this Agreement exceed _____ Dollars (\$ _____), which amount includes all Options (Section 5.2 (Exercise of Options) and economic price adjustment (Section B2.3.2 (Economic Price Adjustment)). The breakdown of charges associated with this Agreement appears in Appendix B (Calculation of Charges). As described in 4.5.3 (Retention), the City may withhold a portion of payment as retention until the Final Acceptance of Work. In no event shall City be liable for interest or other charges for any late payments.

4.5.1.1 Procurement Term. During the System Procurement Term, payments shall be made according to the Milestone Schedule stated in Appendix C (Payment Milestones) in accordance with Contract requirements for that Milestone and the payment requirements stated in Appendix B (Calculation of Charges).

4.5.1.2 Support Term. During the Support Term, Contractor shall provide an invoice to the SFMTA on a monthly basis for Support Services provided (including goods delivered, if any) and the achieved CBTC System RAM performance in the immediately preceding month, according to the schedule set out in Appendix B (Calculation of Charges).

4.5.2. City's Payment Obligations Are Limited to Satisfactory Performance of Services. Contractor is not entitled to any payments from City until the SFMTA approves the Work, including any Deliverables delivered under this Agreement. The City's payments to Contractor shall not constitute a waiver by the City of any rights under the Contract and shall not constitute implied acceptance by the City for Work that does not meet Contract requirements. The City's payments to Contractor shall not excuse Contractor from its obligation to replace unsatisfactory Work even if the unsatisfactory character of such Work may not have been apparent or detected at the time such payment was made. The City may reject Work does not conform to the requirements of this Agreement. In such case, Contractor must replace non-conforming Work without delay and at no cost to the City.

4.5.3. Retention.

4.5.3.1 The SFMTA will hold five percent (5%) in retention ("Retained Funds") from each Milestone payment it makes to Contractor for Work satisfactorily performed. Retained Funds are held for the benefits and protection of the SFMTA.

4.5.3.2 The City shall release Retained Funds only upon the following conditions: (a) the SFMTA has issued Final Acceptance of the Project; and, (b) the Contract is free of offsets by the City for liquidated damages, claims, and defective Work, and is free of forfeitures and other charges.

4.5.3.3 The Contractor may apply for early release of retention for Work performed by any subcontractor whose portion of the Work is complete and has been conditionally accepted by the SFMTA. Contractor shall make such application in writing and shall certify the following:

4.5.3.3.1 That the Work by the subcontractor is complete and satisfactory in accordance with the Contract Documents;

4.5.3.3.2 The total amount paid to the subcontractor by Contractor as of the date of the written request; and

4.5.3.3.3 The amount of Retained Funds associated with the Work performed by the subcontractor.

4.5.3.4 Contractor acknowledges and agrees that the release of Retained Funds under this subparagraph shall not reduce the responsibilities or liabilities of the Contractor or its surety(ies) under the Contract or applicable law.

4.5.3.5 At the request and expense of Contractor, the Retained Funds may be placed in escrow in an interest-bearing account approved by the City's Controller. Upon Contractor's request, the City will authorize the escrow agent to release to Contractor the accrued interest from the Retained Funds, no less often than quarterly.

4.5.3.6 The City shall have the right to use and apply Retained Funds (or securities deposited with the City in lieu of Retained Funds, as provided in the preceding section), in whole or in part, to reimburse the City for all liquidated damages due or to become due to the City, complete Work that Contractor is unwilling or unable to complete, and to satisfy any claim or other obligation of the Contractor under the Contract. Any remaining balance of such retained funds shall be paid to Contractor only after discharge in full of all liability incurred by Contractor. If the Retained Funds are not sufficient to discharge all such liabilities of Contractor, Contractor and its sureties shall remain liable to the City until all such liabilities are satisfied in full. Should the Retained Funds be insufficient to cover such damages, Contractor shall pay forthwith the remainder to the City.

4.5.4. Withhold Payments. If Contractor fails to perform the Work in accordance with Contractor's obligations under this Agreement, the City may withhold payment for any element of the Work in dispute until that element of the Work is properly performed, and Contractor shall not stop, suspend or slow its performance of work as a result of City's withholding of payments as provided herein.

4.5.5. Invoice Format. Invoices submitted procured by Contractor under this Agreement must be in a form acceptable to the City's Controller and the SFMTA. City will make payment as specified in Section 4.4.9 (Contractor Payment), or in such alternate manner as the Parties have agreed upon in writing. All invoices must include the following:

- a. A unique invoice number;
- b. A specific invoice date;
- c. PeopleSoft Contract and Purchase Order ID numbers;
- d. PeopleSoft Supplier Name and ID;
- e. Relevant Milestones
- f. Complete description of Work invoiced
- g. Quantity of items;
- h. Description and quantity of invoiced items;
- i. Unit prices of invoiced items;
- j. Sales/use tax;
- k. Total invoice amount;
- l. Monthly progress report as required by Appendix A, Section 3.6.1 (Monthly Progress Report).
- m. Monthly performance report compared to performance standards stated in Appendix A, Section 30.3 (Quantitative RAM Objectives) (when applicable)
- n. Supporting documentation to demonstrate achievement of Relevant Milestone

Invoices that do not include all required information or contain inaccurate information will not be processed for payment.

4.5.6. Payment Terms

4.5.6.1 Unless the SFMTA notifies Contractor that a dispute exists, the City will issue payment within 30 Days from the date of receipt of the invoice. Payment is deemed to be made on the date on which City has posted the electronic payment to Contractor.

4.5.6.2 No additional charge or interest shall accrue against City in the event City does not make payment within any time specified by the Contract.

4.5.7. Progress Payment Form. The Controller is not authorized to pay invoices submitted by Contractor prior to Contractor's submission of the SFMTA Progress Payment Form (SFMTA Form No. 6). If the Progress Payment Form is not submitted with Contractor's invoice, the Controller will notify the SFMTA and Contractor of the omission. If Contractor's failure to provide the SFMTA Progress Payment Form is not explained to the Controller's satisfaction, the Controller will withhold 20 percent of the payment due pursuant to that invoice until Contractor submits the completed SFMTA Progress Payment Form.

4.5.8. SBE Payment and Utilization Tracking System. Contractor shall pay SBE subcontractors within three business days of the SFMTA's payment of an invoice. Within 10 business days of the SFMTA's payment of an invoice, Contractor shall confirm to the SFMTA that all subcontractors have been paid via the B2GNow System (<https://sfmta.diversitycompliance.com/>). Failure to submit all required payment information to the City's Financial System with each payment request may result in the withholding of 20% of the payment due until Contractor submits the required information.

4.5.9. Contractor Payment

4.5.9.1 The City utilizes the Paymode-X® service offered by Bank of America Merrill Lynch to pay City contractors. Contractor must sign up to receive electronic payments to be paid under this Agreement. To sign up for electronic payments, visit <http://portal.paymode.com/citycountyofsanfrancisco>.

4.5.9.2 The City may require Contractor to submit invoices directly in the City's financial and procurement System (PeopleSoft) via eSettlement. Refer to <https://sfcitypartner.sfgov.org/pages/training.aspx> for more information on eSettlement. For access to PeopleSoft eSettlement, submit a request through sfemployeeportalsupport@sfgov.org

4.5.10. Grant-Funded Contracts

4.5.10.1 Disallowance. If Contractor requests or receives payment from City for Services, reimbursement for which is later disallowed by the State of California or United States Government, Contractor shall promptly refund the disallowed amount to City upon City's request. In its discretion, City may offset the amount disallowed from any payment due or to become due to Contractor under this Agreement or any other Agreement between Contractor and City.

4.5.10.2 Grant Terms. The funding for this Agreement is provided to the SFMTA in full or in part by a federal or State grants. As part of the terms of receiving the funds, the SFMTA must incorporate some of the terms into this Agreement (Grant Terms). The incorporated Grant Terms are in Appendix G (Federal Contract Requirements). To the extent that any Grant Term is inconsistent with any other provisions of this Agreement such that Contractor is unable to comply with both the Grant Terms and the other provision(s), the Grant Terms shall apply.

4.5.11. Subcontractors. As required by the Grant Terms, Contractor shall insert applicable provisions into each lower-tier subcontract. Contractor is responsible for

compliance with the Grant Terms by its subcontractors, lower-tier subcontractors, or service providers.

4.6. Audit and Inspection of Records. Contractor agrees to maintain and make available to the City, during regular business hours, accurate books and accounting records relating to the Project and the Services. Contractor will permit City to audit, examine, and make excerpts and transcripts from such books and records, and to make audits of all invoices, Materials, payrolls, records or personnel and other data related to all other matters covered by this Agreement, whether funded in whole or in part under this Agreement. Contractor shall maintain such data and records in an accessible location and condition for a period of not less than five years after final payment under this Agreement or until after final audit has been resolved, whichever is later. The State of California or any federal agency having an interest in the subject matter of this Agreement shall have the same rights as conferred upon City by this Section. Contractor shall include the same audit and inspection rights and record retention requirements in all subcontracts. The City's rights under this Section 4.5 (Audit and Inspection of Records) are in addition to the audit provisions stated in Appendix G (Federal Contract Requirements).

4.7. Submitting False Claims. The full text of San Francisco Administrative Code Chapter 21, Section 21.35, including the enforcement and penalty provisions, is incorporated into this Agreement. Pursuant to San Francisco Administrative Code §21.35, any contractor or subcontractor who submits a false claim shall be liable to the City for the statutory penalties set forth in that section. A contractor or subcontractor will be deemed to have submitted a false claim to the City if the contractor or subcontractor: (a) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or approval; (b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the City; (c) conspires to defraud the City by getting a false claim allowed or paid by the City; (d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (e) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim.

ARTICLE 5 WORK AND RESOURCES

5.1. Work Contractor Agrees to Perform. This Agreement is intended to provide the legal and procedural framework for Contractor's provision of the Services. Contractor agrees to perform the Work as generally described in this Agreement, and as more particularly described in Appendix A (Contract Specifications), including but not limited to design, procurement of Equipment and Software oversight of Equipment installation, assistance with Legacy Systems integration, and implementation and testing of the CBTC, and following the Procurement Phase, providing Support Services and providing spare parts, Updates to the Software, and other technical support services as needed for the continued operation of the CBTC for its expected life, and such Incidental Work as necessary to meet the purposes of this Agreement.

5.2. Exercise of Options. The SFMTA has five (5) Options under this Contract. Options 1, 2 and 3 provide for Contractor's provision of additional Vehicle Equipment, as described in Appendix A, Section 2.4 (CBTC Fleet Options) A. Options 4 and 5 are five-year extensions to the Support Term, as described in Article 3 (Contract Term). Contractor shall perform the Work described as Options in the referenced Contract provisions following written notice from the SFMTA.

5.3. Additional Work. Officers and employees of the City are not authorized to request, and the City is not required to reimburse Contractor for, Services beyond the Services

described in this Agreement unless this Agreement is modified to include those Services in accordance with Section 12.5 (Modification of this Agreement).

5.4. Services Provided by Attorneys. Any services to be provided by a law firm or attorney to this Project must be reviewed and approved in writing in advance by the City Attorney. No invoices for services provided by law firms or attorneys, including, without limitation, as subcontractors of Contractor, will be paid unless Contractor and law firm or attorney have received advance written approval from the City Attorney.

5.5. Reports. Contractor shall submit written reports and other written Deliverables as requested by the SFMTA. Format for the content of such reports shall be determined by the SFMTA. The timely submission of all reports is a necessary and material term and condition of this Agreement. The reports, including any copies, shall be submitted electronically. When requested by SFMTA, report shall be printed on recycled paper and using double-sided pages to the maximum extent possible.

5.6. Department Liaison. Contractor's liaison with the SFMTA will be Dan Howard, SFMTA, 1455 Market Street, 7th floor, San Francisco, CA 94103; 415-646-4119; dan.howard@sfmta.com.

5.7. Parties' Roles and Responsibilities. Contractor's and City's respective obligations to implement the System are stated in this Agreement. The City's roles and responsibilities for the Project are expressly identified as City obligations; all other obligations stated in this Agreement are assigned to and are the responsibility of Contractor.

5.8. Contractor's Personnel

5.8.1. Qualified Personnel. Contractor shall use only competent personnel under the supervision of, and in the employment of, Contractor (or Contractor's authorized Subcontractors) to perform the Work. Contractor will comply with City's reasonable requests regarding assignment and/or removal of personnel, but all personnel, including those assigned at City's request, must be supervised by Contractor. Contractor shall commit adequate resources to allow timely completion within the Milestone Schedule specified in Appendix C (Payment Milestones).

5.8.2. Key Personnel. The SFMTA selected Contractor in large part due to the particular experience and expertise of the Key Personnel listed in Contractor's Proposal. Contractor shall not reassign said personnel to other Projects or assignments without the express written approval of the SFMTA. Contractor agrees that the following Key Personnel shall be committed and assigned to provide Services under this Agreement to the level required by SFMTA for as long as necessary to complete the portions of the Work assigned to them, and said Key Personnel shall be located at Contractor's offices in the San Francisco Bay Area while assigned to the Project:

[List employees' names, positions, and assigned Project Phase]

5.8.3. Replacement of Key Personnel. Contractor shall provide the SFMTA not less than three-months' notice prior to reassigning or replacing Key Personnel. Contractor shall replace existing Key Personnel only with persons with equal or better experience and expertise. Replacement Key Personnel are subject to the approval of the SFMTA. Contractor shall provide the SFMTA the complete resume (academic and work history) of proposed replacement Key Personnel not less than eight weeks prior to the departure date of existing Key Personnel to be reassigned or replaced. The SFMTA shall have no obligation to pay Contractor for any Work performed by replacement Key Personnel who the SFMTA have not approved.

5.8.4. Training Period. If the SFMTA approves Contractor's request to reassign or replace any Key Personnel, Contractor shall provide a training period of not less than four weeks during which the current Key Personnel will train their replacement on the aspects of the Project for which they will be responsible. Contractor shall bear all expenses arising from the replacement of Key Personnel, including but not limited to the salary costs of the replacement Key Personnel during the training period. Contractor shall be responsible for all City costs arising from any delays arising from or related to Contractor's replacement of Key Personnel.

5.8.5. Reassignment of Personnel. The SFMTA reserves the right to require Contractor to reassign (remove) from the Project any person under Contractor's control (including employees, subcontractors, and consultants) if the SFMTA is unsatisfied with that person's performance, is offensive, or fails to demonstrate the required qualifications or expertise necessary to perform the Work.

5.8.6. Current Workload and Available Resources. Contractor shall ensure that its other projects, contracts, and obligations do not limit the availability of Contractor's personnel and resources necessary for Contractor to perform the Work and complete the Project and its Milestones and subordinate tasks, within the periods specified or otherwise provided in this Agreement and Project Schedule. Requirements concerning the development, review and update of the Project Schedule are set out in Appendix A, Section 3.2.4 (Schedule).. Contractor shall ensure that its personnel and subcontractors necessary to perform particular tasks or portions of the Services are available to perform their assigned parts of the Services in accordance with the Project Schedule.

5.8.7. Contractor Vaccination Policy

5.8.7.1 Covered Employee

A Covered Employee is an employee of a contractor or subcontractor working at a City owned, leased, or controlled facility who:

(1) works in an indoor office workspace where City employees regularly work for more than 4 cumulative hours in a day, more than 15 cumulative hours in a 7-day period, or more than 20 cumulative hours in a 14-day period, or

(2) regularly works within six feet of one or more City employees, for more than 4 cumulative hours in a day, more than 15 cumulative hours in a 7-day period, or more than 20 cumulative hours in a 14-day period

(3) For the purpose of this definition, “indoor office workspace” includes open-plan office space and office suites with shared common spaces such as hallways, conference rooms, and break rooms, but does not include separate public space in an office building, such as a bathroom, elevator, or lobby.

(4) Also, for the purpose of this definition, a sole proprietor contractor qualifies as a Covered Employee.

5.8.7.2 Policy

Contractor acknowledges that it has read the requirements of the 38th Supplement to Mayoral Proclamation Declaring the Existence of a Local Emergency (“Emergency Declaration”), dated February 25, 2020, and the Contractor Vaccination Policy for City Contractors issued by the City Administrator (“Contractor Vaccination Policy”), as those documents may be amended from time to time. A copy of the Contractor Vaccination Policy can be found at: <https://sf.gov/confirm-vaccine-status-your-employees-and-subcontractors>.

5.8.7.3 A Contract subject to the Emergency Declaration is an agreement between the City and any other entity or individual and any subcontract under such agreement, where Covered Employees of Contractor or Subcontractor work in-person with City employees in connection with the work or services performed under the agreement at a City owned, leased, or controlled facility. Such agreements include, but are not limited to, professional services contracts, general services contracts, public works contracts, and grants. Contract includes such agreements currently in place or entered into during the term of the Emergency Declaration. Contract does not include an agreement with a state or federal governmental entity or agreements that do not involve the City paying or receiving funds.

5.8.7.4 In accordance with the Contractor Vaccination Policy, Contractor agrees that:

(a) Contractor has read the Contractor Vaccination Policy pertaining to the obligations of City;

(b) Where applicable, Contractor shall ensure it complies with the requirements of the Contractor Vaccination Policy pertaining to Covered Employees, as they are defined under the Emergency Declaration and the Contractor Vaccination Policy, and insure such Covered Employees are either fully vaccinated for COVID-19 or obtain from Contractor an exemption based on medical or religious grounds; and

(c) If Contractor grants Covered Employees an exemption based on medical or religious grounds, Contractor will promptly notify the SFMTA by completing and submitting the Covered Employees Granted Exemptions Form (“Exemptions Form”), which can be found at <https://sf.gov/confirm-vaccine-status-your-employees-and-subcontractors> (navigate to “Exemptions” to download the form).

5.9. Transmittal of Work Product. When requested by the SFMTA, the Contractor shall transmit to Agency all work product produced or accumulated in the course of its and its Subcontractors' work on this Agreement. The Contractor's Project Manager and Key Personnel shall have thoroughly reviewed and approved the work product prior to transmitting it to Agency. Contractor may retain copies of work product for its own reference, but for no other purpose.

5.10. Subcontracting

5.10.1. Subcontracts. Contractor may subcontract portions of the Work only upon prior written approval of City. Contractor shall closely monitor and is responsible for its Subcontractors' performance of Work. All subcontracts must incorporate the terms of Article 11 (Additional Requirements Incorporated by Reference) of this Agreement. Neither Party shall, on the basis of this Agreement, contract on behalf of, or in the name of, the other Party. Any agreement made in violation of this provision shall be null and void.

5.10.2. List of Subcontractors. City's execution of this Agreement constitutes its approval of the Subcontractors listed below.

[Insert names of desired approved Subcontractors here]

5.11. Independent Contractor; Payment of Employment Taxes and Other Expenses

5.11.1. Independent Contractor. For the purposes of this Section 5.11, "Contractor" shall be deemed to include not only Contractor, but also any agent or employee of Contractor. Contractor acknowledges and agrees that at all times, Contractor or any agent or employee of Contractor shall be deemed at all times to be an independent contractor and is wholly responsible for the manner in which it performs the services and work requested by City under this Agreement. Contractor, its agents, and employees will not represent or hold themselves out to be employees of the City at any time. Contractor or any agent or employee of Contractor shall not have employee status with City, nor be entitled to participate in any plans, arrangements, or distributions by City pertaining to or in connection with any retirement, health or other benefits that City may offer its employees. Contractor or any agent or employee of Contractor is liable for the acts and omissions of itself, its employees and its agents. Contractor shall be responsible for all obligations and payments, whether imposed by federal, any state or local law, including, but not limited to, FICA, income tax withholdings, unemployment compensation, insurance, and other similar responsibilities related to Contractor's performing services and work, or any agent or employee of Contractor providing same. Nothing in this Agreement shall be construed as creating an employment or agency relationship between City and Contractor or any agent or employee of Contractor. Any terms in this Agreement referring to direction from City shall be construed as providing for direction as to policy and the result of Contractor's work only, and not as to the means by which such a result is obtained. City does not retain the right to control the means or the method by which Contractor performs work under this Agreement. Contractor agrees to maintain and make available to City, upon request and during regular business hours, accurate books and accounting records demonstrating Contractor's compliance with this Section. Should City determine that Contractor, or any agent or employee of Contractor, is not performing in accordance with the requirements of this Agreement, City shall provide Contractor with written notice of such failure. Within five business days of Contractor's receipt of such notice, and in accordance with Contractor policy

and procedure, Contractor shall remedy the deficiency. Notwithstanding, if City believes that an action of Contractor, or any agent or employee of Contractor, warrants immediate remedial action by Contractor, City shall contact Contractor and provide Contractor in writing with the reason for requesting such immediate action.

5.11.2. Payment of Employment Taxes and Other Expenses. Should City, in its discretion, or a relevant taxing authority such as the Internal Revenue Service or the State Employment Development Division, or both, determine that Contractor is an employee for purposes of collection of any employment taxes, the amounts payable under this Agreement shall be reduced by amounts equal to both the employee and employer portions of the tax due (and offsetting any credits for amounts previously paid by Contractor which can be applied against this liability). City shall then forward those amounts to the relevant taxing authority. Should a relevant taxing authority determine a liability for past services performed by Contractor for City, upon notification of such fact by City, Contractor shall promptly remit such amount due or arrange with City to have the amount due withheld from future payments to Contractor under this Agreement (again, offsetting any amounts already paid by Contractor which can be applied as a credit against such liability). A determination of employment status pursuant to this Section 4.8 shall be solely limited to the purposes of the particular tax in question, and for all other purposes of this Agreement, Contractor shall not be considered an employee of City. Notwithstanding the foregoing, Contractor agrees to indemnify and save harmless City and its officers, agents and employees from, and, if requested, shall defend them against any and all claims, losses, costs, damages, and expenses, including attorneys' fees, arising from this Section.

5.12. Assignment. The Work that Contractor shall perform under this Agreement are personal in character. Neither this Agreement nor any duties or obligations hereunder may be directly or indirectly assigned, novated, hypothecated, transferred, or delegated by Contractor, or where Contractor is a joint venture, a joint venture partner (collectively referred to as an "Assignment"), unless first approved by City by written instrument executed and approved as required under City law and under the policy of the SFMTA Board of Directors. The City's approval of any such Assignment is subject to Contractor demonstrating to City's reasonable satisfaction that the proposed transferee is: (a) reputable and capable, financially and otherwise, of performing each of Contractor's obligations under this Agreement and any other documents to be assigned, (b) not forbidden by applicable law from transacting business or entering into contracts with City; and (c) subject to the jurisdiction of the courts of the State of California. A change of ownership or control of Contractor or a sale or transfer of substantially all of the assets of Contractor shall be deemed an Assignment for purposes of this Agreement. Contractor shall immediately notify City about any Assignment. Any purported Assignment made in violation of this provision shall be null and void. . (See also Section 5.19 ("Discontinuation of Business."))

5.13. Standard of Care. Contractor agrees that the design and implementation of the CBTC are specialized engineering services. Contractor warrants to City that the Services will be performed with the degree of skill and care that is required by current, good and sound professional procedures and practices, and in conformance with generally accepted professional standards applicable to communications-based train control systems and other passenger rail train control systems prevailing at the time the Services are performed, so that all Services Contractor provides are correct and appropriate for the purposes contemplated in this Agreement. Said standards shall conform to IEEE 1474 series and applicable AREMA standards.

5.14. Equipment and Software Warranties. The terms of Contractor's warranty obligations are described in Appendix A, Section 13 (Warranty and Spare Parts).

5.15. Delivery of Equipment, Software and Materials

5.15.1. Delivery. Contractor shall deliver all Equipment and procured Materials to the SFMTA according to the Project Schedule to ensure that the Equipment and procured Materials are available to the Installers before said Equipment and Materials are needed

for Installation. Contractor shall be responsible for any costs the SFMTA incurs (including Installers' delay claims) arising from or related to Contractor's later delivery to the SFMTA of Equipment and procured Materials.

5.15.2. Transfer of Title. Title of all Equipment and procured Materials shall transfer to the SFMTA upon the SFMTA's payment for the item(s), irrespective of possession of said item(s) and irrespective of whether the SFMTA has conditionally accepted the items. Payment for Equipment, Software, and procured Materials shall not constitute acceptance of the item(s) and is not a waiver of any requirement of the Contract.

5.15.3. Risk of Loss. Contractor shall bear all risk of loss of Equipment, Software and other Contractor-procured Materials, including any damage or loss sustained during transportation from Contractor's (or its supplier's) point of origin, until said Equipment and procured Materials are installed or until the SFMTA conditionally accepts the delivered Equipment, Software and Materials. Contractor shall insure all Equipment, Software and Materials against damage and loss, regardless of whether said items are in Contractor's possession, in transit, or in the SFMTA's possession. See Section 6.1 (Insurance and Indemnity)

5.16. Project Schedule.

5.16.1. Schedules. Contractor shall prepare, maintain and update the Project Schedule as provided in Appendix A, Section 3.2.4 (Schedule) . .

5.16.2. Wayside Work Moratorium; Interference with Transit Operations. For any Work that Contractor performs, including system testing, that requires a Closure or is Work performed on the wayside, in Stations, or on platforms that may interfere with Revenue Service, Contractor shall schedule that Work in accordance with the requirements for track, tunnel and wayside access provided in Appendix J (Track and Tunnel Access Procedures). Contractor shall confer with SFMTA in planning its Project Schedule and schedule updates to confirm that Contractor's planned Work activities will not interfere with Revenue Service, other transit operations, transit infrastructure maintenance and repairs, and other SFMTA activities.

5.16.3. Incidental Work. Contractor's costs and or time expended related to or arising from planning, scheduling, and coordinating Closures to accommodate holiday moratorium periods, Revenue Service and other transit operations are Incidental Work for which Contractor shall not receive additional compensation.

5.17. Delay, Force Majeure, and Liquidated Damages.

5.17.1. Delay. Time is of the essence in Contractor's performance of the Work. See Section 12.15 (Time is of the Essence). By entering into this Agreement, Contractor agrees that in the event the progress or completion of the Work is delayed beyond the scheduled Milestones and other Work completion deadlines as provided in the approved Project Schedule, as may be revised by Contract Modifications, City will suffer damages that will be impracticable or extremely difficult to determine. Contractor further agrees that the amounts listed as liquidated damages in the Agreement for each Day or hour of delay beyond scheduled Milestones and timelines are not a penalty, but are a reasonable estimate of the loss that City will incur based on the delay, established in light of the circumstances existing at the time this Contract was Awarded. Except where the delay is the result of an Unavoidable Delay, City may deduct a sum representing said liquidated damages from any money due to Contractor. Such deductions shall not be considered a penalty, but are agreed monetary damages and compensation for losses the City has sustained because of Contractor's failure to deliver the Work or specified element of the Work to City within the time stated in the Agreement, as it may be amended.

5.17.2. Unavoidable Delay. An Unavoidable Delay is an interruption of the Work beyond the control of Contractor, which Contractor could not have avoided by the exercise of care, prudence, foresight, and diligence. Such delays include and are limited to Force Majeure Events, changes in the Work ordered by the City insofar as they necessarily require additional time in which to complete the entire Work; the prevention by the City of Contractor's commencing or performing the Work. The duration of said Unavoidable Delays shall be limited to the extent that the commencement, prosecution, and completion of the Work are delayed thereby, as determined by the City.

5.17.3. Notification of Delay. Contractor shall notify SFMTA as soon as Contractor has, or should have, knowledge that an event has occurred that will delay the Work beyond Milestones or the Project Final Completion date. Within five calendar days, Contractor shall confirm such notice in writing, furnishing as much detail as is available.

5.17.4. Request for Extension. Contractor agrees to supply, as soon as such data are available, any reasonable proof that is required by SFMTA to decide on any request for change in Contract Time. SFMTA shall examine the request and any documents supplied by Contractor and shall determine if Contractor is entitled to an extension and the duration of such extension. SFMTA shall notify Contractor of its decision in writing. The granting of an extension of time because of Unavoidable Delays shall in no way operate as a waiver on the part of the City of the right to collect liquidated damages for other delays or of any other rights to which the City is entitled.

5.17.5. Liability. No Party shall be liable for delay in the performance of its obligations under this Agreement if and to the extent such delay is caused, directly or indirectly, by Force Majeure Event. In the case of a Force Majeure Event, Contractor shall immediately commence disaster recovery services as described in Section 5.17.8 (Disaster Recovery).

5.17.6. Duration. In a Force Majeure Event, the non-performing Party shall be excused from further performance or observance of the obligation(s) so affected for as long as such circumstances prevail and such Party continues to use its best efforts to recommence performance or observance whenever and to whatever extent possible without delay. Any Party so delayed in its performance shall immediately notify the Party to whom performance is due by telephone (to be confirmed in writing within two (2) days of the inception of such delay) and describe at a reasonable level of detail the circumstances causing such delay.

5.17.7. Effect. If a Force Majeure Event substantially prevents, hinders, or delays performance of the Services as critical for more than fifteen (15) consecutive Days, then the City may: (i) City may terminate any portion of this Agreement so affected and the charges payable hereunder shall be equitably adjusted to reflect those terminated Services; or (ii) City may terminate this Agreement without liability to City or Contractor as of a date specified by City in a written notice of termination to Contractor. Contractor shall not have the right to any additional payments from City for costs or expenses incurred by Contractor as a result of any force majeure condition that lasts longer than three (3) days.

5.17.8. Disaster Recovery. In the event of a disaster, as defined below, Contractor shall provide disaster recovery services in accordance with the provisions of its disaster recovery plan (see Appendix , Section 3.2.3 (Project Management Plan) or as otherwise set forth in this Agreement. A Force Majeure Event shall not excuse Contractor of its obligations for performing disaster recovery services as provided in this Agreement. In the event that a disaster occurs, and Contractor fails to restore the Software-as-a-Service (SaaS) hosting services within 24 hours of the initial disruption to those Services, City may, in its discretion, deem such actions to be a material default by Contractor incapable of cure, and City may immediately terminate this Agreement. For purposes of this Agreement, a "disaster" shall mean an interruption in the hosting services or the inability of Contractor to provide City with the SaaS

Application and hosting services for any reason that could not be remedied by relocating the SaaS Application and hosting services to a different physical location outside the proximity of its primary Data Center.

5.17.9. Liquidated Damages for Transit Service Interruption.

The SFMTA will operate Revenue Service throughout the Contract Term (in both the Procurement Term and Support Term) on rail lines on which or in close proximity to areas where Contractor will need to perform Work. The SFMTA and Contractor must carefully coordinate Contractor’s performance of the Services to minimize disruption of transit services. The SFMTA will schedule temporary rail service suspensions (“Closures”) of portions of its rail network to accommodate Contractor’s performance of the Services, in accordance with permits and clearances requested by Contractor and granted by SFMTA. A Closure will significantly impact public transit services. A Closure will require the SFMTA to limit or completely suspend transit service along an affected rail line and will require the SFMTA to expend substantial resources to plan and to perform community outreach and manage public relations to inform affected passengers and neighborhoods prior to a Closure, and to plan, resource, and staff alternate transit services (including bus bridges). In consideration of those expenditures and other costs, damages and impacts, the value of which would be difficult or impossible to calculate at the time of Contractor’s failure to provide timely notice of a Closure or delay in returning a rail line to Revenue Service following a Closure, the liquidated damages provided below represent a fair estimate of the damages the SFMTA will incur and impacts to the public arising from said lack of timely notice or delay, in light of the circumstances and facts known at the time of Contract Award.

5.17.9.1 Liquidated Damages for Requesting Closures on Short

Notice. Contractor shall request Closures as provided in the SFMTA Track and Tunnel Access Procedures (see Appendix J (SFMTA Policies and Procedures). As provided in those Procedures, Contractor shall request a Closure not less than 180 Days in advance of the requested Closure date, (or within such time prescribed in the version of the Track and Tunnel Access Procedures in effect at time of the request), so that the SFMTA has adequate time to evaluate impacts on transit service, plan for alternate service, and inform the public of the dates and times of each Closure. In the event that Contractor requests a Closure, or modifies a request for a Closure such that the dates and times of the Closure change from those specified in the original request, and that new request or modification results in the SFMTA having fewer than the minimum number of Days specified in the SFMTA Track and Tunnel Access Procedures, Contractor shall pay liquidated damages in the amount of Thirty-Five Thousand Dollars (\$35,000).

5.17.9.2 Liquidated Damages for Exceeding Closure Period.

Contractor shall manage its work and perform the Services during a Closure to ensure that the closed rail line is reopened to Revenue Service as scheduled in the Closure permit. In the event that Contractor does not vacate a trackway or rail line as scheduled or occupies a trackway or rail line or otherwise interferes with and delays the SFMTA’s re-opening a rail line or trackway to Revenue Service beyond the time stated in a Closure permit Contractor shall pay the SFMTA the sum(s) stated in the following Liquidated Damages Schedule:

Delay Period	LD Value \$
First hour (or fraction thereof)	\$35,000
1-2 hours	\$5,000

3-4 hours	\$10,000
Over 4 hours, and continuing for each 24-hour period	\$50,000

5.17.10. Liquidated Damages for Cancelling or Postponing a

Closure. Contactor acknowledges and agrees that a Closure is a significant event that may require the SFMTA to expend substantial resources to plan, schedule and staff alternate transit services (such as bus bridges) to maintain minimum transit services during a Closure, and to perform community outreach and manage public relations to inform affected passengers and neighborhoods prior to a Closure. In consideration of those and other costs, damages and other impacts that are difficult or impossible to calculate, if Contractor cancels or otherwise postpones the commencement of a Closure as specified for which the SFMTA has already expended planning resources and provided notice of the Closure to the public, Contractor shall pay to the SFMTA the sum of Fifty Thousand Dollars (\$50,000) as compensation for the SFMTA’s costs to inform the public and provide resources to inform the public of the delay to the Closure and/or reschedule the Closure.

5.17.11. Liquidated Damages for Project Delays.

The purpose this Agreement is to procure and implement a CBTC to replace of the SFMTA’s existing train control system (ATCS), which due to age is deteriorating, resulting in ATCS equipment malfunctions and ATCS outages that delay and otherwise impact transit service. If Contractor delays the final completion of the Projector delays completion of Project Milestones, the SFMTA will suffer damages arising from continuing and additional delays and other impacts to transit service caused by ATCS malfunctions and downtime that would have been avoided but for said Contractor delays. Said damages would be impractical or extremely difficult to calculate at time the delay occurs, which involve loss of public use, loss of fare revenue, and loss of the SFMTA’s reputation in addition to the direct labor, equipment, and administrative costs that the SFMTA would incur in operating its rail transit services in manual mode and providing alternate transit services. Contractor therefore agrees that the SFMTA may assess liquidated damages for said Contractor’s delays, as set out in the following sections. Said liquidated damages do not constitute a penalty but are a reasonable estimate of the losses that City will incur arising from delay, based on the information available and the circumstances existing at the time this Agreement was Awarded.

5.17.11.1 In the event that the Subway Cutover Date (Milestone 5.7) is delayed by Contractor beyond the date stated in the approved Project Schedule, the City will suffer actual damages that will be impractical or extremely difficult to determine. Contractor therefore agrees that it will pay the SFMTA the sum of Forty Thousand Dollars (\$40,000) for each Day the scheduled Subway Cutover is delayed.

5.17.11.2 In the event that the Final Commissioning Date (Milestone 10.7) is delayed by Contractor beyond the date stated in the approved Project Schedule, the City will suffer actual damages that will be impractical or extremely difficult to determine. Contractor therefore agrees that it will pay the SFMTA the sum of Thirty Thousand Dollars (\$30,000) for each Day the scheduled Final Commissioning Date is delayed.

5.17.12. City may deduct a sum representing assessed liquidated damages from any money due to Contractor under this Agreement.

5.17.13. The SFMTA will not assess Liquidated damages during the Procurement Term that exceed a sum total of 10 percent of the Total System Procurement Price, as stated in Table 1 of Appendix B, as that amount may be modified by approved Contract Modifications. The SFMTA will not assess Liquidated damages during the Support Term that exceed a sum total of 10 percent of the Total Support Fee (See Appendix B , Table 3 (System Support Prices), Column D (Maximum Support Fee) (Schedule of Prices and Calculation of Charges), as the Total Support Fee may be amended by approved Contract Modifications and the SFMTA's exercise of Options to extend the Support Term.

5.17.14. If the total amount of liquidated damages accrued by Contractor for Contractor's delays exceed the limits stated in the preceding Section 5.17.13, Contractor's delays shall constitute a material breach of this Agreement, which the SFMTA may deem to be an Event of Default for which the SFMTA may seek its actual damages and other remedies that would otherwise be liquidated. See Section 9.2 (Termination for Default; Remedies).

5.17.15. Contractor's payment of liquidated damages under any provision of this Contract shall not relieve Contractor from separate liability for liquidated damages under the other provision(s) of the Contract, each to the full extent of the specified amount, regardless of whether the times for which liquidated damages are to be paid do or do not run concurrently, or whether each liability is or is not a consequence of the other.

5.17.16. The SFMTA's right to assess liquidated damages under the Contract does not reduce or compromise the SFMTA's rights to terminate the Contract for cause or convenience, demand that Contractor cure any breach of the Contract, or seek performance of the Contract under any bond that guarantees the performance of the Contract.

5.18. Bond Requirements. Within ten Working Days of the date the Agreement is Awarded, Contractor shall furnish a performance bond in a form acceptable to City (see Appendix F, Performance Bonds), as a condition precedent to the Agency's issuance of the Notice to Proceed. Said performance bond shall guarantee Contractor's faithful performance of the Services and other requirements of the Contract. The bond must be approved as to sufficiency and qualifications of the surety by the City's Risk Manager. The sum of the performance bond shall not be less than 100 percent of the "Total System Procurement Price" stated in Table 1 of Appendix B (Schedule of Prices and Calculation of Charges). At Subway Conditional Acceptance (Milestone 5.8), Contractor may reduce the bond to not less than 60 percent of the "Total System Procurement Price" identified in Table 1 of Appendix B. Following Final Acceptance at the conclusion of the Procurement Term, Contractor may reduce the bond to not less than thirty percent (30%) of the base 10 year "Total Support Fee" (calculated as 12 x 10 x the Monthly Support Fee stated in Table 3 of Appendix B). The SFMTA may require a performance bond for each of the 5-year Options to extend the Support Term as a condition precedent of issuing NTP for that Option. If the SFMTA requires a bond for each Support Option, which will be not more than [30%] of the price for the Support Option, the SFMTA will add the cost of the bond to the Option price.

5.19. Business Discontinuation. Contractor agrees that in the event it exits the train control business or otherwise ceases to market and/or ceases to provide maintenance and support services to the SFMTA and other transit agencies that utilize Contractor's CBTC systems, and there is no successor in interest by merger, operation of law, assignment, purchase, or otherwise, notwithstanding any other remedy that the City may have under the Agreement or at law, Contractor shall provide City not less than 24 months' notice prior to ceasing operations and support, and shall make available to the SFMTA all Equipment that the SFMTA determines that it will require to operate the CBTC for whatever period the SFMAT may determine is necessary to procure and cutover to another train control system. Contractor shall also under those circumstances provide the SFMTA without charge, one (1) copy of the then-current Source Code for all of the programs and all supporting Documentation for the Software then operating in the CBTC. If City should obtain the Source Code and the Documentation pursuant to this Section

5.19, the only use made of the Source Code and the Documentation will be for the proper maintenance of the CBTC in connection with City's use of the CBTC as provided for, and limited by, the provisions of this Agreement.

ARTICLE 6 INSURANCE AND INDEMNITY

6.1. Without in any way limiting Contractor's liability pursuant to the "Indemnification" provisions of this Agreement (see Article 7, Liability of the Parties), Contractor shall maintain in full force and effect the insurance as described in this Article from the Effective Date of this Agreement until this Agreement expires or is terminated, with the minimum specified coverages stated below or as required by applicable laws and regulations, whichever is greater. Subject to approval by the City's Risk Manager, Contractor may use umbrella insurance policies to supplement primary insurance policies or other established insurance programs, provided that the protection afforded to the City by such alternate insurance programs and the aggregate coverage for any claim is not reduced below the coverage levels specified herein. Subject to approval by the City's Risk Manager, if the specified insurance coverage would result in Contractor obtaining duplicative coverage, subject to proof, Contractor may combine species of coverage under a single policy. All coverage amounts are listed in United States Dollars.

6.1.1. Worker's Compensation Insurance. Contractor shall provide workers compensation insurance in statutory amount, including Employers' Liability coverage with limits not less than \$2,000,000 each accident, injury, or illness, including coverage, as Contractor determines to be applicable, for U.S. Long Shore and Harbor Workers' Act benefits and Jones Act benefits, and Federal Employers Liability Act. The Worker's Compensation policy shall be endorsed with a waiver of subrogation in favor of the City for all work performed by Contractor, its employees, agents and subcontractors.

6.1.2. Commercial General Liability Insurance. Contractor shall provide commercial general liability (CGL) insurance with coverage limits not less than One-Hundred Million Dollars (\$100,000,000) each occurrence, and One-Hundred Million (\$100,000,000) annual aggregate, for bodily injury and property damage, including coverage for Contractual Liability, Personal Injury, Products, Completed Operations, independent Contractor, Explosion, Collapse, and Underground (XCU). and property damage, including coverage for Contractual Liability. Said CGL policy shall not contain any limitation or exclusion that would preclude a claim provided for by the Article 6 (Insurance and Indemnity) or Article 7 (Liability of the Parties) of this Agreement. Administrative costs of claims, including but not limited to legal costs and attorneys fees, shall not be accounted against or otherwise reduce the value of the insurance available to cover an insured loss. Should a claim or claims be paid by said policy that total(s) in the aggregate more than \$5,000,000, Contractor shall within ten (10) Days of receipt of such claim(s) provide notice of same to the SFMTA and obtain additional insurance so that Contractor's Work under Agreement is at all times fully covered as specified herein.

6.1.3. Commercial Automobile Liability Insurance. Contractor shall provide Commercial Automobile Liability Insurance with limits not less than Five Million Dollars (\$5,000,000) each occurrence combined single limit for Bodily Injury and Property Damage, including Owned, Hired Or Non-Owned vehicles coverage, as applicable.

6.1.4. Risk of Loss Insurance. Contractor shall insure Equipment, Software and procured Materials against loss for full replacement value, including shipping costs, until the City's Conditional Acceptance of the Equipment following its installation and commissioning to Revenue Service in a completed Phase. Said insurance shall cover against all losses of Equipment, Software and Materials in transit and in storage, regardless of whether the lost items are in Contractor or SFMTA's possession, and regardless of whether title has transferred to the SFMTA. Contractor shall provide Bailee's Insurance in a form appropriate for

the nature of City property in the care, custody, or control of Contractor, on an all-risk form, for the total (100%) of the replacement value of the stored items. Contractor shall provide Cargo Insurance in a form appropriate for the nature of City property while in transit, on an all-risk form for the total (100%) replacement value of the shipped items. See Section 5.15.3 (Risk of Loss).

6.1.5. Professional Liability Insurance, applicable to Contractor's profession, with limits **not** less than Fifty Million Dollars (\$50,000,000) for each claim with respect to negligent acts, errors or omissions in connection with the Work.

6.1.6. Technology Errors and Omissions Liability coverage, with limits of Fifty Million Dollars (\$50,000,000) for each claim and each loss. The policy shall at a minimum cover professional misconduct or lack of the requisite skill required for the performance of the Work and shall also provide coverage for the following risks:

6.1.6.1 Network security liability arising from the unauthorized access to, use of, or tampering with computers or computer systems, including hacker attacks; and

6.1.6.2 Liability arising from the introduction of any form of malicious software including computer viruses into, or otherwise causing damage to the CBTC System, the City's or third person's computer, computer system, network, or similar computer related property and the data, software, and programs thereon.

6.1.7. Cyber Insurance, with limits of not less than Fifty Million Dollars (\$50,000,000) per claim. Such insurance shall include coverage for liability arising from theft, dissemination, and/or use of Confidential Information, including Security Sensitive Information and Critical Infrastructure Information].

6.1.8. Railroad Protective Liability Insurance with limits of not less than Ten Million U.S. Dollars (\$10,000,000) per occurrence and Ten Million U.S. Dollars (\$10,000,000) in the aggregate annually for losses arising out of bodily injury to or death of all persons, and for physical loss or damage to or destruction of property, including the loss or use thereof. Coverage shall apply to Contractor's activities and operations performed within 50 feet vertically or horizontally of the centerline of BART's tracks, and of SFMTA Muni tracks, and of the Caltrain/Union Pacific rights-of-way. The language of said policy is subject to the approval of BART and the City's Risk Manager.

6.1.9. Waiver of Subrogation. The Workers' Compensation policy(ies) shall be endorsed with a waiver of subrogation in favor of the City for claims arising from or related to any Work performed by Contractor, its employees, agents and subcontractors.

6.1.10. Additional Insured Entities.

6.1.10.1 Contractor's General Liability policies shall include the following entities as Additional Insureds to which Contractor owes a duty of indemnity and defense from claims and lawsuits, as provided in Section 6.2 (Indemnification):

- (1) City and County of San Francisco, its board members and commissions, and all authorized agents and representatives, and members, directors, officers, trustees, agents, and employees of any of them.

(2) Bay Area Rapid Transit District (BART) and its board members, and all authorized agents and representatives, and members, directors, officers, trustees, agents and employees of BART.

6.1.10.2 Contractor's Commercial Automobile Insurance policies shall include the City and County of San Francisco, its board members and commissions, and all authorized agents and representatives, and members, directors, officers, trustees, agents, and employees of any of them as Additional Insureds to which Contractor owes a duty of indemnity and defense from claims and lawsuits, as provided in Section 6.2 (Indemnification).

6.1.11. Primary Insurance.

6.1.11.1 The Commercial General Liability policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

6.1.11.2 The Commercial Automobile Liability Insurance policy shall provide that such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that the insurance applies separately to each insured against whom claim is made or suit is brought.

6.1.12. Other Insurance Requirements.

6.1.12.1.1 All insurance policies required to be maintained by Contractor under this Agreement shall be endorsed to provide for thirty (30) Days prior written notice to the City of cancellation for any reason, intended non-renewal, or reduction in coverage. Said notices shall be sent to the persons and addresses list in Section 12.1 (Notices to the Parties). Contractor, upon notification of receipt by the City of any such notice, shall submit to the City a certificate of the required new or renewed policy at least 10 Days before the effective date of such cancellation, change or expiration, with a complete copy of new or renewed policy.

6.1.12.1.2 Should any of the required insurance be provided under a claims-made form, Contractor shall maintain such coverage continuously throughout the Contract Term and, without lapse, for a period of three years beyond the expiration of this Agreement, to the effect that, should occurrences during the Agreement term give rise to claims made after expiration of the Agreement, such claims shall be covered by such claims-made policies.

6.1.12.1.3 Should any of the required insurance be provided under a form of coverage that includes a general annual aggregate limit or provides that claims investigation or legal defense costs be included in such general annual aggregate limit, such general annual aggregate limit shall be double the occurrence or claims limits specified above.

6.1.12.1.4 Should any required insurance lapse during the Contract Term, requests for payments originating after such lapse shall not be processed until the City receives satisfactory evidence of reinstated coverage as required by this Agreement, effective as of the lapse date. If insurance is not reinstated, the City may, in its sole discretion, suspend all Work at no cost to the City until such time as Contractor provides sufficient evidence that such insurance has been reinstated from the date that the insurance lapsed, or the City may terminate this Agreement effective on the date of such lapse of insurance.

6.1.12.1.5 Within 10 business days of the Award of this Agreement, and before commencing any of the Work, Contractor shall furnish to City certificates of

insurance and additional insured policy endorsements with insurers with ratings comparable to A-, VIII or higher, that are authorized to do business in the State of California, and that are satisfactory to City, in form evidencing all coverages set forth above. Approval of the insurance by City shall not relieve or decrease Contractor's liability hereunder.

6.1.12.1.6 If Contractor will use any subcontractor(s) to perform the Work, Contractor shall require the subcontractor(s) to provide all necessary insurance and to name the City and County of San Francisco, its officers, agents and employees and Contractor as additional insureds.

6.1.12.1.7 If Contractor is a joint venture partnership, each partner shall be jointly and severally liable for claims arising under or related to this Agreement, and no insurance policy providing coverage under this Agreement shall contain any provision prohibiting coverage of a joint venture partnership or otherwise limiting coverage of any joint venture partner or to any joint venture partner.

6.1.13. Insurer Qualifications. Insurance companies providing coverage for this Agreement shall be legally authorized to engage in the business of furnishing insurance in the State of California. All insurance companies shall have a current A.M. Best Rating not less than "A-,VIII" and shall be satisfactory to the City.

6.2. Indemnification.

6.2.1. To the fullest extent permitted by California law, Contractor shall indemnify and hold harmless City and its officers, agents and employees from, and, if requested, shall defend them from and against any and all claims, demands, losses, damages, costs, expenses, and liability (legal, contractual, or otherwise) arising from, related to or in any way connected with any: (i) injury to or death of a person, including employees of City or Contractor; (ii) loss of or damage to property; (iii) violation of local, state, or federal common law, statute or regulation, including but not limited to privacy or personally identifiable information, health information, disability and labor laws or regulations; (iv) strict liability imposed by any law or regulation; (v) direct, economic, indirect, incidental and consequential damages (aka special damages) without limitation; or, (vi) losses arising from Contractor's execution of subcontracts not in accordance with the requirements of this Agreement applicable to Subcontractors; so long as such injury, violation, loss, or strict liability (as set forth in subsections (i) – (vi) above) arises directly or indirectly from Contractor's performance of this Agreement, including, but not limited to, Contractor's use of facilities or equipment provided by City or others, regardless of the negligence of, and regardless of whether liability without fault is imposed or sought to be imposed on City, except to the extent that such indemnity is void or otherwise unenforceable under applicable law, and except where such loss, damage, injury, liability or claim is the result of the active negligence or willful misconduct of City and is not contributed to by any act of, or by any omission to perform some duty imposed by law or agreement on Contractor, its Subcontractors, or either's agent or employee. The foregoing indemnity shall include, without limitation, reasonable fees of attorneys, Contractors and experts, investigation costs, and related costs directly arising from said claim(s).

6.2.2. In addition to Contractor's obligation to indemnify City, Contractor specifically acknowledges and agrees that it has an immediate and independent obligation to defend City from any claim which actually or potentially falls within this indemnification provision, even if the allegations are or may be groundless, false or fraudulent, which obligation arises at the time such claim is tendered to Contractor by City and continues at all times thereafter.

6.2.3. The indemnification stated in this Section 6.2 (Indemnification) is subject to the City: (i) providing Contractor with prompt written notice of the claim; (ii)

granting Contractor sole control of the defense to the claim, except that Contractor may not enter into any settlement that would adversely impact the City's rights or impose liability upon the City without the written consent of the City Attorney and the Director of Transportation; and, (iii) providing reasonable cooperation in the defense of the claim, provided that the City shall not incur any expenses.

6.2.4. The terms, conditions, provisions, and failure to cover of any insurance policy covering Contractor's performance and obligations under this Agreement shall not operate to limit Contractor's Liabilities under this Agreement, nor shall the amount of insurance coverage operate to limit the extent of such Liabilities.

6.2.5. Contractor shall also indemnify and defend the Bay Area Rapid Transit District (BART) from premises liability claims and lawsuits from third parties.

6.3. Intellectual Property Infringement.

6.3.1. Contractor shall indemnify, defend and hold fully harmless City and the Installers from all suits or claims for infringement of the patent rights, copyright, trade secret, trade name, trademark, service mark, or any other intellectual property claims or proprietary right of any person or persons in consequence of the use by City (including any Indemnitees) of any Equipment, Software, Applications, Deliverables, data or other items (Items) supplied or procured by Contractor for or in the performance of Services.

6.3.2. Infringement of patent rights, copyrights, or other proprietary rights in the performance of this Agreement, if not the basis for indemnification under the law, shall nevertheless be considered a material breach of contract.

6.3.3. To cure breach of this provision, Contractor shall at its sole expense and election, provided any such election does not result in any cost to the City, either: (1) indemnify the City; (2) obtain the right to use the infringing Item; or (3) modify the infringing Item so that it becomes non-infringing; or (4) replace the infringing Item with a non-infringing item that meets the requirements of this Agreement.

6.3.4. Contractor shall have no obligations with respect to intellectual property infringements caused by: (1) Contractor's compliance with City's designs (which shall not include City-approved Contractor's designs); (2) City's use or combination of the CBTC System with products or data of the type for which the CBTC System was neither designed nor intended (which exclusion of obligation shall not include integration of the CBTC System with the SFMTA's Third-Party Systems identified in Appendix A, Section 28.3 (CBTC External Interfaces) ; or (3) the modification of the CBTC System in a manner not permitted under this Agreement or (where the Agreement is silent) without Contractor's prior written consent.

ARTICLE 7 LIABILITY OF THE PARTIES

7.1. City's Liability. City's payment obligations under this Agreement shall be limited to the payment of the compensation provided for in Article 4 of this Agreement. Notwithstanding any other provision of this agreement, in no event shall City be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits, arising out of or in connection with this Agreement or the Services performed in connection with this Agreement.

7.2. Contractor's Liability. Contractor's liability to the City and County of San Francisco is limited to the total Contract Amount, as that amount may be modified by Contract Modifications approved in accordance with Section 12.5 (Modification of this Agreement). Contractor's liability to any entity other than the City and County of San Francisco is not limited.

7.3. Liability for Incidental and Consequential Damages. Contractor shall be responsible for incidental and consequential damages resulting in whole or in part from Contractor's acts or omissions.

7.4. Joint and Several Liability. If Contractor is a joint venture partnership, the liability of each partner of the joint venture under this Agreement, including the obligations and requirements of this Article, shall be joint and several. No provision of any joint venture or similar agreement shall limit or amend this requirement.

7.5. Liability for Use of Equipment. City shall not be responsible for any damage to persons or property as a result of the use, misuse or failure of any equipment or tools provided by and used by Contractor, or by any of its employees, for the purposes of performing any Work hereunder, irrespective of whether Contractor, the City or an Installation Contractor provided, rented or loaned said equipment or tools to Contractor.

7.6. Liability for Reference Materials. Contractor acknowledges that the City has provided Contractor with the documents and other written descriptions, drawings, and other materials (which are listed in Appendix L (Technical Addenda) to the RFP as Reference Materials), in which the City has provided Contractor information concerning existing City infrastructure, SFMTA systems, SFMTA transit operations, and other relevant information that Contractor may find useful in order to plan, design, implement and otherwise perform the Services. The City has provided the Reference Materials to Contractor as background and context to the Project. But the City does not warrant or in any way represent that the Reference Materials are complete or fully accurate. Contractor shall confirm all information and Materials on which is relies to plan, design and implement the CBTC System. The City shall not be liable for Contractor's use or reliance on Reference Materials. Contractor shall independently confirm the completeness and accuracy of any information that the Reference Materials contain.

ARTICLE 8 PAYMENT OF TAXES

8.1. Contractor to Pay All Taxes. Except for any applicable California sales and use taxes charged by Contractor to City, Contractor shall pay all taxes, including possessory interest taxes levied upon or as a result of this Agreement, or the Services delivered pursuant hereto. Contractor shall remit to the State of California any sales or use taxes paid by City to Contractor under this Agreement. Contractor agrees to promptly provide information requested by the City to verify Contractor's compliance with any State requirements for reporting sales and use tax paid by City under this Agreement.

8.2. Possessory Interest Taxes. Contractor acknowledges that this Agreement may create a "possessory interest" for property tax purposes. Generally, such a possessory interest is not created unless the Agreement entitles Contractor to possession, occupancy, or use of City property for private gain. If such a possessory interest is created, then the following shall apply:

8.2.1. Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that Contractor, and any permitted successors and assigns, may be subject to real property tax assessments on the possessory interest.

8.2.2. Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that the creation, extension, renewal, or assignment of this Agreement may result in a "change in ownership" for purposes of real property taxes, and therefore may result in a revaluation of any possessory interest created by this Agreement. Contractor accordingly agrees on behalf of itself and its permitted successors and assigns to report on behalf of the City to the County Assessor the information required by Revenue and Taxation Code Section 480.5, as amended from time to time, and any successor provision.

8.2.3. Contractor, on behalf of itself and any permitted successors and assigns, recognizes and understands that other events also may cause a change of ownership of the possessory interest and result in the revaluation of the possessory interest. (see, e.g., Rev. & Tax. Code Section 64, as amended from time to time). Contractor accordingly agrees on behalf of itself and its permitted successors and assigns to report any change in ownership to the County Assessor, the State Board of Equalization or other public agency as required by law.

8.2.4. Contractor further agrees to provide such other information as may be requested by the City to enable the City to comply with any reporting requirements for possessory interests that are imposed by applicable law.

8.3. Withholding. Contractor agrees that it is obligated to pay all amounts due to the City under the San Francisco Business and Tax Regulations Code (SFBTRC) during the Contract Term. Pursuant to SFBTRC Section 6.10-2, Contractor further acknowledges and agrees that City may withhold any payments due to Contractor under this Agreement if Contractor is delinquent in the payment of any amount required to be paid to the City under the SFBTRC. Any payments withheld under this paragraph shall be released to Contractor, without interest, upon Contractor curing its noncompliance with the SFBTRC requirements.

ARTICLE 9 TERMINATION AND DEFAULT

9.1. Termination for Convenience

9.1.1. Exercise of Option. City may, in its sole discretion, terminate this Agreement, at any time during the term hereof, for convenience and without cause. City shall exercise this Option by giving Contractor written notice of termination. The notice shall specify the date on which termination shall become effective.

9.1.2. Contractor Actions. Upon receipt of the notice of termination, Contractor shall commence and perform, with diligence, all actions necessary on the part of Contractor to effect the termination of this Agreement on the date specified by City and to minimize the liability of Contractor and City to third parties as a result of termination. All such actions shall be subject to the prior approval of City. Such actions may include any or all of the following, without limitation:

9.1.2.1 Halting the performance of all Services under this Agreement on the date(s) and in the manner specified by the SFMTA.

9.1.2.2 Terminating all existing orders and subcontracts, and not placing any further orders or subcontracts for Materials, Services, Equipment or other items.

9.1.2.3 At the SFMTA's direction, assigning to City any or all of Contractor's right, title, and interest under the orders and subcontracts terminated. Upon such assignment, the SFMTA shall have the right, in its sole discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.

9.1.2.4 Subject to the SFMTA's approval, settling all outstanding liabilities and all claims arising out of the termination of orders and subcontracts.

9.1.2.5 Completing performance of any Services that the SFMTA designates to be completed prior to the date of termination specified by the SFMTA.

9.1.2.6 Taking such action as may be necessary, or as the SFMTA may direct, for the protection and preservation of any property related to this Agreement which is in the possession of Contractor and in which the SFMTA has or may acquire an interest.

9.1.2.7 Delivering Materials, design documents, warranties, third-party Software and end-user licenses, CBTC System documentation, and Equipment to the

SFMTA, and the SFMTA arranging to accept title to such items for which the City has compensated Contractor, or, at SFMTA's request, purchasing all or the portion of such items for which the SFMTA has not compensated Contractor as stated in Appendix B (Schedule of Prices and Calculation of Charges) or (if not price is stated) in accordance with the pricing requirements of Section 9.1.3 (Contractor Invoice). This provisions covers all warranty and maintenance spare parts, tools and equipment which may be stored by Contractor. The Contractor shall not sell, retain or dispose of all or a portion of any such items subsequent to receiving a notice of termination without the SFMTA's written directive and authorization.

9.1.2.8 Providing complete documentation for all Materials delivered to SFMTA under this Agreement. The Contractor shall transfer all necessary licenses and warranties for the Materials and Software provided to SFMTA.

9.1.3. Contractor Invoice. Within 30 Days after the specified termination date, Contractor shall submit to the SFMTA an invoice, which shall set forth each of the following as a separate line item:

9.1.3.1 The reasonable cost to Contractor, without profit, for all Work performed prior to the specified termination date, for which Work the SFMTA has not already tendered payment. Reasonable costs may include a reasonable allowance for actual overhead, not to exceed a total of 10% of Contractor's direct costs for said Work. Any overhead allowance shall be separately itemized. Contractor may also recover the reasonable cost of preparing the invoice.

9.1.3.2 A reasonable allowance for profit on the cost of the Work described in the immediately preceding subsection (a), provided that Contractor can establish, to the satisfaction of the SFMTA, that Contractor would have made a profit had all Work under this Agreement been completed, and provided further, that the profit allowed shall in no event exceed 5% of such cost.

9.1.3.3 The reasonable cost to Contractor of handling Materials returned to the vendor, delivered to the SFMTA or otherwise disposed of as directed by the SFMTA.

9.1.3.4 A deduction for the cost of Materials which Contractor will retain and for which Contractor has been paid, amounts realized from the sale of Materials and not otherwise recovered by or credited to the SFMTA, and any other appropriate credits to the SFMTA against the cost of said Materials or other elements of the Work.

9.1.3.5 The reasonable cost of the portion of the Materials Contractor for which the SFMTA has not paid Contractor, but that the SFMTA wants to acquire.

9.1.4. Nonrecoverable Costs. In no event shall the City be liable for costs incurred by Contractor (or any of its Subcontractors or suppliers) after the termination date specified by the SFMTA, except for those costs specifically listed in Section 9.1.3 (Contractor Invoice). Such non-recoverable costs include, but are not limited to, anticipated profits on the Services under this Agreement, post-termination employee salaries, post-termination administrative expenses, post-termination overhead or unabsorbed overhead, attorneys' fees or other costs relating to a claim or lawsuit, prejudgment interest, or any other expense which is not reasonable or authorized under Section 9.1.3.

9.1.5. Deductions. In arriving at the amount due to Contractor under this Section, the SFMTA may deduct: (i) all payments previously made by the SFMTA for Services covered by Contractor's final invoice; (ii) any claim which the SFMTA may have against Contractor in connection with this Agreement; (iii) any invoiced costs or expenses excluded pursuant to the immediately preceding Section 9.1.4 (Nonrecoverable Costs); and (iv) in instances in which, in the opinion of the SFMTA, the cost of any portion of the Work performed under this Agreement is excessively high due to costs incurred to remedy or replace

defective or rejected Services, the difference between the invoiced amount and the SFMTA's estimate of the reasonable cost of performing the invoiced Work in compliance with the requirements of this Agreement.

9.1.6. Payment Obligation. The City's payment obligation under this Section shall survive termination of this Agreement.

9.2. Termination for Default; Remedies

9.2.1. Event of Default. Each of the following shall constitute an immediate event of default (Event of Default) under this Agreement:

9.2.1.1 Contractor fails or refuses to perform or observe any term, covenant or condition contained in any of the following Sections of this Agreement:

- 4.6 Submitting False Claims
- 5.12 Assignment
- Article 6 Insurance and Indemnity
- Article 8 Payment of Taxes
- 11.9 Alcohol and Drug-Free Workplace
- 12.12 Compliance with Laws
- Article 13 Data and Security

9.2.1.2 Contractor fails or refuses to perform or observe any other term, covenant or condition contained in this Agreement, including any obligation imposed by ordinance or statute and incorporated by reference herein, and such default is not cured within 30 days after written notice thereof from the SFMTA to Contractor. If Contractor defaults a second time in the same manner as a prior default cured by Contractor, the SFMTA may in its sole discretion immediately terminate the Agreement for default or grant an additional period not to exceed 30 days for Contractor to cure the default.

9.2.1.3 Contractor (i) is generally not paying its debts as they become due; (ii) files, or consents by answer or otherwise to the filing against it of a petition for relief or reorganization or arrangement or any other petition in bankruptcy or for liquidation or to take advantage of any bankruptcy, insolvency or other debtors' relief law of any jurisdiction; (iii) makes an assignment for the benefit of its creditors; (iv) consents to the appointment of a custodian, receiver, trustee or other officer with similar powers of Contractor or of any substantial part of Contractor's property; or (v) takes action for the purpose of any of the foregoing.

9.2.1.4 A court or government authority enters an order (i) appointing a custodian, receiver, trustee or other officer with similar powers with respect to Contractor or with respect to any substantial part of Contractor's property, (ii) constituting an order for relief or approving a petition for relief or reorganization or arrangement or any other petition in bankruptcy or for liquidation or to take advantage of any bankruptcy, insolvency or other debtors' relief law of any jurisdiction or (iii) ordering the dissolution, winding-up or liquidation of Contractor.

9.2.2. City's Remedies. On and after any Event of Default, City shall have the right to exercise its legal and equitable remedies, including, without limitation, the right to terminate this Agreement or to seek specific performance of all or any part of this Agreement, and the recovery of damages through exercising its rights pursuant to the Performance Bond and

Guaranty. In addition, where applicable, City shall have the right (but no obligation) to cure (or cause to be cured) on behalf of Contractor any Event of Default; Contractor and its surety (sureties) and Guarantor(s) shall pay to City on demand all costs and expenses incurred by City in effecting such cure, with interest thereon from the date of incurrence at the maximum rate then permitted by law. City shall have the right to offset from any amounts due to Contractor under this Agreement or any other agreement between City and Contractor: (i) all damages, losses, costs or expenses incurred by City as a result of an Event of Default; and (ii) any liquidated damages levied upon Contractor pursuant to the terms of this Agreement; and (iii), any damages imposed by any ordinance or statute that is incorporated into this Agreement by reference, or into any other agreement with the City. This Section 9.2.2 (Remedies) shall survive termination of this Agreement. The SFMTA may withhold all or any portion of further payments to Contractor until such time that the SFMTA can determine the remaining amount owed to Contractor. The City's termination of this Agreement for Contractor's default shall not void, terminate or otherwise compromise the City's perpetual rights under the Software License.

9.2.3. Remedies Are Not Exclusive. Except as expressly stated in this Agreement, all remedies provided for in this Agreement may be exercised individually or in combination with any other remedy available hereunder or under applicable laws, rules and regulations. The exercise of any remedy shall not preclude or in any way be deemed to waive any other remedy. Nothing in this Agreement shall constitute a waiver or limitation of any rights that City may have under applicable law.

9.2.4. Adverse Court Decision. If a court determines that a termination for default is unlawful, the termination shall be deemed a termination for convenience.

9.2.5. Notice of Default. Any notice of default must be sent to the address set forth in Section 12.1 (Notices to the Parties).

9.3. No Waiver of Rights. The omission by either Party at any time to enforce any default or right reserved to it, or to require performance of any of the terms, covenants, or provisions hereof by the other Party at the time designated, shall not constitute a waiver of any such default or right to which the Party is entitled, nor shall it in any way affect the right of the Party to enforce such provisions thereafter.

9.4. Rights and Duties upon Termination or Expiration

9.4.1. Survival. This Section 9.4.1 and the following Sections of this Agreement listed below, shall survive termination or expiration of this Agreement:

- 4.5.2 City's Payment Obligation Limited to Satisfactory Performance of Services
- 4.5.10 Grant-Funded Contracts
- 4.6 Audit and Inspection of Records
- 4.7 Submitting False Claims
- 5.11 Independent Contractor; Payment of Employment Taxes and Other Expenses
- Article 6 Insurance and Indemnity
- Article 7 Liability of the Parties
- Article 8 Payment of Taxes
- 9.1.6 Payment Obligation

9.3	No Waiver of Rights
10.1	Ownership of Results
10.2	Works for Hire
10.3	Software License
12.8	Dispute Resolution Procedure
12.9	Agreement Made in California Venue
12.10	Construction and Interpretation of Contract Documents
12.11	Entire Agreement
12.12	Compliance with Laws
12.13	Severability
Article 13	Data and Security

9.4.2. Contractor Duties. Subject to the survival of the Sections identified in Section 9.4.1 (Survival) above, if this Agreement is terminated prior to expiration of the Contract Term specified in Article 3 (Contract Term), this Agreement shall be of no further force or effect. Contractor shall transfer title to City, and deliver in the manner, at the times, and to the extent, if any, directed by City, any Work in progress, completed Work, supplies, equipment, Materials and other items procured, acquired or produced as a part of or in connection with the performance of this Agreement, and any completed or partially completed Work which, if this Agreement had been completed, Contractor would have been required to provide to City.

ARTICLE 10 RIGHTS IN DELIVERABLES; SOFTWARE LICENSE

10.1. Ownership of Results. Any interest of Contractor or its Subcontractors in the Deliverables, including any drawings, plans, specifications, blueprints, studies, reports, memoranda, computation sheets, computer files and media or other documents prepared by Contractor or its Subcontractors for the purposes of this Agreement, shall become the property of and will be transmitted to City. However, unless expressly prohibited elsewhere in this Agreement, Contractor may retain and use copies for reference and as documentation of its experience and capabilities.

10.2. Works for Hire. If, in connection with Services, Contractor or its subcontractors creates Deliverables including, without limitation, artwork, copy, posters, billboards, photographs, videotapes, audiotapes, systems designs, custom software, reports, diagrams, surveys, blueprints, source codes, or any other original works of authorship, whether in digital or any other format, such works of authorship shall be works for hire as defined under Title 17 of the United States Code, and all copyrights in such works shall be the property of the City. If any Deliverables created by Contractor or its subcontractor(s) under this Agreement are ever determined not to be works for hire under U.S. law, Contractor hereby assigns all Contractor's copyrights to such Deliverables to the City, agrees to provide any material and execute any documents necessary to effectuate such assignment, and agrees to include a clause in every subcontract imposing the same duties upon subcontractor(s). With City's prior written approval,

Contractor and its subcontractor(s) may retain and use copies of such works for reference and as documentation of their respective experience and capabilities.

10.3. Software License.

10.3.1. As more specifically provided in the Software License in Appendix K (Software License Agreement) to this Agreement, Contractor grants to the City a non-exclusive, non-transferable, perpetual license to use the Software purchased under this Agreement, including all Software procured by Contractor to City from third parties, from the date of full payment for the Software. The license for the Software shall be limited to the SFMTA's use for its operation and maintenance of the CBTC System supplied by Contractor. The City has no right to grant sublicenses. Contractor warrants that it has the title to and/or authority to grant said license(s) and sublicenses(s) to the City. The City receives no title or ownership rights to Software purchased under this Agreement, and all such rights shall remain with Contractor or its suppliers.

10.3.2. The City agrees that the Software provided to it by Contractor under this Agreement, and any Enhancements, Updates, Upgrades, renewals, extensions, or expansions of the Software, shall, as between the Parties, be treated as proprietary and a trade secret of Contractor or its suppliers and be subject to the provisions of Section 13.1 (Nondisclosure of Proprietary, Private, or Confidential Information).

10.3.3. The obligations of the City under this Section shall survive the termination or expiration of this Agreement.

10.3.4. The Software provided under this Agreement may contain freely available Software obtained by Contractor from a third-party source. Any license fee that Contractor has paid for the inclusion of any such third-party Software in the System is included in the compensation paid by City to Contractor under this Agreement, and no additional license fee shall be charged to City for use of that third-party Software. Any such third-party Software is also included in Contractor's warranties and support Services under this Agreement. Contractor agrees to place all such third-party warranties and service agreements in the City's name as the Software and system owner or authorized end-user. City and Contractor acknowledge and agree that as part of the Warranty and/or Support services provided by Contractor in this Agreement, Contractor will manage all third-party warranties on City's behalf and the City shall resolve all issues with the third-party Software directly with Contractor.

ARTICLE 11 ADDITIONAL REQUIREMENTS INCORPORATED BY REFERENCE

11.1. Laws Incorporated by Reference. The full text of the laws listed in this Article 11 (Additional Requirements Incorporated by Reference), including enforcement and penalty provisions, are incorporated by reference into this Agreement. The full text of the San Francisco Municipal Code provisions incorporated by reference in this Article and elsewhere in the Agreement (Mandatory City Requirements) are available at http://www.amlegal.com/codes/client/san-francisco_ca.

11.2. Conflict of Interest. By executing this Agreement, Contractor certifies that it does not know of any fact which constitutes a violation of Section 15.103 of the City's Charter; Article III, Chapter 2 of City's Campaign and Governmental Conduct Code; Title 9, Chapter 7 of the California Government Code (Section 87100 et seq.), or Title 1, Division 4, Chapter 1, Article 4 of the California Government Code (Section 1090 et seq.), and further agrees promptly to notify the City if it becomes aware of any such fact during the Contract Term.

11.3. Prohibition on Use of Public Funds for Political Activity. In performing the Services, Contractor shall comply with San Francisco Administrative Code Chapter 12G, which prohibits funds appropriated by the City for this Agreement from being expended to participate

in, support, or attempt to influence any political campaign for a candidate or for a ballot measure. Contractor is subject to the enforcement and penalty provisions in Chapter 12G.

11.4. Consideration of Salary History. Contractor shall comply with San Francisco Administrative Code Chapter 12K, the Consideration of Salary History Ordinance or “Pay Parity Act.” Contractor is prohibited from considering current or past salary of an applicant in determining whether to hire the applicant or what salary to offer the applicant to the extent that such applicant is applying for employment to be performed on this Agreement or in furtherance of this Agreement, and whose application, in whole or part, will be solicited, received, processed or considered, whether or not through an interview, in the City or on City property. The ordinance also prohibits employers from (a) asking such applicants about their current or past salary or (b) disclosing a current or former employee’s salary history without that employee’s authorization unless the salary history is publicly available. Contractor is subject to the enforcement and penalty provisions in Chapter 12K. Information about and the text of Chapter 12K is available on the web at <https://sfgov.org/olse/consideration-salary-history>. Contractor is required to comply with all of the applicable provisions of 12K, irrespective of the listing of obligations in this Section.

11.5. Nondiscrimination Requirements

11.5.1. Nondiscrimination in Contracts. Contractor shall comply with the provisions of Chapters 12B and 12C of the San Francisco Administrative Code. Contractor shall incorporate by reference in all subcontracts the provisions of Sections 12B.2(a), 12B.2(c)-(k), and 12C.3 of the San Francisco Administrative Code and shall require all Subcontractors to comply with such provisions. Contractor is subject to the enforcement and penalty provisions in Chapters 12B and 12C.

11.5.2. Nondiscrimination in the Provision of Employee Benefits. Contractor shall comply with San Francisco Administrative Code 12B.2. Contractor shall not as of the date of this Agreement, and will not during the Contract Term, in any of its operations in San Francisco, on real property owned by San Francisco, or where work is being performed for the City elsewhere in the United States, discriminate in the provision of employee benefits between employees with domestic partners and employees with spouses and/or between the domestic partners and spouses of such employees, subject to the conditions set forth in San Francisco Administrative Code Section 12B.2.

11.6. Small Business Enterprise Program

11.6.1. General. The SFMTA is committed to a Small Business Enterprise Program (SBE Program) for the participation of SBEs in contracting opportunities. In addition, Contractor must comply with all applicable federal regulations regarding Small Business Enterprise (SBE) participation, as set out in Title 49, Part 26 of the Code of Federal Regulations, with respect to SBEs performing Work under this Agreement. More information on federal SBE requirements can be found on the internet at: <http://www.fta.dot.gov/civilrights/12326.html>.

11.6.2. Compliance with SBE Program. Contractor shall comply with the SBE provisions contained in Appendix H attached to this Agreement and incorporated by reference as though fully set forth, including, but not limited to, achieving and maintaining the SBE goal set for the total dollar amount Awarded for the services to be performed under this Agreement. Failure of Contractor to comply with any of these requirements shall be deemed a material breach of this Agreement.

11.6.3. Nondiscrimination in Hiring. Pursuant to City and SFMTA policy, Contractor is encouraged to recruit actively minorities and women for its workforce and take other steps within the law, such as on-the-job training and education, to ensure non-discrimination in Contractor’s employment practices.

11.7. Minimum Compensation Ordinance. The City urges Contractor to pay employees performing the Services no less than the minimum compensation required by San Francisco Administrative Code Chapter 12P, including a minimum hourly gross compensation, compensated time off, and uncompensated time off. Information about and the text of the Chapter 12P is available on the web at <http://sfgov.org/olse/mco>.

11.8. First Source Hiring Program. The City urges Contractor to comply with the provisions of the First Source Hiring Program, Chapter 83 of the San Francisco Administrative Code.

11.9. Alcohol and Drug-Free Workplace. City reserves the right to deny access to or to require Contractor to remove from City facilities personnel of any Contractor or Subcontractor who City has reasonable grounds to believe has engaged in alcohol abuse or illegal drug activity which in any way impairs City's ability to maintain safe work facilities or to protect the health and well-being of City employees and the general public. City shall have the right of final approval for the entry or re-entry of any such person previously denied access to, or removed from, City facilities. Illegal drug activity means possessing, furnishing, selling, offering, purchasing, using or being under the influence of illegal drugs or other controlled substances for which the individual lacks a valid prescription. Alcohol abuse means possessing, furnishing, selling, offering, or using alcoholic beverages, or being under the influence of alcohol.

Contractor agrees in the performance of this Agreement to maintain a drug-free workplace by notifying employees that unlawful drug use is prohibited and specifying what actions will be taken against employees for violations; establishing an on-going drug-free awareness program that includes employee notification and, as appropriate, rehabilitation. Contractor can comply with this requirement by implementing a drug-free workplace program that complies with the Federal Drug-Free Workplace Act of 1988 (41 U.S.C. § 701).

11.10. Limitations on Contributions. By executing this Agreement, Contractor acknowledges its obligations under Section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who contracts with, or is seeking a contract with, any department of the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, for a grant, loan or loan guarantee, or for a development agreement, from making any campaign contribution to (a) a City elected official if the contract must be approved by that official, a board on which that official serves, or the board of a state agency on which an appointee of that official serves, (b) a candidate for that City elective office, or (c) a committee controlled by such elected official or a candidate for that office, at any time from the submission of a Proposal for the contract until the later of either the termination of negotiations for such contract or twelve months after the date the City approves the contract. The prohibition on contributions applies to each prospective party to the contract; each member of Contractor's board of directors; Contractor's chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 10% in Contractor; any Subcontractor listed in the bid or contract; and any committee that is sponsored or controlled by Contractor. Contractor certifies that it has informed each such person of the limitation on contributions imposed by Section 1.126 by the time it submitted a Proposal for the contract and has provided the names of the persons required to be informed to the City department with whom it is contracting.

11.11. Consideration of Criminal History in Hiring and Employment Decisions

11.11.1. City urges Contractor to comply with the provisions of Chapter 12T (City Contractor/Subcontractor Consideration of Criminal History in Hiring and Employment Decisions) of the San Francisco Administrative Code (Chapter 12T), including the remedies provided, and implementing regulations, as may be amended from time to time. The provisions of Chapter 12T are incorporated by reference and made a part of this Agreement as though fully set forth herein. The text of the Chapter 12T is available on the web at

<http://sfgov.org/olse/fco>. Contractor is required to comply with all of the applicable provisions of 12T, irrespective of the listing of obligations in this Section. Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 12T.

The requirements of Chapter 12T shall only apply to a Contractor's or Subcontractor's operations to the extent those operations are in furtherance of the performance of this Agreement, shall apply only to applicants and employees who would be or are performing Work in furtherance of this Agreement, and shall apply when the physical location of the employment or prospective employment of an individual is wholly or substantially within the City of San Francisco. Chapter 12T shall not apply when the application in a particular context would conflict with federal or state law or with a requirement of a government agency implementing federal or state law.

11.12. Food Service Waste Reduction Requirements. City urges Contractor to comply with the Food Service Waste Reduction Ordinance, as set forth in San Francisco Environment Code Chapter 16, including but not limited to the remedies for noncompliance provided therein.

11.13. Tropical Hardwood and Virgin Redwood Ban. The City urges Contractor not to import, purchase, obtain, or use for any purpose, any tropical hardwood, tropical hardwood wood product, virgin redwood or virgin redwood wood product, in accordance with San Francisco Environment Code Section 804(b).

ARTICLE 12 GENERAL REQUIREMENTS

12.1. Notices to the Parties. Unless otherwise indicated in this Agreement, all written communications sent by the Parties may be sent by U.S. mail or e-mail, and shall be addressed as follows:

To City: San Francisco Municipal Transportation Agency
1455 Market Street, 7th floor
San Francisco, CA 94103
Attn: Dan Howard
dan.howard@sfmta.com

To Contractor:

All notices between the parties required by this Agreement or by law, and any communications concerning compliance with a material requirement of the Agreement shall also be sent to:

San Francisco Municipal Transportation Agency
Muni Metro East Facility
601 25th Street,
San Francisco, CA 94107
Attn: Janet Gallegos
janet.gallegos@sfmta.com

and Director of Transit
San Francisco Municipal Transportation Agency
1 South Van Ness, 7th floor
San Francisco, CA 94103

To Contractor: [insert name of Contractor, representative's name, mailing address, and e-mail address]

Any notice of default must be sent by US Mail first class with email confirmation, or by overnight delivery service or courier, with a signature obtained at delivery. Either Party may change the address to which notice is to be sent by giving written notice thereof to the other Party. If email notification is used, the sender must specify a receipt notice.

12.2. Compliance with Americans with Disabilities Act. Contractor shall provide the Services in a manner that complies with the Americans with Disabilities Act (ADA), including but not limited to Title II's program access requirements, and all other applicable federal, state and local disability rights legislation.

12.3. Incorporation of Recitals. The Recitals stated at the beginning of this documents are incorporated into and made part of this Agreement.

12.4. Sunshine Ordinance. Contractor acknowledges that this Agreement and all records related to its formation, Contractor's performance of Services, and City's payment are subject to the California Public Records Act, (California Government Code §6250 et. Seq.), and the San Francisco Sunshine Ordinance, (San Francisco Administrative Code Chapter 67). Such records are subject to public inspection and copying unless exempt from disclosure under federal, state or local law.

12.5. Contract Modifications and Change Orders.

12.5.1. Approval Requirements. This Agreement may not be modified, nor may compliance with any of its terms be waived, (except as noted in Section 12.1 (Notices to the Parties) regarding change in personnel or place) unless such modification be effected by written instrument executed and approved as required by this Agreement, City law, and the policies of the SFMTA Board of Directors. All Change Orders are subject to the approval of the SFMTA's Change Board and must be signed by the SFMTA's Transit Director.

12.5.2. City Revisions to Program Budgets; Change Orders. As described in Appendix E (Clarifications and Changes in the Work), the SFMTA shall have the authority, without the execution of a formal Contract Modification, to issue Change Orders to modify the Work provided that such Change Orders do not require or involve an increase in the Contract Amount or extension of the Contract Term,. Contractor shall not proceed with any Work contemplated in any Change Order until it receives written notification to commence such Work from SFMTA. All Change Orders will be incorporated to the Agreement, after written execution by the Parties.

12.5.3. Procedures. Contract Modifications and Change Orders shall be processed as provided in Appendix E (Clarifications and Changes in the Work).

12.5.4. SFMTA CBTC Change Control Committee. All Change Orders are subject to approval by the SFMTA CBTC Change Control Committee as a final condition of approval . (See Appendix A, Section 15.)

12.5.5. CCO Approval. Contractor shall cooperate with the SFMTA to submit to the CCO any amendment, modification, supplement or change order that would result in a cumulative increase of the original Contract Amount by more than 20 percent (CMD Contract Modification Form).

12.6. Authority of Project Manager. The SFMTA Project Manager shall administratively determine issues and disputes that may arise as to the quality and conformance of the Work to Contract requirements, Contractor's compliance with Contract requirements, rate of progress of the Work, and compensation. Contractor shall submit a contract claim, and the Project Manager will respond to the claim with a written decision. Contractor may appeal the

Project Manager's decision to the Director of Transit, following the claims requirements set out in Section 12.8 (Contract Claim Requirements), below.

12.7. Contract Claim Requirements. Contractor shall not be entitled to the payment of any additional compensation or change in Contract Time for any action or failure to act by the SFMTA, including failure or refusal to issue a Change Order or approve a Contract Modification, or for the happening of any event, thing, occurrence, or other cause, unless Contractor shall have given the SFMTA timely written notice of the claim. The written notice of claim shall set forth the reasons that Contractor believes additional compensation or an extension of Contract Time is due, cite the relevant provisions of the Contract on which Contractor bases its claim, and the types and amounts of costs Contractor claims. The notice must be submitted to the SFMTA within 30 Days after the occurrence of the event or other cause giving rise to the claim. Contractor shall then within 60 Days (which SFMTA may extend upon Contractor request) following its submission of the notice of claim, Contractor shall submit to the SFMTA a written contract claim stating the relevant facts and basis for its claim, citing to the relevant provisions of the Contract, and providing supporting documentation and other evidence to support its claim. Contractor's failure to submit a notice of claim or written claim as provided in this Section shall constitute a waiver of the claim and shall render void any subsequent claim under Government Code section 900, et seq.

12.8. Dispute Resolution Procedures

12.8.1. Negotiation; Administrative Determination. The Parties will attempt in good faith to negotiate resolution of any dispute relating to this Agreement. Disputes that are not resolved by negotiation shall be decided in writing by the SFMTA Project Manager. See Section 12.6 (Authority of Contract Manager). The Project Manager's decision shall be administratively final, unless within ten Days from the date of such decision, Contractor submits a written appeal of the decision with supporting documentation to the Director of Transit or his/her designee. The decision of the Director of Transit shall be administratively final.

12.8.2. No Slowing or Suspension of Work. The status of any dispute notwithstanding, Contractor shall not suspend or slow its performance of the Work pending resolution of any dispute, and Contractor shall proceed diligently with the performance of its obligations under this Agreement in accordance with the Agreement and the written directions of the City.

12.8.3. Alternative Dispute Resolution. If the Parties agree in writing, a dispute may be resolved by an agreed alternative dispute resolution process

12.8.4. Prevailing Party Does Not Recover Fees or Costs. Neither Party shall recover from the other Party its administrative costs, attorneys' fees or other costs incurred in the course of negotiating, mediating or litigating any dispute arising from or related to this Agreement; each Party shall bear its own fees and costs, and any rule or practice awarding a prevailing party its fees and costs shall not apply to this Agreement,

12.8.5. Government Code Claim Requirement. No suit for money or damages may be brought against the City until Contractor has exhausted its contract remedies, provided in Sections 12.6 (Authority of Project Manager) and 12.7 (Contract Claim Requirements), and the Contractor has exhausted in administrative remedies by submitting a written claim to the City in accordance with the provisions of San Francisco Administrative Code Chapter 10 and California Government Code Section 900, et seq. Nothing set forth in this Agreement shall operate to toll, waive or excuse Contractor's compliance with the California Government Code Claim requirements, as set forth in San Francisco Administrative Code Chapter 10 and California Government Code Section 900, et seq.

12.9. Agreement Made in California; Venue. This Agreement was advertised, negotiated and shall be performed in San Francisco, California. The City and County of San

Francisco is a municipal corporation established under the constitution and laws of the State of California, which govern the formation, interpretation and performance of this Agreement .
Venue for all litigation concerning this Agreement shall be in San Francisco, California.

12.10. Construction and Interpretation of Contract Documents.

12.10.1. Cooperative Drafting. This Agreement has been drafted through a cooperative effort of City and Contractor, and both Parties have had an opportunity to have the Agreement reviewed and revised by legal counsel. No Party shall be considered the drafter of this Agreement, and no presumption or rule that an ambiguity shall be construed against the Party drafting of this Agreement or any part of it shall apply to the interpretation or enforcement of this Agreement or any part of it.

12.10.2. Contractor's Scope of Work. In case of any ambiguity in the Agreement, the Agreement shall be interpreted and constructed so that Contractor is the party responsible and obligated to perform all work and included tasks, provide all services, and furnish all Equipment, Software, Deliverables, Submittals, tools and Materials necessary to design, implement, test and certify the CBTC System for Revenue Service, unless and only to the extent that any provision of the Agreement expressly states that the SFMTA or another entity is obligated to perform the task, provide the service, or furnish the Materials at issue.

12.10.3. Captions and Titles Are for Reference Only. All paragraph captions are for reference only and shall not be considered in construing this Agreement.

12.11. Entire Agreement. This Contract sets forth the entire agreement between the Parties. The Contract Documents (excluding the Reference Materials) constitute an integrated agreement, which supersedes all other oral or written understandings and provisions. All Included Appendices to this Agreement are incorporated by reference as though fully set forth. This Agreement may be modified only as provided in Section 12.5 (Modification of this Agreement).

12.12. Compliance with Laws. Contractor shall keep itself fully informed of the City's Charter, codes, ordinances and duly adopted rules and regulations of the City and of all state, and federal laws (collectively "Codes") that in any manner affect the Project and the performance of this Agreement, and Contractor shall at all times comply with such Codes as they may be amended from time to time.

12.13. Severability. Should the application of any provision of this Agreement to any particular facts or circumstances be found by a court of competent jurisdiction to be invalid or unenforceable, then (a) the validity of other provisions of this Agreement shall not be affected or impaired thereby, and (b) such provision shall be enforced to the maximum extent possible so as to effect the intent of the Parties and shall be reformed without further action by the Parties to the extent necessary to make such provision valid and enforceable.

12.14. Order of Precedence. Contractor agrees to perform the Services in accordance with the terms and conditions of this Agreement and the Contract Specifications. In case of any ambiguity or conflict in Contract requirements, the Contract shall be interpreted using the following order of Precedence:

1. Contract Modifications in inverse chronological order
2. Change Orders approved by the SFMTA in inverse chronological order
3. Contract Specifications (Appendix A to Agreement) (to be replaced by negotiated Technical Specifications)
4. General Provisions
5. Included Appendices (other than Appendix A)

12.15. Time is of the Essence. Time is of the essence in Contractor's performance of the Services.

12.16. Federal Requirements. Contractor shall comply with all applicable federal contracting requirements, including but not limited to those set out in Appendix G to this Agreement, which are incorporated by reference as if fully set out here. If there is any conflict between any federal contracting requirement and any provision of this Agreement, the federal requirement shall prevail. The SFMTA has not adopted the contract requirements of the Federal Acquisition Regulations (FAR). As a department of the City and County of San Francisco, exercising its home rule authority granted by the California constitution, the SFMTA shall not be bound by any provision of the FAR.

12.17. Large Vehicle Driver Safety Training Requirements

12.17.1. Contractor agrees that before any of its employees and Subcontractors drive large vehicles within the City and County of San Francisco, those employees and Subcontractors shall successfully complete either (a) the SFMTA's Large Vehicle Urban Driving Safety training program or (b) a training program that meets the SFMTA's approved standards for large vehicle urban driving safety. The SFMTA's approved standards for large vehicle urban driving safety is available for download at www.SFMTA.com/largevehicletrainingstandards. This requirement does not apply to drivers providing delivery services who are not employees or Subcontractors of Contractor. For purposes of this section, "large vehicle" means any single vehicle or combination of vehicle and trailer with an unladen weight of 10,000 pounds or more, or a van designed to carry 10 or more people.

12.17.2. By entering into this Agreement, Contractor agrees that in the event Contractor fails to comply with the Large Vehicle Driver Safety Training Requirements, the City will suffer actual damages that will be impractical or extremely difficult to determine; further, Contractor agrees that the sum of up to One Thousand Dollars (\$1,000) per employee or Subcontractor who is permitted to drive a large vehicle in violation of these requirements is not a penalty, but is a reasonable estimate of the loss that City will incur based on Contractor's failure to comply with this requirement, established in light of the circumstances existing at the time this Contract was Awarded. City may deduct a sum representing the liquidated damages from any money due to Contractor. Such deductions shall not be considered a penalty, but rather agreed monetary damages sustained by City because of Contractor's failure to comply.

12.18. MacBride Principles – Northern Ireland. The provisions of San Francisco Administrative Code §12F are incorporated herein by this reference and made part of this Agreement. By signing this Agreement, Contractor confirms that Contractor has read and understood that the City urges companies doing business in Northern Ireland to resolve employment inequities and to abide by the MacBride Principles and urges San Francisco companies to do business with corporations that abide by the MacBride Principles.

ARTICLE 13 DATA AND SECURITY

13.1. Nondisclosure of Private, Proprietary, or Confidential Information

13.1.1. Protection of Private Information. If this Agreement requires City to disclose "Private Information" to Contractor within the meaning of San Francisco Administrative Code Chapter 12M, Contractor and Subcontractor shall use such information only in accordance with the restrictions stated in Chapter 12M and in this Agreement and only as necessary in performing the Services. Contractor is subject to the enforcement and penalty provisions in Chapter 12M.

13.1.2. Confidential Information. Contractor understands and agrees that the performance of the Work under this Agreement will involve access to Confidential Information. Contractor and any Subcontractors or agents shall use Confidential Information only in accordance with all applicable local, state and federal laws restricting the access, use and disclosure of Confidential Information, and only as necessary in the performance of this Agreement. Contractor shall exercise the same standard of care to protect such information as a reasonably prudent contractor would use to protect its own proprietary or Confidential Information. Contractor's failure to comply with any requirements of local, State or federal laws restricting access, use and disclosure of Confidential Information shall be deemed a material breach of this Agreement, for which City may terminate the Agreement. In addition to termination or any other remedies set forth in this Agreement or available in equity or law, the City may bring a false claim action against Contractor pursuant to Chapters 6 or 21 of the Administrative Code or debar Contractor. Contractor agrees to include all of the terms and conditions regarding Confidential Information contained in this Agreement in all subcontractor or agency contracts providing services under this Agreement.

13.1.3. Obligation of Confidentiality. Subject to San Francisco Administrative Code Section 67.24(e), any State open records or freedom of information statutes, and any other applicable laws, Parties agree to hold all Confidential Information in strict confidence and not to copy, reproduce, sell, transfer, or otherwise dispose of, give or disclose such Confidential Information to third parties other than employees, agents, or authorized subcontractors of a Party who have a need to know in connection with this Agreement, or to use such Confidential Information for any purposes whatsoever other than the performance of this Agreement. The Parties agree to advise and require its respective employees, agents, and subcontractors of their obligations to keep all Confidential Information confidential.

13.1.4. Nondisclosure.

13.1.4.1 Contractor agrees and acknowledges that it shall have no proprietary interest in any proprietary or Confidential Information and will not disclose, communicate or publish the nature or content of such information to any person or entity, nor use, except in connection with the performance of its obligations under this Agreement or as otherwise authorized in writing by the City, any of the Confidential Information it produces, receives, acquires or obtains from the disclosing Party.

13.1.4.2 Contractor shall take all necessary steps to ensure that the Confidential Information is securely maintained. Contractor's obligations set forth herein shall survive the termination or expiration of this Agreement.

13.1.4.3 In the event Contractor becomes legally compelled to disclose any Confidential Information, it shall provide the SFMTA with prompt notice thereof and shall not divulge any information until the SFMTA has had the opportunity to seek a protective order or other appropriate remedy to curtail such disclosure. If such actions by the SFMTA are unsuccessful, or the SFMTA otherwise waives its right to seek such remedies, Contractor shall disclose only that portion of the Confidential Information that it is legally required to disclose.

13.1.5. Cooperation to Prevent Disclosure of Confidential Information. Contractor shall use its best efforts to assist the SFMTA in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the foregoing, Contractor shall advise the City immediately in the event Contractor learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Agreement and Contractor will cooperate with the SFMTA in seeking injunctive or other equitable relief against any such person.

13.1.6. Remedies for Breach of Obligation of Confidentiality. Contractor acknowledges that breach of its obligation of confidentiality may give rise to

irreparable injury to the SFMTA, which damage may be inadequately compensable in the form of monetary damages. Accordingly, the SFMTA may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies that may be available, to include, at the sole election of the SFMTA, the immediate termination, without liability to the SFMTA or City, of this Agreement.

13.1.7. Surrender of Confidential Information upon Termination.

Upon termination of this Agreement, including but not limited to expiration of the term, early termination or termination for convenience, Contractor shall, within five Days from the date of termination, return to the SFMTA any and all Confidential Information received from the SFMTA, or created or received by Contractor on behalf of the SFMTA, which are in Contractor's possession, custody, or control.

13.1.8. Sensitive Security Information (SSI)

13.1.8.1 Sensitive Security Information (SSI) Documents

13.1.8.1.1 Certain documents issued to Contractor and created by the Contractor as part of the Work under the Contract are Sensitive Security Information ("SSI Documents") as that term is defined in Section 2.84.

13.1.8.1.2 The SSI Documents are identified by the markings printed on individual documents, drawings and exterior covers of documents and drawing sets that indicate that they are SSI Documents.

13.1.8.1.3 Contractor shall recognize that access to any part of the SSI Documents by unauthorized persons or organizations would pose significant security risk to the Project and public safety.

13.1.8.2 Use of the SSI Documents

13.1.8.2.1 The Contractor is required to sign and agree to the terms and conditions of a Sensitive Security Information Confidentiality and Nondisclosure Agreement (NDA) in order to be authorized to access and handle any SSI required to perform the Work under Contract for this Project. For any questions or instructions regarding the SSI Documents or the NDA, please contact the SFMTA using the contract information in Section 12.1.

13.1.8.2.2 Contractor shall use the SSI Documents only for the purposes of performing the Work under the Contract, and for no other purpose. Any documents prepared by the Contractor during contract performance containing information from an SSI Document shall be marked as SSI in the manner required by applicable federal law and the terms of the NDA.

13.1.8.2.3 Contractor shall guard the SSI Documents safe and secure at all times from disclosure to unauthorized personnel, and shall only allow access to the SSI Documents to persons with a "need to know" for performing the Work. When the SSI Documents are not being used to perform the Work, the Contractor shall limit access to the SSI Documents to a locked, secure area so that the SSI Documents are not physically or visually accessible to persons who are not directly involved in performing the Work. When unattended, physical copies or media containing the SSI Documents must be secured in a locked container, office, or other restricted access area with access to the keys or combination limited to those with a need to know.

13.1.8.2.4 Contractor shall not copy, publish, circulate or use any of the SSI Documents for any purpose other than performing the Work under this Contract, without first obtaining the SFMTA's written approval to do so.

13.1.8.3 Disposal of the SSI Documents. At the termination of the Contract, Contractor shall return all other sets of SSI Documents or destroy them.

13.1.8.3.1 SSI Documents shall be returned to the SFMTA using the contact information in Section 12.1.

13.1.8.3.2 If not returned to the SFMTA, the SSI Documents must be destroyed in a manner that ensures recovery of the information contained therein would be difficult, if not impossible. Any means approved for the destruction of national security classified material such as machine shredding, may be used to destroy the SSI Documents. If no such means is available, the SSI Documents may be destroyed by cutting or tearing them into small pieces and assimilating it with other waste material. Compact discs or other physical electronic media containing the SSI Documents shall be broken to pieces. Electronic files containing the SSI Documents or any portion of them shall be deleted in a manner that prevents recovery of the deleted documents.

13.1.8.3.3 When the Work is completed, or upon earlier termination of the Contract, Contractor shall certify to the SFMTA on a form to be provided by the SFMTA that all SSI Documents have been returned or destroyed as required herein. Submit signed certification to the SFMTA using the contact information in Section 12.1.

13.1.8.4 Liability for Failure to Secure or Misuse of the SSI Documents. Contractor shall be fully liable for any and all harm and damages that may arise from unauthorized persons or entities gaining access to the SSI Documents due to or arising from Contractor's failure to adhere strictly to the requirements of this Section. In addition to civil liability, Contractor is cautioned that violation of applicable laws and regulations concerning protection and use of Sensitive Security Information may subject Contractor to federal penalties.

13.1.8.5 Subcontractors. Contractor shall include the provisions of this Section in any agreement with Subcontractor or Supplier that will require access to the SSI Documents, and Contractor shall be responsible for its Subcontractors' and Suppliers' adherence to the requirements of this Section.

13.2. Management of City Data

13.2.1. Access to City Data. City shall at all times have access to and control of City Data, and shall be able without Contractor's assistance to retrieve it in a readable format, in electronic form and/or print, at any time, at no additional cost.

13.2.2. Ownership of City Data. The Parties agree that as between them, all rights, including all intellectual property rights, in and to the City Data and any derivative works of the City Data is the exclusive property of the City.

13.2.3. Use of City Data.

13.2.3.1.1 Contractor agrees to hold City Data received from, or collected on behalf of the City, in strictest confidence. Contractor shall not use or disclose City

Data except as permitted or required by the Agreement or as otherwise authorized in writing by the City. Any Work using, or sharing or storage of, City Data outside the United States is subject to prior written authorization by the City. Access to City Data must be strictly controlled and limited to Contractor's staff assigned to this Project on a need-to-know basis only.

13.2.3.1.2 Contractor is provided a limited non-exclusive license to use the City Data solely for performing its obligations under the Agreement and not for Contractor's own purposes or later use. Nothing herein shall be construed to confer any license or right to the City Data by implication, estoppel or otherwise, under copyright or other intellectual property rights, to any third-party.

13.2.4. Unauthorized Use. Unauthorized use of City Data by Contractor, Subcontractors, or other third parties is prohibited. For purpose of this requirement, the phrase "unauthorized use" means the data mining or processing of data, stored or transmitted by the service, for commercial purposes, advertising or advertising-related purposes, or for any purpose other than security or service delivery analysis that is not explicitly authorized.

13.3. Litigation Holds. Contractor shall retain and preserve City Data in accordance with the SFMTA's instruction and requests, including, without limitation, any retention schedules and/or litigation hold orders provided by the SFMTA to Contractor, independent of where the City Data is stored.

13.4. Notification of Legal Requests. Contractor shall immediately notify the SFMTA upon receipt of any subpoenas, service of process, litigation holds, discovery, requests, and other legal requests (Legal Requests) related to City's Data under this Agreement, or which in any way might reasonably require access to City's Data, and in no event later than 24 hours after it receives the request. Contractor shall not respond to Legal Requests related to City without first notifying City other than to notify the requestor that the information sought is potentially covered under a non-disclosure agreement. Contractor shall retain and preserve City Data in accordance with the City's instruction and requests, including, without limitation, any retention schedules and/or litigation hold orders provided by the City to Contractor, independent of where the City Data is stored.

13.5. Disposition of City Data upon Termination. Upon request of City or termination or expiration of this Agreement, and pursuant to any document retention period required by this Agreement, Contractor shall promptly, but in no event later than 30 Days, return all City Data given to or collected by Contractor on City's behalf, which includes all original media. Once Contractor has received written confirmation from City that the City Data has been successfully transferred to City, Contractor shall within 10 Days clear or purge all City Data from its servers, any hosted environment Contractor has used in performance of this Agreement, including its subcontractors' environment(s), work stations that were used to process the Data or for production of the Data, and any other work files stored by Contractor in whatever medium. Contractor shall provide City with written certification that such purge occurred within five Days of the purge. Secure disposal shall be accomplished by "clearing," "purging" or "physical destruction," in accordance with National Institute of Standards and Technology (NIST) Special Publication 800-88, or the most current industry standard.

ARTICLE 14 Included Appendices

The documents listed below are attached to this Agreement as Included Appendices and are incorporated into this Agreement by reference.

Appendix A – Contract Specifications

Appendix B – Schedule of Prices and Calculation of Charges

Appendix C – Payment Milestones

Appendix D – Project Schedule

Appendix E – Clarifications and Changes in the Work

Appendix F – Performance Bonds

Appendix G – Federal Contract Requirements

Appendix H – SFMTA SBE Requirements

Appendix I – Performance and Service Level Requirements

Appendix J – SFMTA Policies and Procedures

- (1) SFMTA Track and Tunnel Access Procedures
- (2) Barcoding Procedures
- (3) Technology Change Control Policy and Procedures
- (4) System Safety Rail Change Control Board Policy
- (5) SFMTA Rail Rule Book

Appendix K – Software License Agreement

Signatures on Following Page

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day first mentioned above.

CITY	CONTRACTOR
<p>San Francisco Municipal Transportation Agency</p> <hr/> <p>Jeffrey P. Tumlin Director of Transportation</p> <p>Authorized By: Municipal Transportation Agency Board of Directors</p> <p>Resolution No: _____ Adopted: _____ Attest: _____ Secretary to the Board</p> <p>Board of Supervisors</p> <p>Resolution No: _____ Adopted: _____ Attest: _____ Clerk of the Board</p> <p>Approved as to Form: City Attorney David Chiu</p>	<p>[company name]</p> <hr/> <p>[name of authorized representative] [title] [optional: address] [optional: city, state, ZIP]</p> <p><u>Acknowledgement of Large Vehicle Driver Safety Training Requirements:</u></p> <p>By signing this Agreement, Contractor acknowledges that it has read and understands Section 12.1: Large Vehicle Driver Safety Training Requirements.</p> <p>City Supplier Number: [Supplier Number]</p>

By: _____ Robert K. Stone Deputy City Attorney	
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Appendices to Appendix B Sample Agreement

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Appendix A
Contract Specifications

CONTRACT SPECIFICATIONS – SECTIONS 1-35

The Contract Specifications are voluminous, and will be separately provided to interested Proposers .

Appendix B
Schedule of Prices and Calculation of Charges

Appendix B1 Schedule of Prices

The tables contained in this Appendix B1 (Schedule of Prices) are to be used consistent with the instructions provided in Appendix B2 (Calculation of Charges).

SYSTEM PROCUREMENT

Table 1 contains the prices from the Contractor’s Price Proposal. All prices are in U.S. Dollars and include overhead and profit. The totals from this table are used to populate Appendix C (Payment Milestones). Each line item in this table corresponds to a Phase. Payment Milestones in Appendix C are expressed as percentages of each of these line items. Payments for System Procurement are made according to the procedures in Section B2.1.1 (Payment Procedures).

Table 1: System Procurement Price Schedule			
Line Items (Phases)	Labor	Material	Total
1. System Design			\$ __
2. Central Equipment, simulators, tools, documentation and training			\$ __
3. On-board Equipment fitting			\$ __
4. Pilot Phase			\$ __
5. Subway Replacement*			\$ __
6. N Expansion*			\$ __
7. T Expansion*			\$ __
8. K&M Expansions*			\$ __
9. J Expansion*			\$ __
10. L Expansion*			\$ __
Total System Procurement Price			\$ __

*May be adjusted for economic conditions in accordance with procedures in Section B2.3.2 (Economic Price Adjustment).

Table 2 (Pricing for Procurement Options) contains the pricing for procurement Options. The SFMTA may opt to equip additional railcars beyond the 219 included in the Total System Procurement Price, up to a limit of 30 additional railcars. The per-car price of equipping additional LRVs is stated in Table 2, Option 1.

The SFMTA also has an Option to equip its Heritage streetcars and maintenance Vehicles as part of the Project. The prices for these Options are included in Table 2 as Option 2 and Option 3. The Contractor’s design may not require equipping the Heritage streetcars and maintenance Vehicles in order to meet the requirements in the Contract Specifications. If the Contractor’s design does not require equipping the Heritage streetcars and maintenance Vehicles, Option 2 and Option 3 may be priced at \$0.

Table 2: Pricing for Procurement Options. Price sheet for Options for procurement. These original Contract Rates will be adjusted for economic conditions in accordance with procedures in Section B2.3.2 (Economic Price Adjustment) at the time of invoice.		
	Price per vehicle	Maximum Price
1. Option 1. Additional onboard Equipment fitment per LRV4 railcar up to a maximum of 30 LRVs (including both Equipment and services required to equip each LRV)	\$ __ / car	\$__
2. Option 2. Additional onboard Equipment installation per Heritage streetcar up to a maximum of 50 Vehicles (including Equipment, installation, and services required to equip each streetcar)	\$ __ / car	\$__
3. Option 3. Additional onboard Equipment installation per maintenance Vehicle up to a maximum of 30 Vehicles (including Equipment, installation, and services required to equip each streetcar)	\$ __ / car	\$__

SYSTEM SUPPORT

Table 3 (System Support Prices) contains the support fees to be used for the base Support Term and each of the 5-year Options. Column A contains the original monthly support fees from the Contractor’s Price Proposal, in 2023 dollars. The values in this column do not change for the lifetime of the Contract.

The Monthly Support Fee is adjusted annually to compensate for economic conditions as described in Section B2.3.2 (Economic Price Adjustment). The resulting adjusted Monthly Support Fee is placed in Column B each year. The values in this column form the basis for further performance-based adjustments as described in Section B.2.2.2 (Payment Procedures).

Column D contains the maximum support fees the Contractor could receive with perfect performance and assuming a maximum escalation. These numbers are used to calculate the total value of the Support Term of the Contract.

All prices are in USD and include overhead and profit.

Table 3: System Support Prices				
	A. Original Monthly Support Fee (Contract Rate)	B. Adjusted Monthly Support Fee	C. Number of Months	D. Maximum Support Fee
1. Initial Support Term: 10-year System support services	\$ ___ / month	\$ ___ / month	120	\$ ___
2. Option 4: first 5-year extension for System support services	\$ ___ / month	\$ ___ / month	60	\$ ___
3. Option 5: second 5-year extension for System support services	\$ ___ / month	\$ ___ / month	60	\$ ___

Rates for Additional Services

Table 4 (Hourly Labor Rates by Position) contains Contractor’s committed Fully Burdened Hourly Labor Rates, as defined in Article 2 (Definitions), for the purposes of calculating additional design/software Work constituting a Contract Modification, as provided for in Section 12.5 (Modification of this Agreement). Contractor shall use these rates when calculating its estimates for all Contract Modifications, and when invoicing for Work not covered by the Procurement Milestones or Monthly Support Fee.

These original Contract Rates will be adjusted for economic conditions in accordance with procedures in Section B2.3.2 (Economic Price Adjustment) at the time SFMTA issues a Request for Proposal or receives a Contractor’s Contract Modification request.

Table 4 shall contain rates covering all Contractor’s personnel assigned to perform Work under this Contract. It is not necessary to include the names of individual personnel. Attach additional pages as necessary.

Table 4: Hourly Labor Rates by Position.		
Position/Classification (Work to be Performed)	Education/ Experience	Hourly Rate
Project Manager	Master of Science, 15 years’ experience	\$ ____
Software Engineer	Bachelor of Science, 2 years’ experience	\$ ____
Electrical Engineer	Bachelor of Science, 2 years’ experience	\$ ____
...	...	\$ ____

Table 5. Spare Part Price Sheet. Price sheet for billing Reimbursable Parts under the terms provided in Section B2.2.3 (Monthly Support Fee Calculation). These original Contract Rates will be adjusted in accordance with procedures in Section B2.3.2 (Economic Price Adjustment) at the time of invoice. Attach additional pages as necessary.

Item	Description	Spare Part Unit Price
1.	On-board train control Equipment	n/a
1.1.	LRV4 Light Rail Vehicles on-board Equipment	n/a
1.1.1.	Vehicle control unit	\$ ____
1.1.2.	Vehicle event recorder	\$ ____
1.1.3.	Train operator display	\$ ____
1.1.4.	Radio transmission unit	\$ ____
1.1.5.	Radio antenna	\$ ____
1.1.6.	Odometry sensor	\$ ____
1.1.7.	Obstacle detection sensor	\$ ____
1.1.8.	Cables	\$ ____
1.2.	Heritage fleet on-board Equipment	n/a
1.2.1.	Vehicle control unit	\$ ____
1.2.2.	Vehicle event recorder	\$ ____
1.2.3.	Train operator display	\$ ____
1.2.4.	Radio transmission unit	\$ ____
1.2.5.	Radio antenna	\$ ____
1.2.6.	Odometry sensor	\$ ____
1.2.7.	Obstacle detection sensor	\$ ____
1.2.8.	Cables	\$ ____
1.3.	Maintenance vehicles on-board Equipment	n/a
1.3.1.	Vehicle control unit	\$ ____
1.3.2.	Vehicle event recorder	\$ ____
1.3.3.	Train operator display	\$ ____

Table 5. Spare Part Price Sheet. Price sheet for billing Reimbursable Parts under the terms provided in Section B2.2.3 (Monthly Support Fee Calculation). These original Contract Rates will be adjusted in accordance with procedures in Section B2.3.2 (Economic Price Adjustment) at the time of invoice. Attach additional pages as necessary.

Item	Description	Spare Part Unit Price
1.3.4.	Radio transmission unit	\$ ____
1.3.5.	Radio antenna	\$ ____
1.3.6.	Odometry sensor	\$ ____
1.3.7.	Obstacle detection sensor	\$ ____
1.3.8.	Cables	\$ ____
2.	Central systems Equipment	n/a
2.1.	Workstation	\$ ____
2.2.	Server	\$ ____
2.3.	Network Equipment	\$ ____
2.4.	Simulators Equipment	\$ ____
2.5.	Special tools and test Equipment	\$ ____
2.6.	Master Clock	\$ ____
2.7.	Worker Protection System	\$ ____
2.8.	Heating, Ventilation & Air Conditioning Equipment	\$ ____
2.9.	Uninterruptible Power Supply Equipment	\$ ____
2.10.	Power supplies	\$ ____
2.11.	Brackets, poles, ramps, covers, boxes, cabinets	\$ ____
3.	Station and wayside Equipment	n/a
3.1.	Automatic Train Control – Zone Controller	\$ ____
3.2.	Automatic Train Control – Transponder	\$ ____
3.3.	Solid State Interlocking computer	\$ ____
3.4.	Interlocking object controllers	n/a
3.4.1.	Drawbridge controllers	\$ ____
3.4.2.	Freight railroad crossing controller	\$ ____

Table 5. Spare Part Price Sheet. Price sheet for billing Reimbursable Parts under the terms provided in Section B2.2.3 (Monthly Support Fee Calculation). These original Contract Rates will be adjusted in accordance with procedures in Section B2.3.2 (Economic Price Adjustment) at the time of invoice. Attach additional pages as necessary.

Item	Description	Spare Part Unit Price
3.4.3.	Signal controller	\$ ____
3.4.4.	Switch machine controller	\$ ____
3.4.5.	Traffic system controller	\$ ____
3.4.6.	Other object controller	\$ ____
3.5.	Interlocking Local Control Panel	\$ ____
3.6.	Train Depart Local Control Console	\$ ____
3.7.	Automatic Turnback Console	\$ ____
3.8.	Train detection/location device	\$ ____
3.9.	Train signal	\$ ____
3.10.	Switch machine	\$ ____
3.11.	Electric lock for manual switch	\$ ____
3.12.	Train-to-wayside communication unit	\$ ____
3.13.	Train-to-wayside communication antenna	\$ ____
3.14.	Wireless backhaul communication unit	\$ ____
3.15.	Wireless backhaul communication antenna	\$ ____
3.16.	Network switch	\$ ____
3.17.	Heating, Ventilation & Air Conditioning Equipment	\$ ____
3.18.	Uninterruptible Power Supply Equipment	\$ ____
3.19.	Power supplies	\$ ____
3.20.	Brackets, poles, ramps, covers, boxes, cabinets	\$ ____
...	...	\$ ____

Appendix B2 Calculation of Charges

Charges are calculated using the below tables and procedure.

B2.1 System Procurement Procedures.

B2.1.1 Payment Procedures.

B2.1.1.1 Milestone Payments. From NTP until Final Acceptance, payment is made according to the Milestone payment schedule in Appendix C (Payment Milestones). Major Milestones are marked in boldface type in Appendix C and are marked with “MM” in the corresponding row.

B2.1.1.1.1 Payment Made Upon Completion. The SFMTA will only make payment for a Major Milestone after the SFMTA has approved all Work for that Milestone.

B2.1.1.1.2 Progress Payments. The Contractor may invoice for progress made against non-major Milestones on a monthly basis, or less frequently. SFMTA will only make payments in full for Major Milestones.

B2.1.1.2 Option Payments. Payment for Options of additional Vehicle Equipment from Table 2 (Pricing for Procurement Options), will be made upon SFMTA Acceptance of the installed and tested Equipment. The Contractor may invoice for progress made based on the number of kits installed, tested and accepted.

B2.1.2 Retention. The SFMTA will withhold five percent (5%) of each payment to Contractor, as provided in General Provisions, Section 4.5.3.

B2.2 System Support Procedures.

B2.2.1 Monthly Support Fee. The Agreement provides for monthly Support Services as described in Appendix A, Section 32 (Support Prices). In exchange for Support Services, the SFMTA will pay Contractor a Monthly Support Fee. The Total Monthly Support Fee is stated in Table 3 (System Support Prices) for the Initial Support Term and the Options.

B2.2.2 Payment Procedures. On the first day of each month, Contractor shall perform the calculations described in this Section B2.2 to adjust the Monthly Support Fee and submit an invoice to SFMTA for payment.

B2.2.2.1 Invoice Start Date. The Contractor shall not invoice for Support Services until the first day of the month following the SFMTA’s Conditional Acceptance of the Subway Replacement Phase.

B2.2.2.2 Invoice Format. The Contractor’s monthly invoice shall be in the format described in General Provisions, Section 4.5.5 (Invoice Format) and show Contractor’s adjustments and calculations using the procedures in this Section B2.2 (System Support Procedures).

B2.2.2.3 Payment. The SFMTA will verify the calculations and adjustments. This SFMTA will pay Contractor the adjusted amount based on this verification.

B2.2.2.4 Disputes. Disagreements between the Parties over the adjusted Monthly Support Fee shall be resolved using the Dispute Resolution Procedures provided for in General Provisions, Section 12.10 (Construction and Interpretation of Contract Documents).

B2.2.3 Monthly Support Fee Calculation. The agreed-upon Monthly Support Fee is adjusted to account for economic conditions by SFMTA using the procedures in Section B2.3.2 below (Economic Price Adjustment). The SFMTA will update the values in Appendix B1 (Schedule of Prices), Table 3, Column B annually with the result of that economic adjustment. The Monthly Support Fee is further adjusted based on performance using the instructions in this section. Prior to Final Acceptance, the Monthly Support Fee is “phased-in” depending on the number of Deployment Phases which have received Conditional Acceptance by the SFMTA. The Monthly Support Fee will be reduced by 50 percent until Contractor demonstrates that the System meets the Performance Requirements specified in Appendix I, Section 1.1 (Performance Requirements).

B2.2.3.1 Adjustments for Phase-In. For each of the months following Subway Conditional Acceptance but prior to Final Acceptance, Contractor shall multiply the Monthly Support Fee from Appendix B1 (Schedule of Prices), Table 3, Column A by the Phase-in Adjustment Factor calculated using the instructions in Section B2.2.4.4 (Calculation of Performance Adjustment Factor), below.

B2.2.3.2 Adjustments for Performance. For each of the months following Final Acceptance, Contractor shall multiply the Adjusted Monthly Support Fee from Appendix B1 (Schedule of Prices), Table 3, Column B by the Performance Adjustment Factor from Appendix B2 (Calculation of Charges), Table 7, Row 7 calculated using the instructions in Section B2.2.4, below.

B2.2.3.3 Adjustment for Failure to Demonstrate RAM. If Contractor has initiated but not completed the Initial Reliability and Maintainability Demonstration Testing (RMDT) or the Contractor has initiated but not completed the Final RMDT as specified in Appendix A, Section 30.6.5, the Monthly Support Fee, after all adjustments described in this Section B2.2.3 have been made, shall be reduced by 50 percent.

B2.2.3.4 Reimbursement for Spare Parts. Appendix A, Section 32.4.1 (Provision of Equipment and Spare Parts) of the Contract Specifications permits Contractor to invoice the SFMTA for Reimbursable Parts. The Contractor shall use the prices from Appendix B1 (Schedule of Prices), Table 5, as adjusted according to B2.3.2 (Economic Price Adjustment), to calculate this reimbursement and add this amount to the monthly support invoice as a separate line item.

B2.2.4 Calculation of Performance-Based Monthly Support Fee Adjustments. Up to 20% of the Monthly Support Fee is variable based on Contractor’s and System

Performance relative to the Performance Targets listed in Appendix I (Performance and Service Level Requirements). If Contractor's and System Performance meets the Performance Targets, Contractor receives 100% of the Monthly Support Fee. For performance exceeding the targets, Contractor may receive up to a 140% adjustment of the variable portion of the support fee (totaling 108% of the Monthly Support Fee). For performance not meeting the targets, the variable portion is reduced, according to the schedule in Table 6. The variable portion can be reduced to zero, in which case Contractor will receive 80% of the Monthly Support Fee, which is the minimum, fixed portion of the fee.

B2.2.4.1 Performance Calculations. For each month that a Support Fee is invoiced, Contractor shall calculate Availability, Reduction in Operating Margin Events, Loss of Critical Function, and Support Tickets Exceeding Resolution Time according to the methodology provided in Appendix A, Section 30 (Reliability, Availability, and Maintainability (RAM)). The SFMTA will review and independently verify these calculations.

B2.2.4.2 Availability Performance Score Calculation. The Contractor shall enter the month's availability, A_s , into the formula in Row 1. The formula yields the percent. Round down to the nearest value of 140%, 120%, 100%, 80%, 60%, 40%, 20%, 0%. If the formula produces a value less than 0, use 0%. This is the Performance Score for Availability. Enter this Value in Row 1, Column B of Appendix B2 (Calculation of Charges), Table 7.

B2.2.4.3 Other Performance Score Calculations. The Contractor shall compare the actual number of Operating Margin Events, Loss of Critical Function events and open Unsatisfactory Issues during the month and compare those counts to the values in Appendix B2 (Calculation of Charges), Table 6.

B2.2.4.3.1 For each of these three parameters, the Contractor shall select the column corresponding to the largest number that is equal to or lower than the actual performance this month. If no values in the table are lower than the actual performance, the Contractor shall select the 140% column.

B2.2.4.3.2 For the Unsatisfactory Issues row, the Contractor shall select the 120% column if there have been zero Unsatisfactory Issues this month and the two months preceding. The Contractor shall select the 140% column if there have been zero Unsatisfactory Issues this month and the five months preceding.

B2.2.4.3.3 Read the percent from the top row of the column and enter those percentages Column B of Table 7 for the corresponding parameters. For each column selected at 140% or 120%, the Contractor shall enter "100%" into Column B of Table 7 in place of 140% or 120% if ANY of the four parameters is less than 100% this month.

B2.2.4.4 Calculation of Performance Adjustment Factor. To calculate the Performance Adjustment Factor, the Contractor shall multiply each parameter's Performance Score in Column B of Table 7 by the corresponding weights in Column C of Table 7. Add the four weighted Performance Scores together and enter into Row 5, Column D of Table 7. Add 80% (representing the fixed fee) to this total and enter into Row 7, Column D of Table 7. This is the Performance Adjustment Factor.

Table 6 (Calculation of Performance Scores) is to be used to convert the monthly performance into Performance Scores in accordance with the procedures in Section B2.2.4 (Calculation of Performance-Based Monthly Support Fee Adjustments). These scores are then entered into Table 7 for calculation of the month’s Performance Adjustment Factor.

Table 6: Calculation of Performance Scores										
Weight	Parameter	Performance Targets	Performance Score							
			140%	120%	100%	80%	60%	40%	20%	0%
4%	Availability A _s	X	$Perf\ Score = \frac{2A_s + 5 - 7X}{5 - 5X}$							
4%	Reduction in Operating Margin Events	Y	y/5	y/2	y = Y/12	1.25y	1.5y	1.75y	2y	> 2y
2%	Loss of Critical Function	Z	z/5	z/2	z = Z/12	1.25z	1.5z	1.75z	2z	> 2z
10%	Unsatisfactory Issues Tally	0	**	*	0	5	10	15	20	> 20

* 120% awarded for three consecutive months with zero Unsatisfactory Issues

**140% awarded for six or more consecutive months with zero Unsatisfactory Issues

Table 7 (Calculation of Performance Adjustment Factor) is to be filled in each month to calculate the Performance Adjustment Factor in accordance with the procedures in Section B2.2.4 (Calculation of Performance-Based Monthly Support Fee Adjustments).

Table 7: Calculation of Performance Adjustment Factor				
	Column A	Column B	Column C	Column D
Row	Parameter	Performance Score	Weight	Weighted Performance Score
1	Availability		× 4% =	
2	Reduction in Operating Margin Events		× 4% =	
3	Loss of Critical Function		× 2% =	
4	Unsatisfactory Issues Tally		× 10% =	
5	Sum of Weighted Performance Scores			
6	Add monthly fixed fee			+ 80%
7	Performance Adjustment Factor			

B2.2.5 Calculation of Phase-in Adjustments. The System will be implemented in Phases, as described in Appendix A, Section 8 (Deployment, Migration and Acceptance). The Support Services for the Software and Equipment Contractor will provide during a Deployment Phase will begin at the end of that Phase's Warranty Period. Until Final Acceptance, the Monthly Support Fee will be pro-rated according to the schedule in Appendix B2 (Calculation of Charges), Table 8 to account for the fact that the SFMTA will not receive Support Services for the portions of the System that the SFMTA has not yet accepted.

B2.2.5.1 Calculation of Phase-in Adjustment Factor. To calculate the Phase-in Adjustment Factor, the Contractor shall add the corresponding Phase-in Adjustment Percentage from Appendix B2 (Calculation of Charges), Table 8 for each of the Phases which the SFMTA has given Conditional Acceptance.

B2.2.5.2 Sunset of Phase-in Adjustment Factor. Starting on the first of the month after Final Acceptance, the Phase-in Adjustment Factor will no longer be calculated and is instead set at 100%.

Table 8: Support Payment Schedule for Phased Delivery	
Phase	Phase-In Adjustment Percentage
1. Pilot Phase & Subway Replacement	50%
2. N Expansion	10%
3. T Expansion	10%
4. K&M Expansions	10%
5. J Expansion	10%
6. L Expansion	10%
TOTAL ALL PHASES	100%

B2.3 General Procedures

B2.3.1 Exchange Rate Risk. The City will not make price adjustments on this Contract to compensate Contractor for losses from fluctuations in the value of foreign currencies in relation to the United States dollar.

B2.3.2 Economic Price Adjustment. SFMTA may make certain price adjustments to this Contract, in accordance with the terms of this Section B2.3.2 (Economic Price Adjustment), below. Price adjustments will apply to:

- a. System Procurement Price Schedule line items listed in Appendix B1 (Schedule of Prices), Table 1, line items 5 – 10.
- b. Pricing for Options listed in Appendix B1 (Schedule of Prices), Table 2, all line items.
- c. System Support prices, listed in Appendix B1 (Schedule of Prices), Table 3, line items 1 -3.
- d. Hourly rates for labor, listed in Appendix B2 (Calculation of Charges), Table 4, all line items
- e. Spare part prices, listed in Appendix B2 (Calculation of Charges), Table 5, all line items
- f. Liquidated damages, as specified in Section 5.17.9 (Liquidated Damages for Transit Service Interruption) through 5.17.11 (Liquidated Damages for Project Delays).

B2.3.2.1 Sole Remedy for Cost Increases. If the SFMTA grants an economic price adjustment under this Section, said adjustment shall be Contractor's sole remedy for any increases in Contractor's costs arising from or related to economic inflation.

B2.3.2.2 Adjustment Timing.

B2.3.2.2.1 System Procurement Price Schedule line items listed in Appendix B1 (Schedule of Prices), Table 1 items 1 – 4 shall not be adjusted.

B2.3.2.2.2 System Procurement Price Schedule line items listed in Appendix B1 (Schedule of Prices), Table 1 items 5 - 10 if adjusted, shall be adjusted only once upon commencement of the associated Deployment Phase.

B2.3.2.2.3 Prices for the Options listed in Appendix B1 (Schedule of Prices), Table 2, if exercised, will be adjusted only once, at the SFMTA exercise of the Option, if that exercise occurs more than three years from Notice to Proceed, in accordance with the price adjustments set out in this Appendix.

B2.3.2.2.4 System Support prices, including prices of Options, listed in Appendix B1 (Schedule of Prices), Table 3, will be adjusted once upon commencement of the support, and may be adjusted yearly thereafter on the anniversary date of the commencement of the Support period.

B2.3.2.2.5 Hourly rates for labor listed in Appendix B1 (Schedule of Prices), Table 4, if adjusted, will be adjusted at the time a change order is requested.

B2.3.2.2.6 Spare part prices, listed in Appendix B1 (Schedule of Prices), Table 5, if adjusted, will be adjusted at the time of invoice based on the current material adjustment factor in effect.

B2.3.2.2.7 The Liquidated Damages amounts in Sections 5.17.9 (Liquidated Damages for Transit Service Interruption) through 5.17.11 (Liquidated Damages for Project Delays) shall be adjusted at the same time any of the prices identified in Section B2.3.2 (Economic Price Adjustment) are adjusted

B2.3.2.3 Economic Price Adjustment Calculation. The SFMTA will calculate adjustment to prices for unforeseen market or labor conditions using the North American Industry Classification System (NAICS) labor and material indices published by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). These indices may be found at:

- a. <https://www.bls.gov/iag/tgs/iag334.htm>,
- b. www.bls.gov/iag/tgs/iag335.htm,
- c. www.bls.gov/iag/tgs/iag336.htm, and
- d. <https://www.bls.gov/iag/tgs/iag54.htm>.

B2.3.2.3.1 Labor Indices. The SFMTA will calculate adjustment to prices for changing labor conditions using the average of following indices, equally weighted:

- a. Series CEU3133500003 – Average hourly earnings of all employees index for the NAICS Manufacturing Series, Code 335, Electrical Equipment, Appliance and Component Manufacturing,
- b. Series CEU3133600003 – Average hourly earnings of all employees index for the NAICS Manufacturing Series, Code 336, Transportation Equipment, and
- c. Series CEU6054000003 – Average hourly earnings of all employees index for the NAICS Manufacturing Series, Code 541, Professional, Scientific, and Technical Services.

B2.3.2.3.2 Material Indices. The SFMTA will calculate adjustment to prices for changing market conditions using:

- a. Series PCU334419334419 – Producer Price Index (PPI) for the NAICS Manufacturing Series, Code 3344, Semiconductor and Other Electronic Component Manufacturing,
- b. Series PCU335---335--- – Producer Price Index (PPI) for the NAICS Manufacturing Series, Code 335, Electrical Equipment, Appliance and Component Manufacturing, and
- c. Series PCU336---336--- – Producer Price Index (PPI) for the NAICS Manufacturing Series, Code 336, Transportation Equipment.

B2.3.2.3.3 Determination of Adjustment Factor.

B2.3.2.3.3.1 SFMTA will determine the base labor and material indices by calculating the arithmetic mean (average) of the referenced final published indices for the three months prior to the date of Notice to Proceed.

B2.3.2.3.3.2 SFMTA will determine the current labor and material indices by calculating the arithmetic mean of the referenced final published indices for the three months prior to the date of adjustment.

B2.3.2.3.3.3 The adjustment factor is the ratio of the current index to the base index. There are two adjustment factors, a labor adjustment factor and a material adjustment factor.

B2.3.2.3.4 Determination of Adjusted Price.

B2.3.2.3.4.1 SFMTA will use the Contract Amount stated for Work not yet performed (that is, the cost of remaining Work, excluding the sum prices for all Contract Modifications and Work delayed by Contractor) stated in Table 1 (System Procurement Price Schedule) of Appendix B1 (Calculation of Charges) as the basis for adjustment.

B2.3.2.3.4.2 System Procurement Prices.

B2.3.2.3.4.2.1. Appendix B1 (Schedule of Prices), Table 1 shall provide the labor and material prices for each System Procurement Price Schedule line item to be adjusted.

B2.3.2.3.4.2.2. SFMTA shall adjust the labor price for each System Procurement Price Schedule line item by multiplying the price by the labor adjustment factor.

B2.3.2.3.4.2.3. SFMTA shall adjust the material price for each System Procurement Price Schedule line item by multiplying the price by the material adjustment factor.

B2.3.2.3.4.2.4. SFMTA shall add the adjusted labor and material prices together to produce the adjusted total price.

B2.3.2.3.4.2.5. SFMTA shall modify Appendix B1 (Schedule of Prices), Table 1 with the adjusted labor, material and total prices for each line item

B2.3.2.3.4.2.6. SFMTA shall modify the “Milestone Payment” column in Appendix C (Payment Milestones) with the adjusted total price from Appendix B1 (Schedule of Prices), Table 1 (corresponding to 100%), and with recalculated values for each of the subordinate Milestones based on the percentages of that total price specified in Appendix C, for each phase to be adjusted.

B2.3.2.3.4.2.7. No Milestone or Phase shall be adjusted beyond the date committed to in Appendix C (Payment Milestones). If Contractor delays the Work causing delay to completion of a Milestone, Project completion date, or other deadline tied to compensation, the delayed Work shall not be subject to escalation.

B2.3.2.3.4.3 Prices for Options listed in Appendix B1, Table 2. SFMTA shall adjust the material price for each Option by the ratio of current material indices to base material indices applicable when the SFMTA exercises the Option.

B2.3.2.3.4.4 System Support Prices, including Options, listed in Appendix B1, Table 3.

B2.3.2.3.4.4.1. SFMTA shall use the monthly support fee from the “Original Monthly Support Fee” column in Appendix B1 (Schedule of Prices), Table 3 for this calculation.

B2.3.2.3.4.4.2. The monthly support fee shall be broken down by the percentages of labor and material as follows: 40% labor and 60% material.

B2.3.2.3.4.4.3. SFMTA shall adjust the labor portion for the monthly support fee by multiplying the labor portion of the monthly support fee by the labor adjustment factor.

B2.3.2.3.4.4.4. SFMTA shall adjust the material portion for the monthly support fee by multiplying the material portion of the monthly support fee by the material adjustment factor.

B2.3.2.3.4.4.5. SFMTA shall add the adjusted labor and material fees together to produce the adjusted total monthly support fee.

B2.3.2.3.4.4.6. SFMTA shall modify the “Adjusted Monthly Support Fee” column in Appendix B1 (Schedule of Prices), Table 3 with the adjusted total monthly support fee. SFMTA shall not modify the “Original Monthly Support Fee” column.

B2.3.2.3.4.5 Hourly Rates for Labor listed in Appendix B1 (Schedule of Prices), Table 4. Upon issuing a Request for Proposal or receiving a Contractor’s Contract Modification request, SFMTA shall calculate and publish the labor adjustment factor. When providing a Proposal in response to an SFMTA request, Contractor shall adjust the hourly rates by multiplying the labor hourly rates by the most recent labor adjustment factor published by SFMTA and include this calculation in the Proposal. The adjusted hourly rates shall be used to calculate the Contract Modification price.

B2.3.2.3.4.6 Spare Part Prices listed in Appendix B1 (Schedule of Prices), Table 5. When making an adjustment on the dates specified in Section B2.3.2.2.4 of Section B2.3.2.2 (Adjustment Timing), SFMTA shall publish the material adjustment factor in effect for that year. When invoicing the SFMTA for Reimbursable Parts, the Contract shall adjust the spare part prices by multiplying the prices by the most recently published material adjustment factor as of the invoice date and include this calculation in the invoice. The adjusted prices shall be used to calculate the reimbursement.

B2.3.2.3.4.7 Liquidated Damages. The Liquidated Damages specified in General Provisions Section 5.17.9 through 5.17.11 (Liquidated Damages for Project Delays) shall be adjusted by multiplying the liquidated damages amounts by the most recent labor adjustment factor calculated by SFMTA.

B2.3.2.4 Limit of Adjustments

B2.3.2.4.1 Annual Economic Price Adjustment Cap. The cumulative price adjustments shall not exceed a compounded average increase or decrease of 6 percent per year (calculated relative to the prices stated in the Agreement for the immediately preceding year).

B2.3.2.5 Adjustment Procedure.

B2.3.2.5.1 Requests. The Contractor shall request Economic Price Adjustments from the SFMTA in accordance with the procedures in this Section B2.3.2 (Economic Price Adjustment). Requests shall be in writing, made at least 90 calendar days ahead of the first day to which the adjustment applies and include the requested amount of adjustment. The SFMTA may make Economic Price Adjustments without a request, according to the adjustment timing in Section B2.3.2.2 (Adjustment Timing). The SFMTA will calculate the price adjustments using the procedures in Section B2.3.2.3 (Economic Price Adjustment Calculation).

B2.3.2.5.2 Contract Modification. Adjustment of prices and adjustment of liquidated damages shall be memorialized in a Contract Modification executed by the Parties, as described in General Provisions, Section 12.5 (Modification of this Agreement).

Appendix C

Payment Milestones

Note: Major Milestones are indicated in **bold** in the following Table and by “MM” in the corresponding row. Refer to Section B2.1.1 (Payment Procedures) for more details.

Milestone payments in phases marked with (*) may be adjusted as specified in Appendix B2.3.2. Prices listed below are subject to 5% payment reduction for Retention, as provided in General Provisions, Section 4.5.3.

Phase	No	MM	Milestone	% of Phase Price	Milestone Payment	Days From NTP
1. System design				100%	\$	
1	1	MM	Approval of Interim Schedule	5%	\$	11
1	2	MM	Approval of Conceptual Design	10%	\$	29
1	3	MM	Approval of Project Management Plan	10%	\$	30
1	4		Approval of Baseline Schedule	10%	\$	81
1	5	MM	Approval of Preliminary Design	15%	\$	231
1	6	MM	Approval of Final System Design	30%	\$	497
1	7		First Article Inspection	20%	\$	
2. Central Equipment, simulators, tools, documentation and training				100%	\$	
2	1	MM	Delivery of all primary Central Control Equipment	20%	\$	917
2	2	MM	Delivery of all secondary Central Control Equipment	20%	\$	917
2	3		Delivery of all simulators	15%	\$	
2	4	MM	Delivery of initial operations and maintenance training (Pilot Phase)	5%	\$	
2	5		Delivery of follow-up operations and maintenance training (Subway Replacement Phase)	10%	\$	
2	6		Delivery of final operations and maintenance training (Entire System)	10%	\$	
2	7		Delivery of all SLMDs and tools necessary for maintenance	10%	\$	

Phase	No	MM	Milestone	% of Phase Price	Milestone Payment	Days From NTP
3. Onboard Equipment fitting				100%	\$	
3	1		Successful static test of first equipped train in the test track	20%	\$	
3	2		SFMTA Acceptance of first 20 cars	10%	\$	
3	3	MM	SFMTA Acceptance of first 100 cars	30%	\$	1449
3	4	MM	SFMTA Acceptance of all 219 cars	30%	\$	1862
3	5		Successful operation of historic and non-revenue vehicles on the CBTC System	10%	\$	1862
4. Pilot phase				100%	\$	
4	1	MM	Approval of Pilot Phase Construction Final Design	10%	\$	672
4	2		Pilot FAT completed successfully	10%	\$	
4	3		All Pilot Phase Equipment delivered	10%	\$	
4	4		All Pilot Phase static site acceptance tests completed	10%	\$	
4	5	MM	All Pilot Phase dynamic site acceptance tests completed	10%	\$	1253
4	6		Delivery of initial operations and maintenance training (Pilot Phase)	10%	\$	
4	7	MM	SFMTA approval to begin Pilot Revenue Service	20%	\$	1281
4	8	MM	Pilot Conditional Acceptance (following successful completion of Warranty Period)	20%	\$	2030
5. Subway Replacement*				100%	\$	
5	1	MM	Approval of Subway Replacement Phase Construction Final Design	10%	\$	966
5	2		Subway Replacement FAT completed successfully	10%	\$	
5	3		All Subway Replacement Phase Equipment delivered	10%	\$	
5	4		All Subway Replacement Phase static site acceptance tests completed	10%	\$	

Phase	No	MM	Milestone	% of Phase Price	Milestone Payment	Days From NTP
5	5	MM	All Subway Replacement Phase dynamic site acceptance tests completed	10%	\$	1834
5	6		Delivery of follow-up operations and maintenance training (Subway Replacement Phase)	5%	\$	
5	7	MM	SFMTA approval to begin Subway Revenue Service (Subway Cutover)	20%	\$	1862
5	8	MM	Subway Conditional Acceptance (following successful completion of Warranty Period)	20%	\$	2030
5	9		Successful removal of all legacy ATCS equipment from vehicles	5%	\$	
6. N Expansion*				100%	\$	
6	1	MM	Approval of N Expansion Phase Construction Final Design	20%	\$	1204
6	2		N Expansion Replacement FAT completed successfully	10%	\$	
6	3		All N Expansion Phase Equipment delivered	10%	\$	
6	4		All N Expansion Phase static site acceptance tests completed	10%	\$	
6	5		All N Expansion Phase dynamic site acceptance tests completed	10%	\$	
6	6	MM	SFMTA approval to begin N expansion Revenue Service	20%	\$	2030
6	7	MM	N Expansion Conditional Acceptance	20%	\$	2198
7. T Expansion*				100%	\$	
7	1	MM	Approval of T Expansion Phase Construction Final Design	20%	\$	1456
7	2		T Expansion FAT completed successfully	10%	\$	
7	3		All T Expansion Phase Equipment delivered	10%	\$	
7	4		All T Expansion Phase static site acceptance tests completed	10%	\$	

Phase	No	MM	Milestone	% of Phase Price	Milestone Payment	Days From NTP
7	5		All T Expansion Phase dynamic site acceptance tests completed	10%	\$	
7	6	MM	SFMTA approval to begin T expansion Revenue Service	20%	\$	2198
7	7	MM	T Expansion Conditional Acceptance	20%	\$	2305
8. K&M Expansions*				100%	\$	
8	1	MM	Approval of K&M Expansion Phase Construction Final Design	20%	\$	1708
8	2		K&M Expansion FAT completed successfully	10%	\$	
8	3		All K&M Expansion Phase Equipment delivered	10%	\$	
8	4		All K&M Expansion Phase static site acceptance tests completed	10%	\$	
8	5		All K&M Expansion Phase dynamic site acceptance tests completed	10%	\$	
8	6	MM	SFMTA approval to begin K&M expansion Revenue Service	20%	\$	2366
8	7	MM	K&M Expansion Conditional Acceptance	20%	\$	2534
9. J Expansion*				100%	\$	
9	1	MM	Approval of J Expansion Phase Construction Final Design	20%	\$	1960
9	2		J Expansion FAT completed successfully	10%	\$	
9	3		All J Expansion Phase Equipment delivered	10%	\$	
9	4		All J Expansion Phase static site acceptance tests completed	10%	\$	
9	5		All J Expansion Phase dynamic site acceptance tests completed	10%	\$	
9	6	MM	SFMTA approval to begin J expansion Revenue Service	20%	\$	2534
9	7	MM	J Expansion Conditional Acceptance	20%	\$	2702
10. L Expansion*				100%	\$	

Phase	No	MM	Milestone	% of Phase Price	Milestone Payment	Days From NTP
10	1	MM	Approval of L Expansion Phase Construction Final Design	20%	\$	2212
10	2		L Expansion FAT completed successfully	10%	\$	
10	3		All L Expansion Phase Equipment delivered	10%	\$	
10	4		All L Expansion Phase static site acceptance tests completed	10%	\$	
10	5		All L Expansion Phase dynamic site acceptance tests completed	10%	\$	
10	6		Delivery of final operations and maintenance training (Entire System)	5%	\$	
10	7	MM	SFMTA approval to begin L expansion Revenue Service	15%	\$	2751
10	8	MM	L Expansion Conditional Acceptance	20%	\$	2919
SFMTA Final Acceptance of System (Retention)				5% of Procurement Price	\$	-

Appendix D
Project Schedule

The below schedule is the original Contract Schedule agreed to by the Parties. This document shall not be modified and shall be referred to as the Contract Schedule.

**The Contractor's original schedule from the Proposal, as negotiated, will be included /
printed here**

Appendix E

Clarifications and Changes in the Work

To be provided by the City Attorney and included here

Appendix F
Performance Bonds

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that WHEREAS, the City and County of San Francisco, State of California, has awarded to:

_____ hereinafter designated as the “Principal”, a contract, dated, _____, for the City and County of San Francisco's Office of Contract Administration Contract No. _____ (the “Contract”).

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract (the “Bond”);

NOW, THEREFORE, we the Principal and _____, as Surety, are firmly bound unto the City and County of San Francisco ("City") in the penal sum of _____ Dollars (\$ _____)

lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents for a performance bond. The conditions of this obligation is such that if the said Principal does well and faithfully performs all the conditions and covenants of said Contract, according to the true intent and meaning thereof, upon its part to be kept and performed, then the above obligation is to be null and void, otherwise to remain in full force and effect.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden Principal, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said Contract, including the provisions for liquidated damages in the said Contract, any changes, additions or alterations thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City and County of San Francisco, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same and no inadvertent overpayment of progress payments shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications or of any inadvertent overpayment of progress payments.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their seal this _____ day of _____, 20_____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

PRINCIPAL

By: _____

Its: _____

Date: _____

SURETY

By: _____

Its: _____

NOTE: Signature of Sureties must be acknowledged by a Notary Public

Date: _____

CITY

By: _____
Benjamin Rosenfield, Controller

Date: _____

Approved as to form:
David Chiu
City Attorney

By: _____
Deputy City Attorney

Appendix G

Federal Contract Requirements

Federal Contract Requirements from Appendix G to the RFP will be included here

Appendix H

SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY

SMALL BUSINESS ENTERPRISE PROGRAM REQUIREMENTS

**Architects, Engineers, Planners, and Environmental
Scientists and Other Professional Services**

To be provided by the CCO and included here

Appendix I

Performance and Service Level Requirements

Contractor’s Performance Targets from Proposal to be entered to the Tables in this Appendix

I.1 Performance Requirements. The Contractor shall design and implement the CBTC System and provide Services to support the CBTC System so that it meets the Performance Requirements listed in this Appendix I, Table 1.

I.1.1 Use of Performance Requirements. The Performance Targets marked with an asterisk (*) in this Appendix I, Table 1 shall be used to calculate the Performance-Based Monthly Support Fee calculation as provided for in Appendix B2.2.4 (Calculation of Performance-Based Monthly Support Fee Adjustments).

Table 1: Performance Requirements

Row	Performance Metric	Calculation	Target
1	Lost Minutes per Year	Calculated as specified in the Contract Specifications (Appendix A), Section 30 (Reliability, Availability, Maintainability (RAM))	
2	System Availability (X)*		
3	Minimum System Mean Time Between Failures		
4	Mean Uptime		
5	Mean Corrective Maintenance Time		
6	Maximum Mean Corrective Maintenance Time		
7	Mean Time to Restore		
8	Maximum Preventative Maintenance Person-hours		
9	Maximum Corrective Maintenance Person-hours		
10	Confidence Limit		
11	Service Affecting Failures		
12	Loss of Critical Function (Z)*		
13	Reduction in Operating Margin (Y)*		

* Indicates that this value is used in the Performance-Based Monthly Support Fee calculation as provided for in Appendix B2.2.4 (Calculation of Performance-Based Monthly Support Fee Adjustments).

I.2 Service Levels for Technical Support Services. As part of the Warranty and Support Services described in Appendix A, Section 13 (Warranty and Spare Parts) and Section 32 (Support Services), the Contractor shall provide technical support for Issues with the CBTC System as reported by the SFMTA using the following procedures.

I.2.1 Severity Levels. There are three severity levels to Issues. SFMTA will assign a severity level to each Issue.

I.2.1.1 Urgent. The Issue is causing a service delay greater than 2 minutes. Delays may arise when a one or more vehicles are stopped for 2 or more minutes due to a CBTC System Issue, or there is degradation or loss of functionality to the System such that one or more trains proceed slowly and fall more than 2 minutes behind schedule.

I.2.1.2 Priority. The Issue is affecting rail operations but is not resulting in significant delays. Important functionality described in the Contract Specifications or the Contractor's manuals is not available, or SFMTA staff cannot perform routine operations, or the System is operating in a degraded mode. The Issue is causing a significant business impact, which is increasing the workload of SFMTA operations or maintenance staff to continue transit operations.

I.2.1.3 Routine. All other Issues reported by the SFMTA.

I.2.2 Incident Reporting and Handling Process

I.2.2.1 Reporting. SFMTA staff may report Issues to Contractor by telephone call, text or email to Contractor.

I.2.2.1.1 When reporting Issues by telephone or text, SFMTA staff must describe the Issue in detail, and must provide the name and phone number of the SFMTA contact person responsible for addressing the Issue with Contractor.

I.2.2.1.2 When reporting Issues by email, SFMTA staff will use Contractor's CBTC Issue Report Form.

I.2.2.2 Contractor Handling. Contractor shall use the information in the Issue Report Form to log the Issue and assign a severity level based on the information provided in the report. If the SFMTA staff making the report indicates the severity level, Contractor must assign that severity level.

I.2.2.2.1 When receiving an Issue report by telephone call or text, Contractor shall immediately fill in the CBTC Issue Report Form and email the completed form to SFMTA as acknowledgment of receipt.

I.2.2.2.2 Contractor shall acknowledge receipt of Issue reports made by email within one hour of receipt.

I.2.2.3 Disputes Involving Severity Level. If Contractor disagrees with the SFMTA's severity level assessment, Contractor may request a reevaluation of the severity. After Contractor resolves the Issue, the SFMTA will make a final evaluation as to the Issue's severity. So long as Contractor meets the response and resolution time

requirements in Table 2 within the time limit associated with the final assessment, the Issue will not count towards the Unsatisfactory Issue Tally.

I.2.3 Issue Response and Resolution

I.2.3.1 Calculation of Response and Resolution Times. All times in this section are calculated from the time Contractor acknowledges receipt of the Issue report, as marked on the Issue Report Form according to the handling instructions in I.2.2.2 (Contractor Handling).

I.2.3.2 Response. Contractor shall respond to Issue reports within the Target Response Time established in this Appendix I, Table 2, based on the severity level.

I.2.3.2.1 Definition. For the purposes of this section I.2 (Service Levels for Technical Support Services), response means the engagement of Contractor's technical support staff on the reported Issue and the initial technical communication between Contractor's technical support staff and SFMTA's staff on the reported Issue.

I.2.3.3 Root Cause Disposition. Contractor shall transmit a disposition of the root cause of an Issue to the SFMTA within the Target Root Cause Disposition time established in this Appendix I, Table 2, based on the severity level.

I.2.3.3.1 Definition. For the purposes of this section I.2 (Service Levels for Technical Support Services), Root Cause Disposition means Contractor's written explanation of the reasons why an Issue occurred, along with Contractor's recommended plan to resolve the Issue.

I.2.3.4 Resolution. Contractor shall resolve the issue within the Target Resolution Time established in Appendix I (Performance and Service Level Requirements), Table 2, based on the severity level.

I.2.3.4.1 Definition. For the purposes of this Section I.2, Resolution means the Issue as described in the Issue Report Form no longer occurs. An Issue which has a workaround or stopgap solution which reduces its severity level is considered resolved. However upon resolution of the initial Issue, a new Issue Report Form shall be filled out and logged at the new severity level. For example an Issue initially classified as Urgent may be marked as resolved and a new Priority Issue started if the Contractor develops a workaround such that the Issue is not resulting in service delays, but is still increasing the workload of operations staff.

I.2.3.4.2 No Fault Found. Issues which cannot be duplicated, or for which no cause could be determined may be marked as resolved unless SFMTA can demonstrate the Issue to the Contractor. Issues resolved in this way shall be distinguished from other resolved Issues so that they may be reopened if the Issue recurs.

I.2.3.4.3 Closure. Upon SFMTA’s acknowledgment that the Issue has been resolved satisfactorily, the issue may be closed, which removes it from the Unsatisfactory Issues Tally, if applicable.

Table 2: Response and Resolution Times

Performance Metric	Calculation	Target
Response Time	Maximum number of minutes between a trouble call and the initiation of troubleshooting or repair work <i>per incident</i> before affecting Monthly Support Fee	Example: 5 min
Urgent: An Issue with the train control System is causing a service delay.		
Priority: An Issue with the train control System is affecting rail operations.		
Routine: Any other Issue		
Root Cause Disposition Time	Maximum number of hours <i>per incident</i> between the initiation of troubleshooting and a report sent to the SFMTA detailing a root cause, before affecting Monthly Support Fee	Example: 1 hour
Urgent: An Issue with the train control System is causing a service delay.		
Priority: An Issue with the train control System is affecting rail operations.		
Routine: Any other Issue		
Resolution Time	Maximum number of hours <i>per incident</i> that tickets are open before affecting Monthly Support Fee	Example: 1 hour
Urgent: An Issue with the train control System is causing a service delay.		
Priority: An Issue with the train control System is affecting rail operations.		
Routine: Any other Issue		

I.2.4 Calculation of Unsatisfactory Issues Tally. The number of issues which are not resolved satisfactorily (“Unsatisfactory Issues”) each month affects the Performance-Based Monthly Support Fee calculation, as provided for in Appendix B2.2.4 (Calculation of Performance-Based Monthly Support Fee Adjustments). This section provides the procedures for calculating this tally.

I.2.4.1 Unsatisfactory Issue Designation and Scoring. An Issue is designated as an Unsatisfactory Issue if the Response Time, Root Cause Disposition time, or Resolution Time exceeded the Targets established in Appendix I, Table 2. An

Unsatisfactory Issue can have a score of 1, 2, or 3 depending on whether one, two or all three of these targets have been exceeded.

I.2.4.2 Monthly Tally. Each month, the Unsatisfactory Issues are tallied by summing the score for each Unsatisfactory Issue as provided for in I.2.4.1 (Unsatisfactory Issue Designation and Scoring) above. Each Unsatisfactory Issue can add 1, 2, or 3 to the tally. All Unsatisfactory Issues are tallied each month, starting with the month they are first designated Unsatisfactory, until they are closed. Each month, SFMTA will compare this Unsatisfactory Issues Tally to the values in Appendix B2 (Calculation of Charges), Table 6 when calculating the Contractor’s Monthly Support Fee.

I.3 Software Release Schedule. During the Support Term of this Agreement and as part of the included Support Services, the Contractor shall provide Software Releases meeting the requirements in Appendix A, Section 32.4.9 (Regular Software Releases) at the regular frequency specified in this Appendix I. Table 3.

Table 3: Software Release Schedule		
Frequency	(E.g. annually, quarterly, biennially)	

Appendix J
SFMTA Policies and Procedures

The attached documents in this Appendix J are the current versions (at time this Agreement was signed) of SFMTA Policies and Procedures applicable to the Work. From time to time the SFMTA may update these Policies and Procedures. The SFMTA Project Manager will communicate changes to these attached Policies and Procedures in writing, and in that communication provide replacement policy and procedure documents. When provided, those replacement documents will supersede the original documents in this Appendix J.

Appendix J includes the following documents:

- a. SFMTA Track and Tunnel Access Procedures
- b. Barcoding Procedures
- c. Technology Change Control Policy and Procedures
- d. System Safety Rail Change Control Board Policy
- e. SFMTA Rail Rule Book

These Policies and Procedures are voluminous, and will be separately provided to interested Proposers .

Appendix C

Attestation of Compliance

To be completed by all Proposing Firms and All Individual Subcontractors

(Please check each box, sign this form and submit it with your response.)

Name of individual completing this form: _____

The form is submitted on behalf of firm: _____

Name of RFP: **SFMTA-2022-40-FTA**

1. I attest that I and all members of the firm listed above will and have complied to date with Section **[Insert Correct Sec.SubSec. Ref. (normally "IX.K")]** of the above RFP.

Yes

2. I understand that if my firm or any members of the firm listed above are found to be in violation of Section **[Insert Correct Sec.SubSec. Ref. (normally "IX.K")]** of the above RFP, this will disqualify my firm and any Proposal in which my firm is named from further consideration. Yes

I have entered required responses to the above questions to the best of my knowledge and belief.

Signature: _____

Date: _____

Appendix D

To be completed by all Proposing Firms and All Individual Subcontractors

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

By signing and submitting its Proposal, the Proposer or proposed subcontractor certifies as follows:

(Proposer or Proposed Subcontractor Business Name)

certifies to the best of its knowledge and belief that it and its principals:

1. Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from contracting with any federal, state or local governmental department or agency;
2. Have not within a three-year period preceding the date of this Proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) contract; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses enumerated in paragraph (1)b of this certification; and
4. Have not within a three-year period preceding the date of this Proposal had one or more public contracts (federal, state, or local) terminated for cause or default.
5. Where the firm executing this RFP Appendix D is unable to certify to any of the statements in this certification, such firm shall attach a detailed explanation of facts that prevent such certification.
6. The certification in this clause is a material representation on fact relied upon by the San Francisco Municipal Transportation Agency.

As the authorized certifying official, I certify that the above-specified certifications are true.

Business Name

Authorized Representative Name (print)

Authorized Representative Title (print)

Authorized Representative Signature

Date

Appendix E

To be completed by all Proposing Firms and All Individual Subcontractors

Certification Regarding Lobbying

Certification for Contracts, Grants, Loans and Cooperative Agreements
(To be submitted with each bid or offer exceeding \$100,000)

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. https://www.gsa.gov/cdnstatic/SFLLL_1_2_P-V1.2.pdf?forceDownload=1
3. The undersigned will require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.
4. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Consultant or Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant or Contractor understands and agrees that the provisions of 31 U.S.C. § 3801, *et seq.*, apply to this certification and disclosure, if any.

Business Name

Authorized Representative Name (print)

Authorized Representative Title (print)

Authorized Representative Signature

Date

Appendix F

*To be completed by all Proposing Firms and Submitted as a Separate Electronic File;
Do Not Include the Price Proposal in Your Main Proposal Document File*

Price Proposal

Each Proposer must submit with its Proposal a completed Price Proposal Worksheet (Appendix F.1 and F.2) and a Detailed Price Schedule (Appendix F.3) to satisfy the submission requirements of Sections IV.C.5 (Price Proposal) of this RFP.

Appendix F.1 and F.2

Appendix F.1 forms the basis of the fixed Price Proposal for the procurement of the Proposer's System, while F.2 forms the basis of the Price Proposal for the ongoing support of the System, starting as sections of the System are Conditionally Accepted by SFMTA.

Appendix F.3

Appendix F.3 provides SFMTA with additional pricing information based on the price categories in Table I of Appendix F.1. These categories are expanded into the Detailed Price Schedule which describes the labor costs, quantity, and pricing of Materials and individual components for each category of the fixed Price Proposal.

Appendix F.1 Price Proposal Worksheet for System Procurement

For Table I, enter the total price for all labor and Material required to deliver a System which meets the specifications in the Contract Specifications. Enter all prices in USD, including overhead and profit

Table I: System Procurement Price Proposal

Line Items	Labor	Material	Total
1. System Design	\$ __	\$ __	\$ __
2. Central Equipment, simulators, tools, documentation and training	\$ __	\$ __	\$ __
3. On-board Equipment Fitting	\$ __	\$ __	\$ __
4. Pilot Phase	\$ __	\$ __	\$ __
5. Subway Replacement	\$ __	\$ __	\$ __
6. N Expansion	\$ __	\$ __	\$ __
7. T Expansion	\$ __	\$ __	\$ __
8. K&M Expansions	\$ __	\$ __	\$ __
9. J Expansion	\$ __	\$ __	\$ __
10. L Expansion	\$ __	\$ __	\$ __
Total System Procurement Price	\$ __	\$ __	\$ __

For Table II. Option 1 enter the per-unit cost to equip up to an additional 30 railcars with Proposer’s CBTC System, beyond the 219 railcars included in the price listed on Line 3 of Table I. This per-unit cost shall include costs for both the Equipment, and Contractor’s Services (“Fitting”) supporting the installation.

For Options 2 and 3, refer to Section 2.4.2 and 2.4.3 of the Contract Specifications for a description of the scope of these two options. If the project approach described in the Proposal meets the SFMTA’s requirements without requiring Equipment installed on the Heritage or maintenance Vehicles, enter \$0 for each option, respectively, to indicate no Equipment installation is necessary.

Table II: Pricing for Procurement Options	Unit Price	Maximum Price
1. Option 1. Additional onboard fitment per LRV4 railcar up to a maximum of 30 LRVs (including both Equipment and Services required to equip each LRV)	\$ __ / vehicle	\$ __
2. Option 2. Additional onboard Equipment installation per Heritage streetcar up to a maximum of 50 Vehicles (including Equipment, installation, and Services required to equip each streetcar)	\$ __ / vehicle	\$ __
3. Option 3. Additional onboard Equipment installation per maintenance Vehicle up to a maximum of 30 Vehicles (including Equipment, installation, and Services required to equip each streetcar)	\$ __ / vehicle	\$ __
Total Price of All Options	\$ __	

Appendix F.2

Price Proposal Worksheet for Support

Table III: Support Services Price Proposal	
Enter the price to provide all Support Services identified in the Contract Specifications for the initial Support Term and each of the 5-year options to extend, in 2023 dollars inclusive of all costs, overhead and profit. These fees will be adjusted due to performance, completion of Deployment Phases and RAM Demonstrations, and economic conditions as described in Section B2.2.3 (Monthly Support Fee Calculation) of the Agreement.	
	Total Monthly Support Fee
1. Initial Support Term: 10-year System Support Services	\$ ___ / month
2. Option 4: first 5-year extension for System Support Services	\$ ___ / month
3. Option 5: second 5-year extension for System Support Services	\$ ___ / month

Table IV: Hourly Labor Rates by Positions for Proposer personnel

Fully Burdened Hourly Labor Rates by Positions for Proposer personnel, for each position included in the organizational chart in the Proposal submitted as required by Section IV.C.3.d (Commitment of Qualified Team Personnel), for the purposes of calculating additional design/Software work constituting a change order. Rates subject to escalation as described in Section B2.1.2 (Economic Price Adjustment) of the Sample Agreement. Attach additional pages as necessary.

Position/Classification (Work to be Performed)	Education/ Experience	Hourly Rate
Project Manager	Master of Science, 15 years' experience	\$ ____
Software Engineer	Bachelor of Science, 2 years' experience	\$ ____
Electrical Engineer	Bachelor of Science, 2 years' experience	\$ ____
...	...	\$ ____

Table V: Spare Part Price Sheet

Price sheet for billing Reimbursable Parts under the terms provided in Section B2.3.3 (Reimbursement for Spare Parts) of the Sample Agreement. Rates subject to escalation as described in Section B2.1.2 (Economic Price Adjustment) of the Sample Agreement. Attach additional pages as necessary.

Item	Description	Spare Part Unit Price
1.	On-board train control equipment	n/a
1.1.	LRV4 Light Rail Vehicles on-board equipment	n/a
1.1.1.	Vehicle control unit	\$ ____
1.1.2.	Vehicle event recorder	\$ ____
1.1.3.	Train operator display	\$ ____
1.1.4.	Radio transmission unit	\$ ____
1.1.5.	Radio antenna	\$ ____
1.1.6.	Odometry sensor	\$ ____
1.1.7.	Obstacle detection sensor	\$ ____
1.1.8.	Cables	\$ ____
1.2.	Heritage fleet on-board equipment	n/a
1.2.1.	Vehicle control unit	\$ ____
1.2.2.	Vehicle event recorder	\$ ____
1.2.3.	Train operator display	\$ ____
1.2.4.	Radio transmission unit	\$ ____
1.2.5.	Radio antenna	\$ ____
1.2.6.	Odometry sensor	\$ ____
1.2.7.	Obstacle detection sensor	\$ ____
1.2.8.	Cables	\$ ____
1.3.	Maintenance vehicles on-board equipment	n/a
1.3.1.	Vehicle control unit	\$ ____
1.3.2.	Vehicle event recorder	\$ ____
1.3.3.	Train operator display	\$ ____
1.3.4.	Radio transmission unit	\$ ____

Table V: Spare Part Price Sheet

Price sheet for billing Reimbursable Parts under the terms provided in Section B2.3.3 (Reimbursement for Spare Parts) of the Sample Agreement. Rates subject to escalation as described in Section B2.1.2 (Economic Price Adjustment) of the Sample Agreement. Attach additional pages as necessary.

Item	Description	Spare Part Unit Price
1.3.5.	Radio antenna	\$ ____
1.3.6.	Odometry sensor	\$ ____
1.3.7.	Obstacle detection sensor	\$ ____
1.3.8.	Cables	\$ ____
2.	Central systems equipment	n/a
2.1.	Workstation	\$ ____
2.2.	Server	\$ ____
2.3.	Network equipment	\$ ____
2.4.	Simulators equipment	\$ ____
2.5.	Special tools and test equipment	\$ ____
2.6.	Master Clock	\$ ____
2.7.	Worker Protection System	\$ ____
2.8.	Heating, Ventilation & Air Conditioning equipment	\$ ____
2.9.	Uninterruptible Power Supply equipment	\$ ____
2.10.	Power supplies	\$ ____
2.11.	Brackets, poles, ramps, covers, boxes, cabinets	\$ ____
3.	Station and wayside equipment	n/a
3.1.	Automatic Train Control – Zone Controller	\$ ____
3.2.	Automatic Train Control – Transponder	\$ ____
3.3.	Solid State Interlocking computer	\$ ____
3.4.	Interlocking object controllers	n/a
3.4.1.	Drawbridge controllers	\$ ____
3.4.2.	Freight railroad crossing controller	\$ ____
3.4.3.	Signal controller	\$ ____

Table V: Spare Part Price Sheet

Price sheet for billing Reimbursable Parts under the terms provided in Section B2.3.3 (Reimbursement for Spare Parts) of the Sample Agreement. Rates subject to escalation as described in Section B2.1.2 (Economic Price Adjustment) of the Sample Agreement. Attach additional pages as necessary.

Item	Description	Spare Part Unit Price
3.4.4.	Switch machine controller	\$ ____
3.4.5.	Traffic system controller	\$ ____
3.4.6.	Other object controller	\$ ____
3.5.	Interlocking Local Control Panel	\$ ____
3.6.	Train Depart Local Control Console	\$ ____
3.7.	Automatic Turnback Console	\$ ____
3.8.	Train detection/location device	\$ ____
3.9.	Train signal	\$ ____
3.10.	Switch machine	\$ ____
3.11.	Electric lock for manual switch	\$ ____
3.12.	Train-to-wayside communication unit	\$ ____
3.13.	Train-to-wayside communication antenna	\$ ____
3.14.	Wireless backhaul communication unit	\$ ____
3.15.	Wireless backhaul communication antenna	\$ ____
3.16.	Network switch	\$ ____
3.17.	Heating, Ventilation & Air Conditioning equipment	\$ ____
3.18.	Uninterruptible Power Supply equipment	\$ ____
3.19.	Power supplies	\$ ____
3.20.	Brackets, poles, ramps, covers, boxes, cabinets	\$ ____
...	...	\$ ____

This list of spare parts is not comprehensive and is intended for guidance only. Proposers must develop and adapt this table to the specific components and Line Replaceable Units they offer.

Appendix F.3

System Procurement Cost Components

The estimated costs entered into Tables VI and VII are not additional fees or costs; they are included in the Total System Procurement Price entered into Table I.

For Table VI, SFMTA seeks to understand the relative costs and complexity of customizing Proposers' Systems and the cost of the performance bond. Enter the total cost of Customization into Line 1 and the total cost of providing the performance bonds into Line 2

Table VI: Specific Included Costs	
1. Customization Cost (Cost to customize Proposer's Base Product to meet SFMTA's requirements, inclusive of all the Customizations listed in Appendix K)	\$ __
2. Cost of Providing Performance Bond	\$ __

Table VII

Detailed Cost Breakdown for System Procurement

Table VII contains a generic breakdown of the components which make up the labor and material required to deliver a System which meets the requirements in the Contract Specifications. Enter the costs into each line item in Table VII and sum the line items in the Phase cost. Some top level items are further broken down in subsequent tables.

Enter all costs in USD, including all overhead and profit. The total for each category 1 – 10 should match the totals for line items 1 – 10 entered above in Table I: System Procurement Price Proposal. Add additional lines if necessary to produce a complete breakdown of each Phase cost.

Proposers may move line items in this breakdown between Phases as appropriate to reflect their Project Approach. For example, if equipment listed in this table in Phase 4 would actually be purchased in Phase 2, Contractor may move those items to Phase 2.

At the end of the table, there is also a cost breakdown for Options 2 and 3, the installation of Equipment on the Heritage and Maintenance Vehicles.

1.System Design

Item	Description	Labor Cost	Material Cost	Total Cost
1.1	Conceptual design		n/a	
1.2	Preliminary design		n/a	
1.3	Final design		n/a	
1.4	External interfaces		n/a	
1.5	As-built drawings and documentation		n/a	
1.6	Software licenses until Final Acceptance	n/a		
Total for 1. Design				

1. System Design

1.4. External interfaces

Item	Description	Labor Cost	Material Cost	Total Cost
1.4.1	Video Wall		n/a	
1.4.2	Data warehouse		n/a	
1.4.3	Enterprise Asset Management System (EAMS)		n/a	
1.4.4	Customer Information System		n/a	
1.4.5	OrbCAD		n/a	
1.4.6	Platform Audio Visual signs/announcements		n/a	
1.4.7	Supervisory Control and Data Acquisition (SCADA)		n/a	
1.4.8	Traffic Control System		n/a	
1.4.9	Drawbridges / Freight Crossings		n/a	
1.4.10	Track Intrusion Detection System (TIDS)		n/a	
1.4.11	Other external interfaces (please specify)		n/a	
Total for 1.4. External interfaces			n/a	

* labor cost for developing the interfaces only. Interfacing Equipment – if necessary – shall be listed in cost schedules 2 to 10.

2. Central Equipment, simulators, tools, documentation and training

Item	Description	Labor Cost	Material Cost	Total Cost
2.1	Central systems design		n/a	
2.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
2.3	Central systems Equipment	n/a		
2.4	Tools and simulators	n/a		
2.5	Centralized Maintenance Management System (CMMS)	n/a		
2.6	Network Security System (NSS)	n/a		
2.7	Network Management System (NMS)	n/a		
2.8	Master Clock	n/a		
2.9	Worker Protection System	n/a		
2.10	Inspection, testing, Commissioning		n/a	
2.11	Warranty support, training and documentation		n/a	
2.12	Spares until Conditional Acceptance	n/a		
Total for 2. Central Equipment, simulators, tools, documentation and training				

2. Central Equipment, simulators, tools, documentation and training

2.2. HVAC, power supplies, cables and miscellaneous installation Material

Item	Description	Labor Cost	Material Cost	Total Cost
2.2.1	Heating, Ventilation & Air Conditioning Equipment	n/a		
2.2.2	Uninterruptible Power Supply Equipment	n/a		
2.2.3	Power supplies	n/a		
2.2.4	Power supply cables, signaling cables, and communications cables	n/a		
2.2.5	Cabling pathways and cable termination racks	n/a		
2.2.6	Brackets, poles, ramps, covers, boxes, cabinets	n/a		
2.2.7	Other civil, mechanical, plumbing, communications, and electrical accessories	n/a		
Total for 2.2. HVAC, power supplies, cables and miscellaneous installation Material		n/a		

2. Central Equipment, simulators, tools, documentation and training

2.3. Central systems Equipment

Item	Description	Quantity	Unit Cost	Total Material Cost
2.3.1	Transportation Management Center Theater	7 workstations		
2.3.2	Transportation Management Center Data Center			
2.3.3	Lenox Operations Control Center Theater	7 workstations		
2.3.4	Lenox Operations Control Center Data Center			
2.3.5	Temporary Control Center at 1 S. Van Ness 8th Floor	1 workstation		
2.3.6	700 Pennsylvania Avenue	1 workstation		
2.3.7	Green Yard	1 workstation		
2.3.8	Muni Metro East Yard	1 workstation		
2.3.9	Provision for additional locations	2 workstations		
Total for 2.3. Central systems Equipment		n/a	n/a	

3. On-board Equipment Fitting

Item	Description	Labor Cost	Material Cost	Total Cost
3.1	219 LRV4 Light Rail Vehicles			
Total for 3. On-board Equipment Fitting				

3. On-board Equipment Fitting

3.1. LRV4 Light Rail Vehicles

Item	Description	Quantity	Labor		Material		Total Cost
			Unit Cost	Labor Cost	Unit Cost	Material Cost	
3.1.1	Onboard design and Vehicle integration	1 lot			n/a	n/a	
3.1.2	Cables and brackets	1 lot	n/a	n/a			
3.1.3	Onboard Equipment*	219 Vehicles	n/a	n/a			
3.1.4	Inspection, testing, Commissioning	1 lot			n/a	n/a	
3.1.5	Warranty support, training and documentation	1 lot			n/a	n/a	
3.1.6	Spares until Conditional Acceptance	1 lot	n/a	n/a			
Total for 3.1. LRV4 Light Rail Vehicles							

* please break down the onboard Equipment line item into substantive and identifiable sub-items: Vehicle control units, radio transmission units, odometry sensors, etc.

4. Pilot Phase

Item	Description	Labor Cost	Material Cost	Total Cost
4.1	Design		n/a	
4.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
4.3	Automatic Train Control – Zone Controllers	n/a		
4.4	Automatic Train Control – Transponders	n/a		
4.5	Solid State Interlocking computers	n/a		
4.6	Drawbridge controllers, freight railroad crossing controllers, and other object controllers	n/a		
4.7	Interlocking Local Control Panels	n/a		
4.8	Train Depart Local Control Consoles	n/a		
4.9	Automatic Turnback Consoles	n/a		
4.10	Train detection devices	n/a		
4.11	Train signals	n/a		
4.12	Switch machines	n/a		
4.13	Electric locks for manual switches	n/a		
4.14	Wayside wireless data communication Equipment	n/a		
4.15	Data Communication System – Network switches	n/a		
4.16	Inspection, testing, Commissioning		n/a	
4.17	Warranty support, training and documentation		n/a	
4.18	Spares until Conditional Acceptance	n/a		
Total for 4. Pilot Phase				

4. Pilot Phase

4.3. Automatic Train Control – Zone Controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
4.3.A	Zone Controllers – Folsom & The Embarcadero			
4.3.B	Zone Controllers – Brannan & The Embarcadero			
4.3.C	Zone Controllers – Second St. & King/Ball Park	n/a		
4.3.D	Zone Controllers – Fourth St. & King			
4.3.E	Zone Controllers – Green Yard			
4.3.F	Zone Controllers – Fourth & Brannan			
4.3.G	Zone Controllers – Mission Rock	n/a		
4.3.H	Zone Controllers – UCSF Mission Bay			
4.3.I	Zone Controllers – Mariposa	n/a		
4.3.J	Zone Controllers – 20th St.	n/a		
4.3.K	Zone Controllers – 23rd St.			
4.3.L	Zone Controllers – Muni Metro East Yard			
4.3.M	Zone Controllers – Marin St.			
Total for 4.3. Automatic Train Control – Zone Controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply zone controllers.

4. Pilot Phase

4.4. Automatic Train Control – Transponders

Item	Description	Quantity	Unit Cost	Total Material Cost
4.4.A	Transponders – Folsom & The Embarcadero			
4.4.B	Transponders – Brannan & The Embarcadero			
4.4.C	Transponders – Second St. & King/Ball Park			
4.4.D	Transponders – Fourth St. & King			
4.4.E	Transponders – Green Yard			
4.4.F	Transponders – Fourth & Brannan			
4.4.G	Transponders – Mission Rock			
4.4.H	Transponders – UCSF Mission Bay			
4.4.I	Transponders – Mariposa			
4.4.J	Transponders – 20th St.			
4.4.K	Transponders – 23rd St.			
4.4.L	Transponders – Muni Metro East Yard			
4.4.M	Transponders – Marin St.			
Total for 4.4. Automatic Train Control – Transponders				

Note: enter quantity zero for locations where Proposer does not plan to supply transponders.

4. Pilot Phase

4.5. Solid State Interlocking computers

Item	Description	Quantity	Unit Cost	Total Material Cost
4.5.A	Interlocking – Folsom & The Embarcadero			
4.5.B	Interlocking – Brannan & The Embarcadero			
4.5.C	Interlocking – Second St. & King/Ball Park	n/a		
4.5.D	Interlocking – Fourth St. & King			
4.5.E	Interlocking – Green Yard			
4.5.F	Interlocking – Fourth & Brannan			
4.5.G	Interlocking – Mission Rock			
4.5.H	Interlocking – UCSF Mission Bay			
4.5.I	Interlocking – Mariposa	n/a		
4.5.J	Interlocking – 20th St.	n/a		
4.5.K	Interlocking – 23rd St.			
4.5.L	Interlocking – Muni Metro East Yard			
4.5.M	Interlocking – Marin St.			
Total for 4.5. Solid State Interlocking computers				

Note: enter quantity zero for locations where Proposer does not plan to supply interlocking computers.

4. Pilot Phase

4.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
4.6.A	Object Controllers – Folsom & The Embarcadero			
4.6.B	Object Controllers – Brannan & The Embarcadero			
4.6.C	Object Controllers – Second St. & King/Ball Park	n/a		
4.6.D	Object Controllers – Fourth St. & King			
4.6.E	Object Controllers – Green Yard			
4.6.F	Object Controllers – Fourth & Brannan			
4.6.G	Object Controllers – Mission Rock			
4.6.H	Object Controllers – UCSF Mission Bay			
4.6.I	Object Controllers – Mariposa	n/a		
4.6.J	Object Controllers – 20th St.	n/a		
4.6.K	Object Controllers – 23rd St.			
4.6.L	Object Controllers – Muni Metro East Yard			
4.6.M	Object Controllers – Marin St.			
Total for 4.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply object controllers. Proposer can break down each line item by type of object controller to improve clarity.

4. Pilot Phase

4.7. Interlocking Local Control Panels

Item	Description	Quantity	Unit Cost	Total Material Cost
4.7.A	Local Control Panels (LCP) – Folsom & The Embarcadero	n/a		
4.7.B	Local Control Panels – Brannan & The Embarcadero	n/a		
4.7.C	Local Control Panels – Second St. & King/Ball Park	n/a		
4.7.D	Local Control Panels – Fourth St. & King	1 LCP		
4.7.E	Local Control Panels – Green Yard	n/a		
4.7.F	Local Control Panels – Fourth & Brannan	n/a		
4.7.G	Local Control Panels – Mission Rock	n/a		
4.7.H	Local Control Panels – UCSF Mission Bay	n/a		
4.7.I	Local Control Panels – Mariposa	n/a		
4.7.J	Local Control Panels – 20th St.	n/a		
4.7.K	Local Control Panels – 23rd St.	n/a		
4.7.L	Local Control Panels – Muni Metro East Yard	n/a		
4.7.M	Local Control Panels – Marin St.	n/a		
Total for 4.7. Interlocking Local Control Panels				

4. Pilot Phase

4.8. Train Depart Local Control Consoles

Item	Description	Quantity	Unit Cost	Total Material Cost
4.8.A	Local Control Consoles – Folsom & The Embarcadero	n/a		
4.8.B	Local Control Consoles – Brannan & The Embarcadero	n/a		
4.8.C	Local Control Consoles – Second St. & King/Ball Park	1 LCC		
4.8.D	Local Control Consoles – Fourth St. & King	n/a		
4.8.E	Local Control Consoles – Green Yard	n/a		
4.8.F	Local Control Consoles – Fourth & Brannan	n/a		
4.8.G	Local Control Consoles – Mission Rock	n/a		
4.8.H	Local Control Consoles – UCSF Mission Bay	1 LCC		
4.8.I	Local Control Consoles – Mariposa	n/a		
4.8.J	Local Control Consoles – 20th St.	n/a		
4.8.K	Local Control Consoles – 23rd St.	n/a		
4.8.L	Local Control Consoles – Muni Metro East Yard	n/a		
4.8.M	Local Control Consoles – Marin St.	n/a		
Total for 4.8. Train Depart Local Control Consoles				

4. Pilot Phase

4.10. Train detection devices

Item	Description	Quantity	Unit Cost	Total Material Cost
4.10.A	Train detection devices – Folsom & The Embarcadero			
4.10.B	Train detection devices – Brannan & The Embarcadero			
4.10.C	Train detection devices – Second St. & King/Ball Park			
4.10.D	Train detection devices – Fourth St. & King			
4.10.E	Train detection devices – Green Yard			
4.10.F	Train detection devices – Fourth & Brannan			
4.10.G	Train detection devices – Mission Rock			
4.10.H	Train detection devices – UCSF Mission Bay			
4.10.I	Train detection devices – Mariposa			
4.10.J	Train detection devices – 20th St.			
4.10.K	Train detection devices – 23rd St.			
4.10.L	Train detection devices – Muni Metro East Yard			
4.10.M	Train detection devices – Marin St.			
Total for 4.10. Train detection devices				

Note: enter quantity zero for locations where Proposer does not plan to supply train detection devices.

4. Pilot Phase

4.11. Train signals

Item	Description	Quantity	Unit Cost	Total Material Cost
4.11.A	Signals – Folsom & The Embarcadero			
4.11.B	Signals – Brannan & The Embarcadero			
4.11.C	Signals – Second St. & King/Ball Park			
4.11.D	Signals – Fourth St. & King			
4.11.E	Signals – Green Yard			
4.11.F	Signals – Fourth & Brannan			
4.11.G	Signals – Mission Rock			
4.11.H	Signals – UCSF Mission Bay			
4.11.I	Signals – Mariposa			
4.11.J	Signals – 20th St.			
4.11.K	Signals – 23rd St.			
4.11.L	Signals – Muni Metro East Yard			
4.11.M	Signals – Marin St.			
Total for 4.11. Train signals				

Note: enter quantity zero for locations where Proposer does not plan to supply new train signals.

4. Pilot Phase

4.12. Switch machines

Item	Description	Quantity	Unit Cost	Total Material Cost
4.12.A	Switch machines – Folsom & The Embarcadero			
4.12.B	Switch machines – Brannan & The Embarcadero			
4.12.C	Switch machines – Second St. & King/Ball Park	n/a		
4.12.D	Switch machines – Fourth St. & King			
4.12.E	Switch machines – Green Yard			
4.12.F	Switch machines – Fourth & Brannan			
4.12.G	Switch machines – Mission Rock			
4.12.H	Switch machines – UCSF Mission Bay			
4.12.I	Switch machines – Mariposa	n/a		
4.12.J	Switch machines – 20th St.	n/a		
4.12.K	Switch machines – 23rd St.			
4.12.L	Switch machines – Muni Metro East Yard			
4.12.M	Switch machines – Marin St.			
Total for 4.12. Switch machines				

Note: enter quantity zero for locations where Proposer does not plan to supply new switch machines.

4. Pilot Phase

4.13. Electric locks for manual switches

Item	Description	Quantity	Unit Cost	Total Material Cost
4.13.A	Electric locks – Folsom & The Embarcadero	n/a		
4.13.B	Electric locks – Brannan & The Embarcadero	n/a		
4.13.C	Electric locks – Second St. & King/Ball Park	n/a		
4.13.D	Electric locks – Fourth St. & King	n/a		
4.13.E	Electric locks – Green Yard			
4.13.F	Electric locks – Fourth & Brannan	n/a		
4.13.G	Electric locks – Mission Rock			
4.13.H	Electric locks – UCSF Mission Bay	n/a		
4.13.I	Electric locks – Mariposa	n/a		
4.13.J	Electric locks – 20th St.	n/a		
4.13.K	Electric locks – 23rd St.	n/a		
4.13.L	Electric locks – Muni Metro East Yard			
4.13.M	Electric locks – Marin St.	n/a		
Total for 4.13. Electric locks for manual switches				

Note: enter quantity zero for locations where Proposer does not plan to supply electric locks for manual switches.

4. Pilot Phase

4.14. Wayside wireless data communication Equipment

Item	Description	Quantity	Unit Cost	Total Material Cost
4.14.A	Wireless radios – Folsom & The Embarcadero			
4.14.B	Wireless radios – Brannan & The Embarcadero			
4.14.C	Wireless radios – Second St. & King/Ball Park			
4.14.D	Wireless radios – Fourth St. & King			
4.14.E	Wireless radios – Green Yard			
4.14.F	Wireless radios – Fourth & Brannan			
4.14.G	Wireless radios – Mission Rock			
4.14.H	Wireless radios – UCSF Mission Bay			
4.14.I	Wireless radios – Mariposa			
4.14.J	Wireless radios – 20th St.			
4.14.K	Wireless radios – 23rd St.			
4.14.L	Wireless radios – Muni Metro East Yard			
4.14.M	Wireless radios – Marin St.			
Total for 4.14. Wayside wireless data communication Equipment				

Note: Proposer can break down each line item by type of wireless data communication Equipment to improve clarity.

4. Pilot Phase

4.15. Data Communication System – Network switches

Item	Description	Quantity	Unit Cost	Total Material Cost
4.15.A	Network switches – Folsom & The Embarcadero			
4.15.B	Network switches – Brannan & The Embarcadero			
4.15.C	Network switches – Second St. & King/Ball Park			
4.15.D	Network switches – Fourth St. & King			
4.15.E	Network switches – Green Yard			
4.15.F	Network switches – Fourth & Brannan			
4.15.G	Network switches – Mission Rock			
4.15.H	Network switches – UCSF Mission Bay			
4.15.I	Network switches – Mariposa			
4.15.J	Network switches – 20th St.			
4.15.K	Network switches – 23rd St.			
4.15.L	Network switches – Muni Metro East Yard			
4.15.M	Network switches – Marin St.			
Total for 4.15. Data Communication System – Network switches				

Note: enter quantity zero for locations where Proposer does not plan to supply network switches.

5. Subway Replacement

Item	Description	Labor Cost	Material Cost	Total Cost
5.1	Design		n/a	
5.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
5.3	Automatic Train Control – Zone Controllers	n/a		
5.4	Automatic Train Control – Transponders	n/a		
5.5	Solid State Interlocking computers	n/a		
5.6	Drawbridge controllers, freight railroad crossing controllers, and other object controllers	n/a		
5.7	Interlocking Local Control Panels	n/a		
5.8	Train Depart Local Control Consoles	n/a		
5.9	Automatic Turnback Consoles	n/a		
5.10	Train detection devices	n/a		
5.11	Train signals	n/a		
5.12	Switch machines	n/a		
5.13	Electric locks for manual switches	n/a		
5.14	Wayside wireless data communication Equipment	n/a		
5.15	Data Communication System – Network switches	n/a		
5.16	Inspection, testing, Commissioning		n/a	
5.17	Warranty support, training and documentation		n/a	
5.18	Spares until Conditional Acceptance	n/a		
Total for 5. Subway Replacement				

5. Subway Replacement

5.3. Automatic Train Control – Zone Controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
5.3.A	Zone Controllers – Embarcadero + Muni Metro Turnback			
5.3.B	Zone Controllers – Montgomery	n/a		
5.3.C	Zone Controllers – Union Square / Market Street	n/a		
5.3.D	Zone Controllers – Powell	n/a		
5.3.E	Zone Controllers – Civic Center	n/a		
5.3.F	Zone Controllers – Van Ness			
5.3.G	Zone Controllers – Church			
5.3.H	Zone Controllers – Castro			
5.3.I	Zone Controllers – Forest Hill	n/a		
5.3.J	Zone Controllers – West Portal			
5.3.K	Zone Controllers – Chinatown			
5.3.L	Zone Controllers – Yerba Buena / Moscone	n/a		
Total for 5.3. Automatic Train Control – Zone Controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply zone controllers.

5. Subway Replacement

5.4. Automatic Train Control – Transponders

Item	Description	Quantity	Unit Cost	Total Material Cost
5.4.A	Transponders – Embarcadero + Muni Metro Turnback			
5.4.B	Transponders – Montgomery			
5.4.C	Transponders – Union Square / Market Street			
5.4.D	Transponders – Powell			
5.4.E	Transponders – Civic Center			
5.4.F	Transponders – Van Ness			
5.4.G	Transponders – Church			
5.4.H	Transponders – Castro			
5.4.I	Transponders – Forest Hill			
5.4.J	Transponders – West Portal			
5.4.K	Transponders – Chinatown			
5.4.L	Transponders – Yerba Buena / Moscone			
Total for 5.4. Automatic Train Control – Transponders				

Note: enter quantity zero for locations where Proposer does not plan to supply transponders.

5. Subway Replacement

5.5. Solid State Interlocking computers

Item	Description	Quantity	Unit Cost	Total Material Cost
5.5.A	Interlocking – Embarcadero + Muni Metro Turnback			
5.5.B	Interlocking – Montgomery	n/a		
5.5.C	Interlocking – Union Square / Market Street	n/a		
5.5.D	Interlocking – Powell	n/a		
5.5.E	Interlocking – Civic Center	n/a		
5.5.F	Interlocking – Van Ness			
5.5.G	Interlocking – Church			
5.5.H	Interlocking – Castro			
5.5.I	Interlocking – Forest Hill	n/a		
5.5.J	Interlocking – West Portal			
5.5.K	Interlocking – Chinatown			
5.5.L	Interlocking – Yerba Buena / Moscone	n/a		
Total for 5.5. Solid State Interlocking computers				

Note: enter quantity zero for locations where Proposer does not plan to supply interlocking computers.

5. Subway Replacement

5.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
5.6.A	Object Controllers – Embarcadero + Muni Metro Turnback			
5.6.B	Object Controllers – Montgomery	n/a		
5.6.C	Object Controllers – Union Square / Market Street	n/a		
5.6.D	Object Controllers – Powell	n/a		
5.6.E	Object Controllers – Civic Center	n/a		
5.6.F	Object Controllers – Van Ness			
5.6.G	Object Controllers – Church			
5.6.H	Object Controllers – Castro			
5.6.I	Object Controllers – Forest Hill	n/a		
5.6.J	Object Controllers – West Portal			
5.6.K	Object Controllers – Chinatown			
5.6.L	Object Controllers – Yerba Buena / Moscone	n/a		
Total for 5.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply object controllers. Proposer can break down each line item by type of object controller to improve clarity.

5. Subway Replacement

5.7. Interlocking Local Control Panels

Item	Description	Quantity	Unit Cost	Total Material Cost
5.7.A	Local Control Panels – Embarcadero + Muni Metro Turnback	n/a		
5.7.B	Local Control Panels – Montgomery	n/a		
5.7.C	Local Control Panels – Union Square / Market Street	n/a		
5.7.D	Local Control Panels – Powell	n/a		
5.7.E	Local Control Panels – Civic Center	n/a		
5.7.F	Local Control Panels – Van Ness	n/a		
5.7.G	Local Control Panels – Church	n/a		
5.7.H	Local Control Panels – Castro	n/a		
5.7.I	Local Control Panels – Forest Hill	n/a		
5.7.J	Local Control Panels – West Portal	1 LCP		
5.7.K	Local Control Panels – Chinatown	n/a		
5.7.L	Local Control Panels – Yerba Buena / Moscone	n/a		
Total for 5.7. Interlocking Local Control Panels				

5. Subway Replacement

5.8. Train Depart Local Control Consoles

Item	Description	Quantity	Unit Cost	Total Material Cost
5.8.A	Local Control Consoles – Embarcadero + Muni Metro Turnback	1 LCC		
5.8.B	Local Control Consoles – Montgomery	n/a		
5.8.C	Local Control Consoles – Union Square / Market Street	n/a		
5.8.D	Local Control Consoles – Powell	n/a		
5.8.E	Local Control Consoles – Civic Center	n/a		
5.8.F	Local Control Consoles – Van Ness	n/a		
5.8.G	Local Control Consoles – Church	n/a		
5.8.H	Local Control Consoles – Castro	n/a		
5.8.I	Local Control Consoles – Forest Hill	n/a		
5.8.J	Local Control Consoles – West Portal	n/a		
5.8.K	Local Control Consoles – Chinatown	1 LCC		
5.8.L	Local Control Consoles – Yerba Buena / Moscone	n/a		
Total for 5.8. Train Depart Local Control Consoles				

5. Subway Replacement

5.9. Automatic Turnback Consoles

Item	Description	Quantity	Unit Cost	Total Material Cost
5.9.A	Turnback Console – Embarcadero + Muni Metro Turnback	1 Console		
5.9.B	Turnback Console – Montgomery		n/a	
5.9.C	Turnback Console – Union Square / Market Street		n/a	
5.9.D	Turnback Console – Powell		n/a	
5.9.E	Turnback Console – Civic Center		n/a	
5.9.F	Turnback Console – Van Ness		n/a	
5.9.G	Turnback Console – Church		n/a	
5.9.H	Turnback Console – Castro		n/a	
5.9.I	Turnback Console – Forest Hill		n/a	
5.9.J	Turnback Console – West Portal		n/a	
5.9.K	Turnback Console – Chinatown		n/a	
5.9.L	Turnback Console – Yerba Buena / Moscone		n/a	
Total for 5.9. Automatic Turnback Consoles				

5. Subway Replacement

5.10. Train detection devices

Item	Description	Quantity	Unit Cost	Total Material Cost
5.10.A	Train detection devices – Embarcadero + Muni Metro Turnback			
5.10.B	Train detection devices – Montgomery			
5.10.C	Train detection devices – Union Square / Market Street			
5.10.D	Train detection devices – Powell			
5.10.E	Train detection devices – Civic Center			
5.10.F	Train detection devices – Van Ness			
5.10.G	Train detection devices – Church			
5.10.H	Train detection devices – Castro			
5.10.I	Train detection devices – Forest Hill			
5.10.J	Train detection devices – West Portal			
5.10.K	Train detection devices – Chinatown			
5.10.L	Train detection devices – Yerba Buena / Moscone			
Total for 5.10. Train detection devices				

Note: enter quantity zero for locations where Proposer does not plan to supply train detection devices.

5. Subway Replacement

5.11. Train signals

Item	Description	Quantity	Unit Cost	Total Material Cost
5.11.A	Signals – Embarcadero + Muni Metro Turnback			
5.11.B	Signals – Montgomery			
5.11.C	Signals – Union Square / Market Street			
5.11.D	Signals – Powell			
5.11.E	Signals – Civic Center			
5.11.F	Signals – Van Ness			
5.11.G	Signals – Church			
5.11.H	Signals – Castro			
5.11.I	Signals – Forest Hill			
5.11.J	Signals – West Portal			
5.11.K	Signals – Chinatown			
5.11.L	Signals – Yerba Buena / Moscone			
Total for 5.11. Train signals				

Note: enter quantity zero for locations where Proposer does not plan to supply new train signals.

5. Subway Replacement

5.12. Switch machines

Item	Description	Quantity	Unit Cost	Total Material Cost
5.12.A	Switch machines – Embarcadero + Muni Metro Turnback			
5.12.B	Switch machines – Montgomery	n/a		
5.12.C	Switch machines – Union Square / Market Street	n/a		
5.12.D	Switch machines – Powell	n/a		
5.12.E	Switch machines – Civic Center	n/a		
5.12.F	Switch machines – Van Ness			
5.12.G	Switch machines – Church			
5.12.H	Switch machines – Castro			
5.12.I	Switch machines – Forest Hill	n/a		
5.12.J	Switch machines – West Portal			
5.12.K	Switch machines – Chinatown			
5.12.L	Switch machines – Yerba Buena / Moscone	n/a		
Total for 5.12. Switch machines				

Note: enter quantity zero for locations where Proposer does not plan to supply new switch machines.

5. Subway Replacement

5.13. Electric locks for manual switches

Item	Description	Quantity	Unit Cost	Total Material Cost
5.13.A	Electric locks – Embarcadero + Muni Metro Turnback		n/a	
5.13.B	Electric locks – Montgomery		n/a	
5.13.C	Electric locks – Union Square / Market Street		n/a	
5.13.D	Electric locks – Powell		n/a	
5.13.E	Electric locks – Civic Center		n/a	
5.13.F	Electric locks – Van Ness		n/a	
5.13.G	Electric locks – Church			
5.13.H	Electric locks – Castro		n/a	
5.13.I	Electric locks – Forest Hill		n/a	
5.13.J	Electric locks – West Portal		n/a	
5.13.K	Electric locks – Chinatown		n/a	
5.13.L	Electric locks – Yerba Buena / Moscone		n/a	
Total for 5.13. Electric locks for manual switches				

Note: enter quantity zero for locations where Proposer does not plan to supply electric locks for manual switches.

5. Subway

5.14. Wayside wireless data communication Equipment

Item	Description	Quantity	Unit Cost	Total Material Cost
5.14.A	Wireless radios – Embarcadero + Muni Metro Turnback			
5.14.B	Wireless radios – Montgomery			
5.14.C	Wireless radios – Union Square / Market Street			
5.14.D	Wireless radios – Powell			
5.14.E	Wireless radios – Civic Center			
5.14.F	Wireless radios – Van Ness			
5.14.G	Wireless radios – Church			
5.14.H	Wireless radios – Castro			
5.14.I	Wireless radios – Forest Hill			
5.14.J	Wireless radios – West Portal			
5.14.K	Wireless radios – Chinatown			
5.14.L	Wireless radios – Yerba Buena / Moscone			
Total for 5.14. Wayside wireless data communication Equipment				

Note: Proposer can break down each line item by type of wireless data communication Equipment to improve clarity.

5. Subway Replacement

5.15. Data Communication System – Network switches

Item	Description	Quantity	Unit Cost	Total Material Cost
5.15.A	Network switches – Embarcadero + Muni Metro Turnback			
5.15.B	Network switches – Montgomery			
5.15.C	Network switches – Union Square / Market Street			
5.15.D	Network switches – Powell			
5.15.E	Network switches – Civic Center			
5.15.F	Network switches – Van Ness			
5.15.G	Network switches – Church			
5.15.H	Network switches – Castro			
5.15.I	Network switches – Forest Hill			
5.15.J	Network switches – West Portal			
5.15.K	Network switches – Chinatown			
5.15.L	Network switches – Yerba Buena / Moscone			
Total for 5.15. Data Communication System – Network switches				

Note: enter quantity zero for locations where Proposer does not plan to supply network switches.

6. N Expansion

Item	Description	Labor Cost	Material Cost	Total Cost
6.1	Design		n/a	
6.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
6.3	Automatic Train Control – Zone Controllers	n/a		
6.4	Automatic Train Control – Transponders	n/a		
6.5	Solid State Interlocking computers	n/a		
6.6	Drawbridge controllers, freight railroad crossing controllers, and other object controllers	n/a		
6.7	Interlocking Local Control Panels	n/a		
6.8	Train Depart Local Control Consoles	n/a		
6.9	Automatic Turnback Consoles	n/a		
6.10	Train detection devices	n/a		
6.11	Train signals	n/a		
6.12	Switch machines	n/a		
6.13	Electric locks for manual switches	n/a		
6.14	Wayside wireless data communication Equipment	n/a		
6.15	Data Communication System – Network switches	n/a		
6.16	Inspection, testing, Commissioning		n/a	
6.17	Warranty support, training and documentation		n/a	
6.18	Spares until Conditional Acceptance	n/a		
Total for 6. N Expansion				

6. N Expansion

6.3. Automatic Train Control – Zone Controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
6.3.A	Zone Controllers – Ocean Beach	n/a		
6.3.B	Zone Controllers – Judah & Sunset	n/a		
6.3.C	Zone Controllers – Judah & 19th Av.			
6.3.D	Zone Controllers – Judah & 9th Av.	n/a		
6.3.E	Zone Controllers – UCSF Parnassus	n/a		
6.3.F	Zone Controllers – Carl & Cole	n/a		
6.3.G	Zone Controllers – Duboce & Noe	n/a		
6.3.H	Zone Controllers – Duboce & Church			
Total for 6.3. Automatic Train Control – Zone Controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply zone controllers.

6. N Expansion

6.4. Automatic Train Control – Transponders

Item	Description	Quantity	Unit Cost	Total Material Cost
6.4.A	Transponders – Ocean Beach			
6.4.B	Transponders – Judah & Sunset			
6.4.C	Transponders – Judah & 19th Av.			
6.4.D	Transponders – Judah & 9th Av.			
6.4.E	Transponders – UCSF Parnassus			
6.4.F	Transponders – Carl & Cole			
6.4.G	Transponders – Duboce & Noe			
6.4.H	Transponders – Duboce & Church			
Total for 6.4. Automatic Train Control – Transponders				

Note: enter quantity zero for locations where Proposer does not plan to supply transponders.

6. N Expansion

6.5. Solid State Interlocking computers

Item	Description	Quantity	Unit Cost	Total Material Cost
6.5.A	Interlocking – Ocean Beach			
6.5.B	Interlocking – Judah & Sunset			
6.5.C	Interlocking – Judah & 19th Av.			
6.5.D	Interlocking – Judah & 9th Av.	n/a		
6.5.E	Interlocking – UCSF Parnassus			
6.5.F	Interlocking – Carl & Cole	n/a		
6.5.G	Interlocking – Duboce & Noe	n/a		
6.5.H	Interlocking – Duboce & Church			
Total for 6.5. Solid State Interlocking computers				

Note: enter quantity zero for locations where Proposer does not plan to supply interlocking computers.

6. N Expansion

6.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
6.6.A	Object Controllers – Ocean Beach			
6.6.B	Object Controllers – Judah & Sunset			
6.6.C	Object Controllers – Judah & 19th Av.			
6.6.D	Object Controllers – Judah & 9th Av.	n/a		
6.6.E	Object Controllers – UCSF Parnassus			
6.6.F	Object Controllers – Carl & Cole	n/a		
6.6.G	Object Controllers – Duboce & Noe	n/a		
6.6.H	Object Controllers – Duboce & Church			
Total for 6.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply object controllers. Proposer can break down each line item by type of object controller to improve clarity.

6. N Expansion

6.7. Interlocking Local Control Panels

Item	Description	Quantity	Unit Cost	Total Material Cost
6.7.A	Local Control Panels – Ocean Beach	n/a		
6.7.B	Local Control Panels – Judah & Sunset	n/a		
6.7.C	Local Control Panels – Judah & 19th Av.	n/a		
6.7.D	Local Control Panels – Judah & 9th Av.	n/a		
6.7.E	Local Control Panels – UCSF Parnassus	n/a		
6.7.F	Local Control Panels – Carl & Cole	n/a		
6.7.G	Local Control Panels – Duboce & Noe	n/a		
6.7.H	Local Control Panels – Duboce & Church	1 LCP		
Total for 6.7. Interlocking Local Control Panels				

6. N Expansion

6.10. Train detection devices

Item	Description	Quantity	Unit Cost	Total Material Cost
6.10.A	Train detection devices – Ocean Beach			
6.10.B	Train detection devices – Judah & Sunset			
6.10.C	Train detection devices – Judah & 19th Av.			
6.10.D	Train detection devices – Judah & 9th Av.			
6.10.E	Train detection devices – UCSF Parnassus			
6.10.F	Train detection devices – Carl & Cole			
6.10.G	Train detection devices – Duboce & Noe			
6.10.H	Train detection devices – Duboce & Church			
Total for 6.10. Train detection devices				

Note: enter quantity zero for locations where Proposer does not plan to supply train detection devices.

6. N Expansion

6.11. Train signals

Item	Description	Quantity	Unit Cost	Total Material Cost
6.11.A	Signals – Ocean Beach			
6.11.B	Signals – Judah & Sunset			
6.11.C	Signals – Judah & 19th Av.			
6.11.D	Signals – Judah & 9th Av.			
6.11.E	Signals – UCSF Parnassus			
6.11.F	Signals – Carl & Cole			
6.11.G	Signals – Duboce & Noe			
6.11.H	Signals – Duboce & Church			
Total for 6.11. Train signals				

Note: enter quantity zero for locations where Proposer does not plan to supply new train signals.

6. N Expansion

6.12. Switch machines

Item	Description	Quantity	Unit Cost	Total Material Cost
6.12.A	Switch machines – Ocean Beach			
6.12.B	Switch machines – Judah & Sunset			
6.12.C	Switch machines – Judah & 19th Av.			
6.12.D	Switch machines – Judah & 9th Av.	n/a		
6.12.E	Switch machines – UCSF Parnassus			
6.12.F	Switch machines – Carl & Cole	n/a		
6.12.G	Switch machines – Duboce & Noe	n/a		
6.12.H	Switch machines – Duboce & Church			
Total for 6.12. Switch machines				

Note: enter quantity zero for locations where Proposer does not plan to supply new switch machines.

6. N Expansion

6.13. Electric locks for manual switches

Item	Description	Quantity	Unit Cost	Total Material Cost
6.13.A	Electric locks – Ocean Beach			
6.13.B	Electric locks – Judah & Sunset			
6.13.C	Electric locks – Judah & 19th Av.	n/a		
6.13.D	Electric locks – Judah & 9th Av.	n/a		
6.13.E	Electric locks – UCSF Parnassus			
6.13.F	Electric locks – Carl & Cole	n/a		
6.13.G	Electric locks – Duboce & Noe	n/a		
6.13.H	Electric locks – Duboce & Church	n/a		
Total for 6.13. Electric locks for manual switches				

Note: enter quantity zero for locations where Proposer does not plan to supply electric locks for manual switches.

6. N Expansion

6.14. Wayside wireless data communication Equipment

	Description	Quantity	Unit Cost	Total Material Cost
6.14.A	Wireless radios – Ocean Beach			
6.14.B	Wireless radios – Judah & Sunset			
6.14.C	Wireless radios – Judah & 19th Av.			
6.14.D	Wireless radios – Judah & 9th Av.			
6.14.E	Wireless radios – UCSF Parnassus			
6.14.F	Wireless radios – Carl & Cole			
6.14.G	Wireless radios – Duboce & Noe			
6.14.H	Wireless radios – Duboce & Church			
Total for 6.14. Wayside wireless data communication Equipment				

Note: Proposer can break down each line item by type of wireless data communication Equipment to improve clarity.

6. N Expansion

6.15. Data Communication System – Network switches

Item	Description	Quantity	Unit Cost	Total Material Cost
6.15.A	Network switches – Ocean Beach			
6.15.B	Network switches – Judah & Sunset			
6.15.C	Network switches – Judah & 19th Av.			
6.15.D	Network switches – Judah & 9th Av.			
6.15.E	Network switches – UCSF Parnassus			
6.15.F	Network switches – Carl & Cole			
6.15.G	Network switches – Duboce & Noe			
6.15.H	Network switches – Duboce & Church			
Total for 6.15. Data Communication System – Network switches				

Note: enter quantity zero for locations where Proposer does not plan to supply network switches.

7. T Expansion

Item	Description	Labor Cost	Material Cost	Total Cost
7.1	Design		n/a	
7.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
7.3	Automatic Train Control – Zone Controllers	n/a		
7.4	Automatic Train Control – Transponders	n/a		
7.5	Solid State Interlocking computers	n/a		
7.6	Drawbridge controllers, freight railroad crossing controllers, and other object controllers	n/a		
7.7	Interlocking Local Control Panels	n/a		
7.8	Train Depart Local Control Consoles	n/a		
7.9	Automatic Turnback Consoles	n/a		
7.10	Train detection devices	n/a		
7.11	Train signals	n/a		
7.12	Switch machines	n/a		
7.13	Electric locks for manual switches	n/a		
7.14	Wayside wireless data communication Equipment	n/a		
7.15	Data Communication System – Network switches	n/a		
7.16	Inspection, testing, Commissioning		n/a	
7.17	Warranty support, training and documentation		n/a	
7.18	Spares until Conditional Acceptance	n/a		
Total for 7. T Expansion				

7. T Expansion

7.3. Automatic Train Control – Zone Controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
7.3.A	Zone Controllers – Evans		n/a	
7.3.B	Zone Controllers – Hudson/Innes		n/a	
7.3.C	Zone Controllers – Kirkwood/La Salle		n/a	
7.3.D	Zone Controllers – Revere/Shafter		n/a	
7.3.E	Zone Controllers – Oakdale/Palou		n/a	
7.3.F	Zone Controllers – Williams		n/a	
7.3.G	Zone Controllers – Carroll		n/a	
7.3.H	Zone Controllers – Gilman/Paul		n/a	
7.3.I	Zone Controllers – Le Conte		n/a	
7.3.J	Zone Controllers – Arleta		n/a	
7.3.K	Zone Controllers – Sunnydale			
Total for 7.3. Automatic Train Control – Zone Controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply zone controllers.

7. T Expansion

7.4. Automatic Train Control – Transponders

Item	Description	Quantity	Unit Cost	Total Material Cost
7.4.A	Transponders – Evans			
7.4.B	Transponders – Hudson/Innes			
7.4.C	Transponders – Kirkwood/La Salle			
7.4.D	Transponders – Revere/Shafter			
7.4.E	Transponders – Oakdale/Palou			
7.4.F	Transponders – Williams			
7.4.G	Transponders – Carroll			
7.4.H	Transponders – Gilman/Paul			
7.4.I	Transponders – Le Conte			
7.4.J	Transponders – Arleta			
7.4.K	Transponders – Sunnydale			
Total for 7.4. Automatic Train Control – Transponders				

Note: enter quantity zero for locations where Proposer does not plan to supply transponders.

7. T Expansion

7.5. Solid State Interlocking computers

Item	Description	Quantity	Unit Cost	Total Material Cost
7.5.A	Interlocking – Evans			
7.5.B	Interlocking – Hudson/Innes	n/a		
7.5.C	Interlocking – Kirkwood/La Salle	n/a		
7.5.D	Interlocking – Revere/Shafter	n/a		
7.5.E	Interlocking – Oakdale/Palou	n/a		
7.5.F	Interlocking – Williams			
7.5.G	Interlocking – Carroll	n/a		
7.5.H	Interlocking – Gilman/Paul	n/a		
7.5.I	Interlocking – Le Conte	n/a		
7.5.J	Interlocking – Arleta	n/a		
7.5.K	Interlocking – Sunnydale			
Total for 7.5. Solid State Interlocking computers				

Note: enter quantity zero for locations where Proposer does not plan to supply interlocking computers.

7. T Expansion

7.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
7.6.A	Object Controllers – Evans			
7.6.B	Object Controllers – Hudson/Innes	n/a		
7.6.C	Object Controllers – Kirkwood/La Salle	n/a		
7.6.D	Object Controllers – Revere/Shafter	n/a		
7.6.E	Object Controllers – Oakdale/Palou	n/a		
7.6.F	Object Controllers – Williams			
7.6.G	Object Controllers – Carroll	n/a		
7.6.H	Object Controllers – Gilman/Paul	n/a		
7.6.I	Object Controllers – Le Conte	n/a		
7.6.J	Object Controllers – Arleta	n/a		
7.6.K	Object Controllers – Sunnydale			
Total for 7.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply object controllers. Proposer can break down each line item by type of object controller to improve clarity.

7. T Expansion

7.7. Interlocking Local Control Panels

Item	Description	Quantity	Unit Cost	Total Material Cost
7.7.A	Local Control Panels – Evans		n/a	
7.7.B	Local Control Panels – Hudson/Innes		n/a	
7.7.C	Local Control Panels – Kirkwood/La Salle		n/a	
7.7.D	Local Control Panels – Revere/Shafter		n/a	
7.7.E	Local Control Panels – Oakdale/Palou		n/a	
7.7.F	Local Control Panels – Williams		n/a	
7.7.G	Local Control Panels – Carroll		n/a	
7.7.H	Local Control Panels – Gilman/Paul		n/a	
7.7.I	Local Control Panels – Le Conte		n/a	
7.7.J	Local Control Panels – Arleta		n/a	
7.7.K	Local Control Panels – Sunnydale	1 LCP		
Total for 7.7. Interlocking Local Control Panels				

7. T Expansion

7.10. Train detection devices

Item	Description	Quantity	Unit Cost	Total Material Cost
7.10.A	Train detection devices – Evans			
7.10.B	Train detection devices – Hudson/Innes			
7.10.C	Train detection devices – Kirkwood/La Salle			
7.10.D	Train detection devices – Revere/Shafter			
7.10.E	Train detection devices – Oakdale/Palou			
7.10.F	Train detection devices – Williams			
7.10.G	Train detection devices – Carroll			
7.10.H	Train detection devices – Gilman/Paul			
7.10.I	Train detection devices – Le Conte			
7.10.J	Train detection devices – Arleta			
7.10.K	Train detection devices – Sunnydale			
Total for 7.10. Train detection devices				

Note: enter quantity zero for locations where Proposer does not plan to supply train detection devices.

7. T Expansion

7.11. Train signals

Item	Description	Quantity	Unit Cost	Total Material Cost
7.11.A	Signals – Evans			
7.11.B	Signals – Hudson/Innes			
7.11.C	Signals – Kirkwood/La Salle			
7.11.D	Signals – Revere/Shafter			
7.11.E	Signals – Oakdale/Palou			
7.11.F	Signals – Williams			
7.11.G	Signals – Carroll			
7.11.H	Signals – Gilman/Paul			
7.11.I	Signals – Le Conte			
7.11.J	Signals – Arleta			
7.11.K	Signals – Sunnydale			
Total for 7.11. Train signals				

Note: enter quantity zero for locations where Proposer does not plan to supply new train signals.

7. T Expansion

7.12. Switch machines

Item	Description	Quantity	Unit Cost	Total Material Cost
7.12.A	Switch machines – Evans			
7.12.B	Switch machines – Hudson/Innes	n/a		
7.12.C	Switch machines – Kirkwood/La Salle	n/a		
7.12.D	Switch machines – Revere/Shafter	n/a		
7.12.E	Switch machines – Oakdale/Palou	n/a		
7.12.F	Switch machines – Williams			
7.12.G	Switch machines – Carroll	n/a		
7.12.H	Switch machines – Gilman/Paul	n/a		
7.12.I	Switch machines – Le Conte	n/a		
7.12.J	Switch machines – Arleta	n/a		
7.12.K	Switch machines – Sunnydale			
Total for 7.12. Switch machines				

Note: enter quantity zero for locations where Proposer does not plan to supply new switch machines.

7. T Expansion

7.13. Electric locks for manual switches

Item	Description	Quantity	Unit Cost	Total Material Cost
7.13.A	Electric locks – Evans			
7.13.B	Electric locks – Hudson/Innes	n/a		
7.13.C	Electric locks – Kirkwood/La Salle	n/a		
7.13.D	Electric locks – Revere/Shafter	n/a		
7.13.E	Electric locks – Oakdale/Palou	n/a		
7.13.F	Electric locks – Williams			
7.13.G	Electric locks – Carroll	n/a		
7.13.H	Electric locks – Gilman/Paul	n/a		
7.13.I	Electric locks – Le Conte	n/a		
7.13.J	Electric locks – Arleta	n/a		
7.13.K	Electric locks – Sunnydale			
Total for 7.13. Electric locks for manual switches				

Note: enter quantity zero for locations where Proposer does not plan to supply electric locks for manual switches.

7. T Expansion

7.14. Wayside wireless data communication Equipment

Item	Description	Quantity	Unit Cost	Total Material Cost
7.14.A	Wireless radios – Evans			
7.14.B	Wireless radios – Hudson/Innes			
7.14.C	Wireless radios – Kirkwood/La Salle			
7.14.D	Wireless radios – Revere/Shafter			
7.14.E	Wireless radios – Oakdale/Palou			
7.14.F	Wireless radios – Williams			
7.14.G	Wireless radios – Carroll			
7.14.H	Wireless radios – Gilman/Paul			
7.14.I	Wireless radios – Le Conte			
7.14.J	Wireless radios – Arleta			
7.14.K	Wireless radios – Sunnydale			
Total for 7.14. Wayside wireless data communication Equipment				

Note: Proposer can break down each line item by type of wireless data communication Equipment to improve clarity.

7. T Expansion

7.15. Data Communication System – Network switches

Item	Description	Quantity	Unit Cost	Total Material Cost
7.15.A	Network switches – Evans			
7.15.B	Network switches – Hudson/Innes			
7.15.C	Network switches – Kirkwood/La Salle			
7.15.D	Network switches – Revere/Shafter			
7.15.E	Network switches – Oakdale/Palou			
7.15.F	Network switches – Williams			
7.15.G	Network switches – Carroll			
7.15.H	Network switches – Gilman/Paul			
7.15.I	Network switches – Le Conte			
7.15.J	Network switches – Arleta			
7.15.K	Network switches – Sunnydale			
Total for 7.15. Data Communication System – Network switches				

Note: enter quantity zero for locations where Proposer does not plan to supply network switches.

8. K&M Expansions

Item	Description	Labor Cost	Material Cost	Total Cost
8.1	Design		n/a	
8.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
8.3	Automatic Train Control – Zone Controllers	n/a		
8.4	Automatic Train Control – Transponders	n/a		
8.5	Solid State Interlocking computers	n/a		
8.6	Drawbridge controllers, freight railroad crossing controllers, and other object controllers	n/a		
8.7	Interlocking Local Control Panels	n/a		
8.8	Train Depart Local Control Consoles	n/a		
8.9	Automatic Turnback Consoles	n/a		
8.10	Train detection devices	n/a		
8.11	Train signals	n/a		
8.12	Switch machines	n/a		
8.13	Electric locks for manual switches	n/a		
8.14	Wayside wireless data communication Equipment	n/a		
8.15	Data Communication System – Network switches	n/a		
8.16	Inspection, testing, Commissioning		n/a	
8.17	Warranty support, training and documentation		n/a	
8.18	Spares until Conditional Acceptance	n/a		
Total for 8. K&M Expansions				

8. K&M Expansions

8.3. Automatic Train Control – Zone Controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
8.3.A	Zone Controllers – St. Francis Circle			
8.3.B	Zone Controllers – Stonestown	n/a		
8.3.C	Zone Controllers – SF State	n/a		
8.3.D	Zone Controllers – Randolph & Arch	n/a		
8.3.E	Zone Controllers – Broad & Plymouth	n/a		
8.3.F	Zone Controllers – San Jose & Geneva			
8.3.G	Zone Controllers – Balboa Park			
8.3.H	Zone Controllers – City College			
8.3.I	Zone Controllers – Ocean & Jules	n/a		
8.3.J	Zone Controllers – Junipero Serra & Ocean	n/a		
Total for 8.3. Automatic Train Control – Zone Controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply zone controllers.

8. K&M Expansions

8.4. Automatic Train Control – Transponders

Item	Description	Quantity	Unit Cost	Total Material Cost
8.4.A	Transponders – St. Francis Circle			
8.4.B	Transponders – Stonestown			
8.4.C	Transponders – SF State			
8.4.D	Transponders – Randolph & Arch			
8.4.E	Transponders – Broad & Plymouth			
8.4.F	Transponders – San Jose & Geneva			
8.4.G	Transponders – Balboa Park			
8.4.H	Transponders – City College			
8.4.I	Transponders – Ocean & Jules			
8.4.J	Transponders – Junipero Serra & Ocean			
Total for 8.4. Automatic Train Control – Transponders				

Note: enter quantity zero for locations where Proposer does not plan to supply transponders.

8. K&M Expansions

8.5. Solid State Interlocking computers

Item	Description	Quantity	Unit Cost	Total Material Cost
8.5.A	Interlocking – St. Francis Circle			
8.5.B	Interlocking – Stonestown	n/a		
8.5.C	Interlocking – SF State			
8.5.D	Interlocking – Randolph & Arch	n/a		
8.5.E	Interlocking – Broad & Plymouth			
8.5.F	Interlocking – San Jose & Geneva			
8.5.G	Interlocking – Balboa Park			
8.5.H	Interlocking – City College			
8.5.I	Interlocking – Ocean & Jules	n/a		
8.5.J	Interlocking – Junipero Serra & Ocean			
Total for 8.5. Solid State Interlocking computers				

Note: enter quantity zero for locations where Proposer does not plan to supply interlocking computers.

8. K&M Expansions

8.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
8.6.A	Object Controllers – St. Francis Circle			
8.6.B	Object Controllers – Stonestown	n/a		
8.6.C	Object Controllers – SF State			
8.6.D	Object Controllers – Randolph & Arch	n/a		
8.6.E	Object Controllers – Broad & Plymouth			
8.6.F	Object Controllers – San Jose & Geneva			
8.6.G	Object Controllers – Balboa Park			
8.6.H	Object Controllers – City College			
8.6.I	Object Controllers – Ocean & Jules	n/a		
8.6.J	Object Controllers – Junipero Serra & Ocean			
Total for 8.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply object controllers. Proposer can break down each line item by type of object controller to improve clarity.

8. K&M Expansions

8.10. Train detection devices

Item	Description	Quantity	Unit Cost	Total Material Cost
8.10.A	Train detection devices – St. Francis Circle			
8.10.B	Train detection devices – Stonestown			
8.10.C	Train detection devices – SF State			
8.10.D	Train detection devices – Randolph & Arch			
8.10.E	Train detection devices – Broad & Plymouth			
8.10.F	Train detection devices – San Jose & Geneva			
8.10.G	Train detection devices – Balboa Park			
8.10.H	Train detection devices – City College			
8.10.I	Train detection devices – Ocean & Jules			
8.10.J	Train detection devices – Junipero Serra & Ocean			
Total for 8.10. Train detection devices				

Note: enter quantity zero for locations where Proposer does not plan to supply train detection devices.

8. K&M Expansions

8.11. Train signals

Item	Description	Quantity	Unit Cost	Total Material Cost
8.11.A	Signals – St. Francis Circle			
8.11.B	Signals – Stonestown			
8.11.C	Signals – SF State			
8.11.D	Signals – Randolph & Arch			
8.11.E	Signals – Broad & Plymouth			
8.11.F	Signals – San Jose & Geneva			
8.11.G	Signals – Balboa Park			
8.11.H	Signals – City College			
8.11.I	Signals – Ocean & Jules			
8.11.J	Signals – Junipero Serra & Ocean			
Total for 8.11. Train signals				

Note: enter quantity zero for locations where Proposer does not plan to supply new train signals.

8. K&M Expansions

8.12. Switch machines

Item	Description	Quantity	Unit Cost	Total Material Cost
8.12.A	Switch machines – St. Francis Circle			
8.12.B	Switch machines – Stonestown	n/a		
8.12.C	Switch machines – SF State			
8.12.D	Switch machines – Randolph & Arch	n/a		
8.12.E	Switch machines – Broad & Plymouth			
8.12.F	Switch machines – San Jose & Geneva			
8.12.G	Switch machines – Balboa Park			
8.12.H	Switch machines – City College			
8.12.I	Switch machines – Ocean & Jules	n/a		
8.12.J	Switch machines – Junipero Serra & Ocean			
Total for 8.12. Switch machines				

Note: enter quantity zero for locations where Proposer does not plan to supply new switch machines.

8. K&M Expansions

8.13. Electric locks for manual switches

Item	Description	Quantity	Unit Cost	Total Material Cost
8.13.A	Electric locks – St. Francis Circle	n/a		
8.13.B	Electric locks – Stonestown	n/a		
8.13.C	Electric locks – SF State			
8.13.D	Electric locks – Randolph & Arch	n/a		
8.13.E	Electric locks – Broad & Plymouth			
8.13.F	Electric locks – San Jose & Geneva	n/a		
8.13.G	Electric locks – Balboa Park	n/a		
8.13.H	Electric locks – City College	n/a		
8.13.I	Electric locks – Ocean & Jules	n/a		
8.13.J	Electric locks – Junipero Serra & Ocean			
Total for 8.13. Electric locks for manual switches				

Note: enter quantity zero for locations where Proposer does not plan to supply electric locks for manual switches.

8. K&M Expansions

8.14. Wayside wireless data communication Equipment

Item	Description	Quantity	Unit Cost	Total Material Cost
8.14.A	Wireless radios – St. Francis Circle			
8.14.B	Wireless radios – Stonestown			
8.14.C	Wireless radios – SF State			
8.14.D	Wireless radios – Randolph & Arch			
8.14.E	Wireless radios – Broad & Plymouth			
8.14.F	Wireless radios – San Jose & Geneva			
8.14.G	Wireless radios – Balboa Park			
8.14.H	Wireless radios – City College			
8.14.I	Wireless radios – Ocean & Jules			
8.14.J	Wireless radios – Junipero Serra & Ocean			
Total for 8.14. Wayside wireless data communication Equipment				

Note: Proposer can break down each line item by type of wireless data communication Equipment to improve clarity.

8. K&M Expansions

8.15. Data Communication System – Network switches

Item	Description	Quantity	Unit Cost	Total Material Cost
8.15.A	Network switches – St. Francis Circle			
8.15.B	Network switches – Stonestown			
8.15.C	Network switches – SF State			
8.15.D	Network switches – Randolph & Arch			
8.15.E	Network switches – Broad & Plymouth			
8.15.F	Network switches – San Jose & Geneva			
8.15.G	Network switches – Balboa Park			
8.15.H	Network switches – City College			
8.15.I	Network switches – Ocean & Jules			
8.15.J	Network switches – Junipero Serra & Ocean			
Total for 8.15. Data Communication System – Network switches				

Note: enter quantity zero for locations where Proposer does not plan to supply network switches.

9. J Expansion

Item	Description	Labor Cost	Material Cost	Total Cost
9.1	Design		n/a	
9.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
9.3	Automatic Train Control – Zone Controllers	n/a		
9.4	Automatic Train Control – Transponders	n/a		
9.5	Solid State Interlocking computers	n/a		
9.6	Drawbridge controllers, freight railroad crossing controllers, and other object controllers	n/a		
9.7	Interlocking Local Control Panels	n/a		
9.8	Train Depart Local Control Consoles	n/a		
9.9	Automatic Turnback Consoles	n/a		
9.10	Train detection devices	n/a		
9.11	Train signals	n/a		
9.12	Switch machines	n/a		
9.13	Electric locks for manual switches	n/a		
9.14	Wayside wireless data communication Equipment	n/a		
9.15	Data Communication System – Network switches	n/a		
9.16	Inspection, testing, Commissioning		n/a	
9.17	Warranty support, training and documentation		n/a	
9.18	Spares until Conditional Acceptance	n/a		
Total for 9. J Expansion				

9. J Expansion

9.3. Automatic Train Control – Zone Controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
9.3.A	Zone Controllers – Church & 18th St.			
9.3.B	Zone Controllers – Church & 24th St.	n/a		
9.3.C	Zone Controllers – Church & 30th St.			
9.3.D	Zone Controllers – San Jose & Randall	n/a		
Total for 9.3. Automatic Train Control – Zone Controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply zone controllers.

9. J Expansion

9.4. Automatic Train Control – Transponders

Item	Description	Quantity	Unit Cost	Total Material Cost
9.4.A	Transponders – Church & 18th St.			
9.4.B	Transponders – Church & 24th St.			
9.4.C	Transponders – Church & 30th St.			
9.4.D	Transponders – San Jose & Randall			
Total for 9.4. Automatic Train Control – Transponders				

Note: enter quantity zero for locations where Proposer does not plan to supply transponders.

9. J Expansion

9.5. Solid State Interlocking computers

Item	Description	Quantity	Unit Cost	Total Material Cost
9.5.A	Interlocking – Church & 18th St.			
9.5.B	Interlocking – Church & 24th St.			
9.5.C	Interlocking – Church & 30th St.			
9.5.D	Interlocking – San Jose & Randall	n/a		
Total for 9.5. Solid State Interlocking computers				

Note: enter quantity zero for locations where Proposer does not plan to supply interlocking computers.

9. J Expansion

9.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
9.6.A	Object Controllers – Church & 18th St.			
9.6.B	Object Controllers – Church & 24th St.			
9.6.C	Object Controllers – Church & 30th St.			
9.6.D	Object Controllers – San Jose & Randall	n/a		
Total for 9.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply object controllers. Proposer can break down each line item by type of object controller to improve clarity.

9. J Expansion

9.10. Train detection devices

Item	Description	Quantity	Unit Cost	Total Material Cost
9.10.A	Train detection devices – Church & 18th St.			
9.10.B	Train detection devices – Church & 24th St.			
9.10.C	Train detection devices – Church & 30th St.			
9.10.D	Train detection devices – San Jose & Randall			
Total for 9.10. Train detection devices				

Note: enter quantity zero for locations where Proposer does not plan to supply train detection devices.

9. J Expansion

9.11. Train signals

Item	Description	Quantity	Unit Cost	Total Material Cost
9.11.A	Signals – Church & 18th St.			
9.11.B	Signals – Church & 24th St.			
9.11.C	Signals – Church & 30th St.			
9.11.D	Signals – San Jose & Randall			
Total for 9.11. Train signals				

Note: enter quantity zero for locations where Proposer does not plan to supply new train signals.

9. J Expansion

9.12. Switch machines

Item	Description	Quantity	Unit Cost	Total Material Cost
9.12.A	Switch machines – Church & 18th St.			
9.12.B	Switch machines – Church & 24th St.			
9.12.C	Switch machines – Church & 30th St.			
9.12.D	Switch machines – San Jose & Randall	n/a		
Total for 9.12. Switch machines				

Note: enter quantity zero for locations where Proposer does not plan to supply new switch machines.

9. J Expansion

9.13. Electric locks for manual switches

Item	Description	Quantity	Unit Cost	Total Material Cost
9.13.A	Electric locks – Church & 18th St.			
9.13.B	Electric locks – Church & 24th St.			
9.13.C	Electric locks – Church & 30th St.			
9.13.D	Electric locks – San Jose & Randall	n/a		
Total for 9.13. Electric locks for manual switches				

Note: enter quantity zero for locations where Proposer does not plan to supply electric locks for manual switches.

9. J Expansion

9.14. Wayside wireless data communication Equipment

Item	Description	Quantity	Unit Cost	Total Material Cost
9.14.A	Wireless radios – Church & 18th St.			
9.14.B	Wireless radios – Church & 24th St.			
9.14.C	Wireless radios – Church & 30th St.			
9.14.D	Wireless radios – San Jose & Randall			
Total for 9.14. Wayside wireless data communication Equipment				

Note: Proposer can break down each line item by type of wireless data communication Equipment to improve clarity.

9. J Expansion

9.15. Data Communication System – Network switches

Item	Description	Quantity	Unit Cost	Total Material Cost
9.15.A	Network switches – Church & 18th St.			
9.15.B	Network switches – Church & 24th St.			
9.15.C	Network switches – Church & 30th St.			
9.15.D	Network switches – San Jose & Randall			
Total for 9.15. Data Communication System – Network switches				

Note: enter quantity zero for locations where Proposer does not plan to supply network switches.

10. L Expansion

Item	Description	Labor Cost	Material Cost	Total Cost
10.1	Design		n/a	
10.2	HVAC, power supplies, cables and miscellaneous installation Material	n/a		
10.3	Automatic Train Control – Zone Controllers	n/a		
10.4	Automatic Train Control – Transponders	n/a		
10.5	Solid State Interlocking computers	n/a		
10.6	Drawbridge controllers, freight railroad crossing controllers, and other object controllers	n/a		
10.7	Interlocking Local Control Panels	n/a		
10.8	Train Depart Local Control Consoles	n/a		
10.9	Automatic Turnback Consoles	n/a		
10.10	Train detection devices	n/a		
10.11	Train signals	n/a		
10.12	Switch machines	n/a		
10.13	Electric locks for manual switches	n/a		
10.14	Wayside wireless data communication Equipment	n/a		
10.15	Data Communication System – Network switches	n/a		
10.16	Inspection, testing, Commissioning		n/a	
10.17	Warranty support, training and documentation		n/a	
10.18	Spares until Conditional Acceptance	n/a		
Total for 10. L Expansion				

10. L Expansion

10.3. Automatic Train Control – Zone Controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
10.3.A	Zone Controllers – SF Zoo			
10.3.B	Zone Controllers – Taraval & Sunset			
10.3.C	Zone Controllers – Taraval & 22nd Av.			
Total for 10.3. Automatic Train Control – Zone Controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply zone controllers.

10. L Expansion

10.4. Automatic Train Control – Transponders

Item	Description	Quantity	Unit Cost	Total Material Cost
10.4.A	Transponders – SF Zoo			
10.4.B	Transponders – Taraval & Sunset			
10.4.C	Transponders – Taraval & 22nd Av.			
Total for 10.4. Automatic Train Control – Transponders				

Note: enter quantity zero for locations where Proposer does not plan to supply transponders.

10. L Expansion

10.5. Solid State Interlocking computers

Item	Description	Quantity	Unit Cost	Total Material Cost
10.5.A	Interlocking – SF Zoo			
10.5.B	Interlocking – Taraval & Sunset			
10.5.C	Interlocking – Taraval & 22nd Av.			
Total for 10.5. Solid State Interlocking computers				

Note: enter quantity zero for locations where Proposer does not plan to supply interlocking computers.

10. L Expansion

10.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers

Item	Description	Quantity	Unit Cost	Total Material Cost
10.6.A	Object Controllers – SF Zoo			
10.6.B	Object Controllers – Taraval & Sunset			
10.6.C	Object Controllers – Taraval & 22nd Av.			
Total for 10.6. Drawbridge controllers, freight railroad crossing controllers, and other object controllers				

Note: enter quantity zero for locations where Proposer does not plan to supply object controllers. Proposer can break down each line item by type of object controller to improve clarity.

10. L Expansion

10.10. Train detection devices

Item	Description	Quantity	Unit Cost	Total Material Cost
10.10.A	Train detection devices – SF Zoo			
10.10.B	Train detection devices – Taraval & Sunset			
10.10.C	Train detection devices – Taraval & 22nd Av.			
Total for 10.10. Train detection devices				

Note: enter quantity zero for locations where Proposer does not plan to supply train detection devices.

10. L Expansion

10.11. Train signals

Item	Description	Quantity	Unit Cost	Total Material Cost
10.11.A	Signals – SF Zoo			
10.11.B	Signals – Taraval & Sunset			
10.11.C	Signals – Taraval & 22nd Av.			
Total for 10.11. Train signals				

Note: enter quantity zero for locations where Proposer does not plan to supply new train signals.

10. L Expansion

10.12. Switch machines

Item	Description	Quantity	Unit Cost	Total Material Cost
10.12.A	Switch machines – SF Zoo			
10.12.B	Switch machines – Taraval & Sunset			
10.12.C	Switch machines – Taraval & 22nd Av.			
Total for 10.12. Switch machines				

Note: enter quantity zero for locations where Proposer does not plan to supply new switch machines.

10. L Expansion

10.13. Electric locks for manual switches

Item	Description	Quantity	Unit Cost	Total Material Cost
10.13.A	Electric locks – SF Zoo			
10.13.B	Electric locks – Taraval & Sunset			
10.13.C	Electric locks – Taraval & 22nd Av.			
Total for 10.13. Electric locks for manual switches				

Note: enter quantity zero for locations where Proposer does not plan to supply electric locks for manual switches.

10. L Expansion

10.14. Wayside wireless data communication Equipment

Item	Description	Quantity	Unit Cost	Total Material Cost
10.14.A	Wireless radios – SF Zoo			
10.14.B	Wireless radios – Taraval & Sunset			
10.14.C	Wireless radios – Taraval & 22nd Av.			
Total for 10.14. Wayside wireless data communication Equipment				

Note: Proposer can break down each line item by type of wireless data communication Equipment to improve clarity.

10. L Expansion

10.15. Data Communication System – Network switches

Item	Description	Quantity	Unit Cost	Total Material Cost
10.15.A	Network switches – SF Zoo			
10.15.B	Network switches – Taraval & Sunset			
10.15.C	Network switches – Taraval & 22nd Av.			
Total for 10.15. Data Communication System – Network switches				

Note: enter quantity zero for locations where Proposer does not plan to supply network switches.

Option 2: Heritage fleet

Item	Description	Quantity	Labor		Material		Total Cost
			Unit Cost	Labor Cost	Unit Cost	Material Cost	
O2.1	Onboard design	1 lot			n/a	n/a	
O2.2	Cables and brackets	1 lot	n/a	n/a			
O2.3	Onboard Equipment*	50 Vehicles	n/a	n/a			
O2.4	Inspection, testing, Commissioning	1 lot			n/a	n/a	
O2.5	Warranty support, training and documentation	1 lot			n/a	n/a	
O2.6	Spares until conditional acceptance	1 lot	n/a	n/a			
Total for Option 2. Heritage fleet							

* please break down the onboard Equipment line item into substantive and identifiable sub-items: Vehicle control units, radio transmission units, odometry sensors, etc.

Option 3: Maintenance Vehicles

Item	Description	Quantity	Labor		Material		Total Cost
			Unit Cost	Labor Cost	Unit Cost	Material Cost	
O3.1	Onboard design	1 lot			n/a	n/a	
O3.2	Cables and brackets	1 lot	n/a	n/a			
O3.3	Onboard Equipment*	26 Vehicles	n/a	n/a			
O3.4	Inspection, testing, commissioning	1 lot			n/a	n/a	
O3.5	Warranty support, training and documentation	1 lot			n/a	n/a	
O3.6	Spares until conditional acceptance	1 lot	n/a	n/a			
Total for Option 3. Maintenance Vehicles							

* please break down the onboard Equipment line item into substantive and identifiable sub-items: Vehicle control units, radio transmission units, odometry sensors, etc.

Appendix G

FTA REQUIREMENTS FOR PERSONAL SERVICES CONTRACTS

I. DEFINITIONS

- A. **Approved Project Budget** means the most recent statement, approved by the FTA, of the costs of the Project, the maximum amount of Federal assistance for which the City is currently eligible, the specific tasks (including specified contingencies) covered, and the estimated cost of each task.
- B. **Contractor** means the individual or entity awarded a third party contract financed in whole or in part with Federal assistance originally derived from FTA.
- C. **Cooperative Agreement** means the instrument by which FTA awards Federal assistance to a specific Recipient to support a particular Project or Program, and in which FTA takes an active role or retains substantial control.
- D. **Federal Transit Administration (FTA)** is an operating administration of the U.S. DOT.
- E. **FTA Directive** includes any FTA circular, notice, order or guidance providing information about FTA's programs, application processing procedures, and Project management guidelines. In addition to FTA directives, certain U.S. DOT directives also apply to the Project.
- F. **Grant Agreement** means the instrument by which FTA awards Federal assistance to a specific Recipient to support a particular Project, and in which FTA does not take an active role or retain substantial control, in accordance with 31 U.S.C. § 6304.
- G. **Government** means the United States of America and any executive department or agency thereof.
- H. **Project** means the task or set of tasks listed in the Approved Project Budget, and any modifications stated in the Conditions to the Grant Agreement or Cooperative Agreement applicable to the Project. In the case of the formula assistance program for urbanized areas, for elderly and persons with disabilities, and non-urbanized areas, 49 U.S.C. §§ 5307, 5310, and 5311, respectively, the term "Project" encompasses both "Program" and "each Project within the Program," as the context may require, to effectuate the requirements of the Grant Agreement or Cooperative Agreement.
- I. **Recipient** means any entity that receives Federal assistance directly from FTA to accomplish the Project. The term "Recipient" includes each FTA "Grantee" as well as each FTA Recipient of a Cooperative Agreement. For the purpose of this Agreement, Recipient is the City.
- J. **Secretary** means the U.S. DOT Secretary, including his or her duly authorized designee.
- K. **Third Party Contract** means a contract or purchase order awarded by the Recipient to a vendor or contractor, financed in whole or in part with Federal assistance awarded by FTA.

L. **Third Party Subcontract** means a subcontract at any tier entered into by Contractor or third party subcontractor, financed in whole or in part with Federal assistance originally derived from FTA.

M. **U.S. DOT** is the acronym for the U.S. Department of Transportation, including its operating administrations.

II. FEDERAL CHANGES

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Master Agreement between the City and FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

III. ACCESS TO RECORDS

A. The Contractor agrees to provide the City and County of San Francisco, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this Agreement for the purposes of making audits, examinations, excerpts and transcriptions.

B. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

C. The Contractor agrees to maintain all books, records, accounts and reports required under this Agreement for a period of not less than three years after the date of termination or expiration of this Agreement, except in the event of litigation or settlement of claims arising from the performance of this Agreement, in which case Contractor agrees to maintain same until the City, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. 49 CFR 18.36(i)(11).

IV. DEBARMENT AND SUSPENSION

See Certification Regarding Debarment, Suspension, and Other Responsibility Matters.

V. NO FEDERAL GOVERNMENT OBLIGATIONS TO CONTRACTOR

A. The City and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the City, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

B. The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

VI. CIVIL RIGHTS

- A. Nondiscrimination** – In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 41 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the
- B.** Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
- C. Equal Employment Opportunity** – The following equal employment opportunity requirements apply to the underlying contract:
- 1. Race, Color, Creed, National Origin, Sex** – In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOT) regulations, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor,” 41 CFR Parts 60 et seq., (which implement Executive Order No. 11246, “Equal Employment Opportunity,” as amended by Executive Order No. 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
 - 2. Age** – In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
 - 3. Disabilities** – In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, “Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act,” 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

- C. The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

VII. DBE/SBE ASSURANCES

Pursuant to 49 C.F.R. Section 26.13, the Contractor is required to make the following assurance in its agreement with SFMTA and to include this assurance in any agreements it makes with subcontractors in the performance of this contract:

The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 C.F.R. Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor or subcontractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as SFMTA deems appropriate.

VIII. PATENT RIGHTS (*applicable to contracts for experimental, research, or development projects financed by FTA*)

- A. **General.** If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under this Agreement, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, the City and Contractor agree to take actions necessary to provide immediate notice and a detailed report to the FTA.
- B. Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor’s status (large business, small business, state government or instrumentality, local government, nonprofit organization, institution of higher education, individual), the City and Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government described in U.S. Department of Commerce regulations, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” 37 CFR Part 401.
- C. The Contractor also agrees to include the requirements of this clause in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

IX. RIGHTS IN DATA AND COPYRIGHTS (*Applicable to contracts for planning, research, or development financed by FTA*)

- A. **Definition.** The term “subject data” used in this section means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under this Agreement. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to, computer Software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item

identifications, and related information. The term “subject data” does not include financial reports, cost analyses, and similar information incidental to contract administration.

B. Federal Restrictions. The following restrictions apply to all subject data first produced in the performance of this Agreement.

- 1. Publication of Data.** Except for its own internal use in conjunction with the Agreement, Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may Contractor authorize others to do so, without the written consent of the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public; this restriction on publication, however, does not apply to any contract with an academic institution.
- 2. Federal License.** The Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, “for Federal Government purposes,” any subject data or copyright described below. As used in the previous sentence, “for Federal Government purposes” means use only for the direct purposes of the Federal Government. Without the copyright owner’s consent, the Federal Government may not extend its Federal license to any other party:
 - a.** Any subject data developed under this Agreement, whether or not a copyright has been obtained; and
 - b.** Any rights of copyright purchased by City or Contractor using Federal assistance in whole or in part provided by FTA.
- 3. FTA Intention.** When FTA awards Federal assistance for an experimental, research or developmental work, it is FTA’s general intention to increase transportation knowledge available to the public, rather than to restrict the benefits resulting from the work to participants in the work. Therefore, unless FTA determines otherwise, the Contractor performing experimental, research, or developmental work required by the underlying Agreement agrees to permit FTA to make available to the public, either FTA’s license in the copyright to any subject data developed in the course of the Agreement, or a copy of the subject data first produced under the Agreement for which a copyright has not been obtained. If the experimental, research, or developmental work which is the subject of this Agreement is not completed for any reason whatsoever, all data developed under this Agreement shall become subject data as defined in Subsection a. above and shall be delivered as the Federal Government may direct. This subsection does not apply to adaptations of automatic data processing Equipment or programs for the City’s use the costs of which are financed with Federal transportation funds for capital projects.
- 4. Hold Harmless.** Unless prohibited by state law, upon request by the Federal Government, the Contractor agrees to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties, against any liability, including costs and expenses, resulting from any willful or intentional violation by the Contractor of proprietary

rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data provided under this Agreement. The Contractor shall not be required to indemnify the Federal Government for any such liability arising out of the wrongful acts of employees or agents of the Federal Government.

5. **Restrictions on Access to Patent Rights.** Nothing contained in this section on rights in data shall imply a license to the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Federal Government under any patent.
 6. **Application to Data Incorporated into Work.** The requirements of Subsections (2), (3) and (4) of this Section do not apply to data developed by the City or Contractor and incorporated into the work carried out under this Agreement, provided that the City or Contractor identifies the data in writing at the time of delivery of the work.
 7. **Application to Subcontractors.** Unless FTA determines otherwise, the Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.
- C. **Flow Down.** The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.
- D. **Provision of Rights to Government.** Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (large business, small business, state government or instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), the City and Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 CFR Part 401.

X. **CONTRACT WORK HOURS AND SAFETY STANDARDS** (*applicable to nonconstruction contracts in excess of \$100,000 that employ laborers or mechanics on a public work*)

- A. **Overtime requirements** – No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- B. **Violation; liability for unpaid wages; liquidated damages** – In the event of any violation of the clause set forth in paragraph A of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated

damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph A of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph A of this section.

C. Withholding for unpaid wages and liquidated damages – The City and County of San Francisco shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

D. Subcontracts – The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs A through D of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs A through D of this section.

XI. ENERGY CONSERVATION REQUIREMENTS

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

XII. CLEAN WATER REQUIREMENTS *(applicable to all contracts in excess of \$100,000)*

A. The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§ 1251 et seq. Contractor agrees to report each violation of these requirements to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA regional office.

B. The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

XIII. CLEAN AIR *(applicable to all contracts and subcontracts in excess of \$100,000, including indefinite quantities where the amount is expected to exceed \$100,000 in any yea.)*

A. Contractor agrees to comply with applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. The Contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

- B.** The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

XIV. PRIVACY

If Contractor or its employees administer any system of records on behalf of the Federal Government, Contractor and its employees agree to comply with the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a (the Privacy Act). Specifically, Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Government. Contractor acknowledges that the requirements of the Privacy Act, including the civil and criminal penalties for violations of the Privacy Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of this Agreement. The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.

XV. DRUG AND ALCOHOL TESTING

To the extent Contractor, its subcontractors or their employees perform a safety-sensitive function under the Agreement, Contractor agrees to comply with, and assure compliance of its subcontractors, and their employees, with 49 U.S.C. § 5331, and FTA regulations, “Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations,” 49 CFR Part 655. See Appendix M (Certificate of Compliance with 49 CFR Part 655, Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations)

XVI. TERMINATION FOR CONVENIENCE OF CITY *(required for all contracts in excess of \$10,000)*

See Agreement Terms and Conditions.

XVII. TERMINATION FOR DEFAULT *(required for all contracts in excess of \$10,000)*

See Agreement Terms and Conditions.

XVIII. FALSE OR FRAUDULENT STATEMENTS AND CLAIMS

A. The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§ 3801 et seq. and U.S. DOT regulations, “Program Fraud Civil Remedies,” 49 CFR Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying Agreement, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA-assisted Project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

- B.** The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a Project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.
- C.** The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

XIX. FLY AMERICA

The Contractor agrees to comply with 49 U.S.C. 40118 (the “Fly America” Act) in accordance with the General Services Administration’s regulations at 41 CFR Part 301-10, which provide that recipients and subrecipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

XX. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS

The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any (name of grantee) requests which would cause (name of grantee) to be in violation of the FTA terms and conditions.

XXI. TRANSIT EMPLOYEE PROTECTIVE AGREEMENTS *(applicable to each contract for transit operations performed by employees of a Contractor recognized by FTA to be a transit operator)*

- A.** The Contractor agrees to the comply with applicable transit employee protective requirements as follows:
- 2. General Transit Employee Protective Requirements** – To the extent that FTA determines that transit operations are involved, the Contractor agrees to carry out the transit operations work on the underlying contract in compliance with terms and conditions determined by the U.S. Secretary of Labor to be fair

and equitable to protect the interests of employees employed under this contract and to meet the employee protective requirements of 49 U.S.C. A 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the letter of certification from the U.S. DOL to FTA applicable to the FTA Recipient's Project from which Federal assistance is provided to support work on the underlying contract. The Contractor agrees to carry out that work in compliance with the conditions stated in that U.S. DOL letter. The requirements of this subsection A, however, do not apply to any contract financed with Federal assistance provided by FTA either for projects for elderly individuals and individuals with disabilities authorized by 49 U.S.C. § 5310(a)(2), or for projects for nonurbanized areas authorized by 49 U.S.C. § 5311. Alternate provisions for those projects are set forth in subsections (2) and (3) of this clause.

3. Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5310(a)(2) for Elderly Individuals and Individuals with Disabilities

– If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5310(a)(2), and if the U.S. Secretary of Transportation has determined or determines in the future that the employee protective requirements of 49 U.S.C. § 5333(b) are necessary or appropriate for the state and the public body subrecipient for which work is performed on the underlying contract, the Contractor agrees to carry out the Project in compliance with the terms and conditions determined by the U.S. Secretary of Labor to meet the requirements of 49 U.S.C. § 5333(b), U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the U.S. DOL's letter of certification to FTA, the date of which is set forth Grant Agreement or Cooperative Agreement with the state. The Contractor agrees to perform transit operations in connection with the underlying contract in compliance with the conditions stated in that U.S. DOL letter.

4. Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5311 in Nonurbanized Areas

– If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5311, the Contractor agrees to comply with the terms and conditions of the Special Warranty for the Nonurbanized Area Program agreed to by the U.S. Secretaries of Transportation and Labor, dated May 31, 1979, and the procedures implemented by U.S. DOL or any revision thereto.

B. The Contractor also agrees to include the any applicable requirements in each subcontract involving transit operations financed in whole or in part with Federal assistance provided by FTA.

XXII. NATIONAL ITS ARCHITECTURE POLICY (*Applicable to contracts for ITS projects*)

If providing Intelligent Transportation Systems (ITS) property or services, Contactor shall comply with the National ITS Architecture and standards to the extent required by 23 U.S.C. § 512, FTA Notice, "FTA National ITS Architecture Policy on Transit

Projects,” 66 FR 1455, et seq., January 8, 2001, and later published policies or implementing directives FTA may issue.

XXIII. TEXTING WHILE DRIVING; DISTRACTED DRIVING

Consistent with Executive Order 13513 “Federal Leadership on Reducing Text Messaging While Driving”, Oct. 1, 2009 (available at <http://edocket.access.gpo.gov/2009/E9-24203.htm>) and DOT Order 3902.10 “Text Messaging While Driving”, Dec. 30, 2009, SFMTA encourages Contractor to promote policies and initiatives for employees and other personnel that adopt and promote safety policies to decrease crashes by distracted drivers, including policies to ban text messaging while driving, and to include this provision in each third party subcontract involving the Project.

XXIV. SEAT BELT USE

In compliance with Executive Order 13043 “Increasing Seat Belt Use in the United States,” April 16, 1997, 23 U.S.C. Section 402 note, the SFMTA encourages Contractor to adopt and promote on-the-job seat belt use policies and programs for its employees and other personnel that operate company owned, rented, or personally operated vehicles, and to include this provision in each third party subcontract involving the Project.

XXV. LOBBYING (*To be submitted with each bid or offer exceeding \$100,000*)

Certification required (See Appendices).

XXVI. PROMPT PAYMENT

A. In accordance with SFMTA’s SBE/DBE Program, no later than three days from the date of Contractor’s receipt of progress payments by SFMTA, the Contractor shall pay any subcontractors for work that has been satisfactorily performed by said subcontractors. Unless the prime Contractor notifies the CCO Director in writing within 10 working days prior to receiving payment from the City that there is a bona fide dispute between the prime Contractor and the subcontractor. Within five working days of such payment, Contractor shall provide City with a declaration under penalty of perjury that it has promptly paid such subcontractors for the work they have performed. Failure to provide such evidence shall be cause for City to suspend future progress payments to Contractors.

B. Contractor may withhold retention from subcontractors if City withholds retention from Contractor. Should retention be withheld from Contractor, within 30 days of City’s payment of retention to Contractor for satisfactory completion of all work required of a subcontractor, Contractor shall release any retention withheld to the subcontractor. Satisfactory completion shall mean when all the tasks called for in the subcontract with subcontractor have been accomplished and documented as required by City. If the Contractor does not pay its subcontractor as required under the above paragraph, it shall pay interest to the subcontractor at the legal rate set forth in subdivision (a) of Section 685.010 of the California Code of Civil Procedure.

XXVII. VETERANS EMPLOYMENT (*applicable to Capital Projects*)

As provided by 49 U.S.C. § 5325(k):

A. To the extent practicable, Contractor agrees that it:

1. Will give a hiring preference to veterans (as defined in 5 U.S.C. § 2108), who have the skills and abilities required to perform construction work required under a third party contract in connection with a capital Project supported with funds made available or appropriated for 49 U.S.C. chapter 53, and
2. Will not require an employer to give a preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or a former employee, and

B. Contractor also assures that its subcontractor will:

1. Will give a hiring preference to veterans (as defined in 5 U.S.C. § 2108), who have the skills and abilities required to perform construction work required under a third party contract in connection with a capital Project supported with funds made available or appropriated for 49 U.S.C. chapter 53, to the extent practicable, and
2. Will not require an employer to give a preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or a former employee.

Appendix H
SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

PROTEST PROCEDURES FOR
FEDERALLY ASSISTED CONTRACTS
REVISED: AUGUST 2019

The following procedures apply to the receipt, evaluation and determination of Protests challenging the Selection Process leading to the award of a federally funded contract (excluding procurement of rolling stock):

1. **Protest Definition:** A Protest is a written challenge by a Proposer concerning the manner in which the SFMTA has conducted a Selection Process or the selection of one Proposer or Proposal over another. An entity or person that has not submitted a Proposal may not submit a Protest. An objection to the contents or requirements of Proposal Documents is not a Protest (and are addressed under other provisions of the Proposal Documents).
2. **Protest Requirements:** A Protest must state with specificity each and every one of the grounds on which the Proposer challenges the Selection Process or the selection of one Proposer or Proposal over another. A Protest must be signed by an individual authorized to represent the Proposer, and must cite the law, rule, local ordinance, procedure or RFP provision on which the Protest is based. In addition, the Protestor must specify facts and evidence sufficient for the SFMTA to evaluate and determine the validity of the Protest.
3. **Protest Deadline:** A Protest must be submitted in writing to the SFMTA fully explaining the nature of the protest. The Protest shall be submitted in writing to SFMTA no later than ten Days after the SFMTA issues notice to the Proposer that it will not be awarded the contract. Nothing in this procedure precludes the SFMTA from continuing with a Selection Process pending the resolution of any Protest.
4. **Protest Submission:** A protest must be submitted to the SFMTA Manager identified below with a copy sent to the SFMTA contact person identified in the SFMTA Proposal Documents:

Trinh Nguyen
Principal Engineer/Manager
FTA Contracts and Procurement
San Francisco Municipal Transportation Agency
One South Van Ness Avenue, 6th Floor, Room 6161
San Francisco, CA 94103
trinh.nguyen@sfmta.com

5. **Protest Review and Determination:** A designated SFMTA staff person will review any Protest to the extent that it does not relate to SBE or DBE requirements. The SFMTA will provide a written response to each material issue or allegation stated in the Protest and explain the SFMTA's reasons for its decision. To the extent that a Protest makes claims

regarding any other Proposer, the SFMTA may solicit a response(s) from that Proposer before issuing its written determination.

6. **DBE- or SBE-Related Protests:** To the extent that a Protest involves DBE or SBE requirements, the SFMTA contact person identified in the SFMTA Proposal Documents shall forward a copy of the protest to the Contract Compliance Office (CCO) for review. The CCO shall review DBE or SBE requirements for the Project, examine whether the protest has merit, and provide a detailed written analysis of the Protest to the designated SFMTA staff person handling the Protest. The CCO may contact the Protestor or any other Proposer or proposed subcontractor as necessary to investigate the Protest.

Where a Protest concerns whether a Proposer has met a DBE or SBE goal or demonstrated good faith efforts in reaching such a goal, the CCO's determination shall be incorporated into the SFMTA staff written determination. When the CCO has determined that a Proposer has failed to meet its goal or make required good faith efforts, the procedures in the Agency's DBE or SBE Program shall govern any request for reconsideration from the Proposer.

7. **Appeal of Staff Determination:** A Protestor dissatisfied with the SFMTA's written response may appeal that decision to the Director of Transportation no later than five Days following the date the SFMTA staff person issues his or her decision. The Director will review the Protest and the SFMTA staff decision. The Director may, in his or her sole discretion, affirm the staff determination or issue an alternate determination. If not appealed, the SFMTA staff decision is the final administrative determination of the Protest. If the staff decision is appealed, the determination of the Director of Transportation is the final administrative determination of the Protest. This Section does not apply to Protests where the appeal is subject to the Agency's DBE or SBE Program in accordance with Section 6.
8. **Federal Transit Administration (FTA) Consideration:** The FTA will not substitute its judgment for that of the SFMTA unless the matters at issue involve primarily Federal concerns.
9. **Definitions:** For purposes of these procedures, the following terms shall have the stated meanings:
 - a. **Days:** Working days of the City and County of San Francisco (unless otherwise indicated).
 - b. **Proposal:** An offer to provide goods and/or services submitted in response to this RFP).
 - c. **Proposal Documents:** The RFP and other documents issued by the SFMTA to advertise or solicit Proposals.
 - d. **Proposer:** A person or entity that submits a Proposal.
 - e. **Selection Process:** The SFMTA process to solicit and evaluate Proposer and Proposals and select Proposer to negotiate a proposed contract.

Appendix I
BUY AMERICA REQUIREMENTS

If buses or other rolling stock (including train control, communication, and traction power equipment) are being procured, the appropriate certificate as set forth below shall be completed and submitted by each bidder or offeror in accordance with the requirement contained in 49 CFR Section 661.13(b). **Complete and sign only one of the following certificates.**

Certificate of Compliance with Buy America Rolling Stock Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j), and the applicable regulations in 49 CFR part 661.11.

Date_____

Signature_____

Company_____

Name_____

Title_____

Certificate of Non-Compliance with Buy America Rolling Stock Requirements

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j), but may qualify for an exception to the requirement consistent with 49 U.S.C. 5323(j)(2)(C), and the applicable regulations in 49 CFR 661.7.

Date_____

Signature_____

Company_____

Name_____

Title_____

Appendix J Performance Requirements

Complete this worksheet in accordance with guidance from Section IV.C.3.f (Performance Requirements)

Performance Requirement	Calculation	Proposed Value
a. System Reliability, Availability, and Maintainability Objectives		
Lost Minutes per Year	Calculated as indicated in the Contract Specifications, Section 30	
System Availability		
Minimum System Mean Time Between Failures		
Mean Uptime		
Mean Corrective Maintenance Time		
Maximum Mean Corrective Maintenance Time		
Mean Time to Restore		
Maximum Preventative Maintenance Person-hours		
Maximum Corrective Maintenance Person-hours		
Confidence Limit		
Service Affecting Failures		
Loss of Critical Function.		
Reduction in Operating Margin		
b. Response Time	Maximum number of minutes between a trouble call and the initiation of troubleshooting or repair work <i>per incident</i> before affecting variable Support Fee	Example: Urgent: 15 min Priority: 4 hours Routine: 1 day
	Urgent: An issue with the train control system is causing a service delay.	
	Priority: An issue with the train control system is affecting rail operations.	
	Routine: Any other trouble call	
c. Root Cause Disposition	Maximum number of hours <i>per incident</i> between the initiation of troubleshooting and a report sent to the SFMTA detailing a	Example: Urgent: 1 hour

	root cause, before affecting variable Support Fee	Priority: 5 days Routine: 30 days
Urgent: An issue with the train control system is causing a service delay.		
Priority: An issue with the train control system is affecting rail operations.		
Routine: Any other trouble call		
d. Resolution Time	Maximum number of hours <i>per incident</i> that tickets are open before affecting variable Support Fee	Example: Urgent: 2 hours Priority: 90 days Routine: 180 days
Urgent: An issue with the train control system is causing a service delay.		
Priority: An issue with the train control system is affecting rail operations.		
Routine: Any other trouble call		
e. Software Releases		
Frequency	(E.g. annually, quarterly, biennially)	

Appendix K

Functionality Assessment

This worksheet lists the sections of the Contract Specifications which contain technical System requirements. For each row, determine whether the proposed System will meet all of the requirements in the referenced specification section with, at most, no, low, moderate or high Customization, as compared to the Proposer’s Base Product. Mark the one of the four “Customization” boxes that matches the highest level of Customization determined for each section. Ensure every row has a mark in one of the “Customization” boxes. Complete this worksheet in accordance with guidance from Section IV (Submission Requirements) and the definitions included in Section I.I (Definitions).

Spec Section	Description	Customization			
		None	Low	Mod	High
2.4.1	Light Rail Vehicle 4 (LRV 4)				
2.4.2	Heritage Fleet				
2.4.3	Maintenance Vehicles				
2.9	Equipment Rooms				
6.4.3.3	Cybersecurity Requirements				
6.4.3.4	Network Segmentation/isolation				
6.4.3.5	Identity and Access Management				
6.4.3.6	Network Switches and Routing Equipment				
6.4.3.7	Servers				
6.4.3.8	Applications				
6.4.3.9	Monitoring				
6.4.3.10	Encryption				
6.4.3.11	Network Discovery Scan				
6.4.3.12	Domain Name System				
6.4.3.13	Security Data Logging				
6.4.3.14	Wireless Networks				
6.4.3.15	Dumb End Devices (DED)				
6.4.3.16	Programmable Logic Controllers (PLC) and Intelligent Electronic Devices (IED)				
6.4.3.17	Other Devices				
6.4.3.18	Secure Coding				
6.4.3.19	Vehicle On Board Equipment				
6.4.3.20	Facility Access				
6.5	Network Security System (NSS)				
6.5.1	NSS: DESCRIPTION OF WORK				
6.5.2	NSS: SUBMITTALS				
6.5.3	NSS: FUNCTIONAL REQUIREMENTS				
6.5.4	NSS: THREATS				
6.5.5	NSS: STANDARDS				
6.5.6	NETWORK ELEMENT COMPATIBILITY				
6.5.7	NSS ARCHITECTURE				
6.5.7.1	Integrated Security Event Management / Threat Management				
6.5.7.2	Centralized Management				

Spec Section	Description	Customization			
		None	Low	Mod	High
6.5.7.3	Message Latency and Integrity				
6.5.7.4	Single Point of Failure and Failure Modes				
6.5.7.5	Backup NSS				
6.5.8	NSS: LAYERS OF SECURITY AND FUNCTIONALITY				
6.5.8.1	Port and Access, Lock Down and Disable				
6.5.8.2	Intrusion Detection System (IDS) and Intrusion Prevention System (IPS)				
6.5.8.3	Firewalls				
6.5.8.4	Authentication, Authorization Accounting (AAA) Servers				
6.5.8.4.1	Access Requests				
6.5.8.4.2	Authentication				
6.5.8.4.3	Authorization:				
6.5.8.4.4	Accounting:				
6.5.9	NSS: SOFTWARE				
6.6	System Safety and Security Management CDRLs				
7.2.3	Software Standards				
7.3	Security Standards				
7.4	Safety Standards for Train Control Applications				
7.5	CBTC Performance and Functional Requirements				
7.9	CBTC Equipment Standards				
7.9.1	Equipment Standards				
7.9.2	Data Communication System (DCS) Standards				
7.9.4	Environmental Standards				
7.9.5	Electromagnetic Interference (EMI)/ Electromagnetic Compatibility (EMC) Standards				
13.5.1	Equipment Asset Management Integration				
16.2	System Architecture				
16.3	System Functions				
16.3.1	Train Control and Supervision				
16.3.1.1	Entering/exiting CBTC Territory				
16.3.1.2	Interlocking Functions				
16.3.1.3	Coupling and Uncoupling				
16.3.1.4	Interlocking Local Control Panel				
16.3.1.5	Train Depart Local Control Console				
16.3.1.6	Automatic Turnback Console				
16.3.1.7	Emergency Stop Button				
16.3.1.8	Blue Light System				
16.3.1.9	Temporary Speed Restrictions				
16.3.1.10	Worker Protection				
16.3.1.11	ENERGY SAVING				
16.3.2	Data Communication System				
16.3.3	Centralized Maintenance Management System				
16.3.4	Master Clock				

Spec Section	Description	Customization			
		None	Low	Mod	High
16.3.5	External Interfaces				
16.4	System Performance				
16.4.1	System Capacity in the Subway				
16.4.2	CBTC System Performance Levels				
16.4.3	CBTC System Performance Simulation				
16.5	System Architecture, Functions and Performance CDRLS				
17.3	ATS GUI (Graphical User Interface)				
17.3.2	Line and Train Tracking Displays				
17.3.2.1	Line Overview Displays				
17.4	ATS Mobile Viewer				
17.5	ATS Functions				
17.5.1	Route Setting Functions				
17.5.1.1	ATS Restricted Route Control Function				
17.5.1.2	ATS Automatic Reroute Function				
17.5.1.3	ATS Junction Management Function				
17.5.1.4	ATS Automatic Train Regulation (ATR) Function				
17.5.2	ATS Schedule Management Function				
17.5.3	Daily Train Reporting Sheet Function				
17.5.4	Online Help Function				
17.5.5	Fault Reporting and Diagnostic Alarms				
17.5.6	ATS Data Archiving Function				
17.5.6.1	Command Logging				
17.5.7	ATS Playback Function				
17.6	ATS Special Commands				
17.6.1	ATS Manual Override Function				
17.6.2	Train Hold and Release				
17.6.3	Coupling and Uncoupling of Trains				
17.6.4	ATS Station Bypass and Manual Command of Station Dwell				
17.7	ATS Interfaces				
17.7.1	Emergency Stop Button				
17.7.2	Blue Light System				
17.7.3	Interlocking Local Control Panel				
17.7.4	Train Depart Local Control Console				
17.7.5	Customer Information Systems				
17.7.6	Street Traffic Controller				
17.7.7	CAD/AVL System				
17.7.8	Traction Power and Ventilation Systems				
18.2	General ATO Specifications				
18.3	Automatic Speed Regulation				
18.4	Platform Berthing Control				
18.5	Automatic Door Control				
18.6	Station bypass				
18.7	Automatic Turnback				

Spec Section	Description	Customization			
		None	Low	Mod	High
19.2	ATP Functionalities				
19.3	Train Location and Speed Determination				
19.3.1	Train Detection				
19.4	Train Length Determination				
19.5	Safe Braking				
19.6	Safe Train Separation				
19.7	Speed Enforcement/Overspeed Warning				
19.8	Interlocking Functions				
19.9	Train Door interlock				
19.10	Rollback Protection				
19.11	End of Track Protection				
19.12	Parted Train Protection				
19.13	Intrusion Detection				
19.14	Tunnel Ventilation				
20.2	Centralized Maintenance Management System (CMMS)				
20.2.1	Diagnostic and Maintenance Data				
20.2.2	CMMS Access				
20.2.2.1	Automatic Train Supervision (ATS)				
20.2.2.2	CMMS User Terminal Access				
20.2.2.3	CMMS Remote Access				
20.2.3	CMMS Diagnostic Functions				
20.2.4	CMMS Maintenance Functions				
20.2.5	CMMS Alarm and Reports				
20.2.5.1	CMMS Alarms				
20.2.5.2	CMMS Reports				
20.3	Network Management System (NMS)				
20.3.1	NMS Access				
20.3.1.1	ATS				
20.3.1.2	Fixed NMS User Workstation				
20.3.1.3	Portable NMS Equipment				
20.3.1.4	Remote Access				
20.3.2	NMS Monitoring and Reports				
20.3.2.1	NMS Monitoring and Alarms				
20.3.2.2	NMS Reports				
21.2.1	Traction Power Load Simulation				
21.2.2	ATS Simulator				
21.2.3	ATS Operation Simulator				
21.2.4	ATS Playback System				
21.2.5	Vehicle Training Simulator				
21.2.5.1	Mode Switch Simulation				
21.2.5.2	New On-Board Controller simulation				
21.2.5.3	HMI Design and Familiarization Use				
21.2.6	Shadow Mode Test Tool				
21.2.7	Test and Diagnostic Laptops				

Spec Section	Description	Customization			
		None	Low	Mod	High
21.2.8	Signal System Emulator				
21.2.9	Zone Controller Simulator				
21.2.9.1	Interface Requirements				
21.2.9.2	Simulations				
21.3	Special Test Equipment and Tools				
21.3.1	Portable Test Equipment				
21.3.2	Maintenance Test Racks				
21.3.2.1	Partition of SLMDs				
21.3.2.2	SLMD Interfaces				
21.3.2.3	SLMD-LRU (Line Replaceable Unit) connection				
21.3.2.4	Test Automation				
21.3.2.5	Test Sensitivity, Accuracy and Specificity				
21.3.2.6	Integration Centralized Maintenance Management System (CMMS)				
21.3.3	Tools				
22.3	Normal Operating Modes				
22.3.1	Tunnel Locations				
22.3.1.1	Mainline				
22.3.1.2	Automatic Turnback at Muni Metro Turnback (MMT)				
22.3.1.3	Automatic Turnback at Central Subway Tail Tracks				
22.3.2	Surface Locations				
22.3.3	Yard Locations				
22.4	Degraded Operating Modes				
22.4.1	Tunnel Locations				
22.4.2	Surface Locations				
22.4.3	Loss of Communications				
22.5	Operating Mode Selection				
22.6	Operating Mode Transitions				
22.6.1	Transitions between Auto Turnback and ATO, Auto Turnback and Automatic Train Protection Manual (ATPM)				
22.6.2	Transitions between ATO and ATPM				
22.6.3	Transitions between ATPM and Manual				
24.2	Introduction				
24.3	Operating Modes				
24.4	Vital/Non-Vital functions				
24.5	On-Board System Interfaces				
24.5.1	Thales On-Board Logical Interface Architecture				
24.5.2	Train Lines				
24.5.3	Multifunction Vehicle Bus				
24.5.4	Human Machine Interface (HMI)				
24.6	Design				
24.7	Installation				
24.8	Migration				
26.2	General				

Spec Section	Description	Customization			
		None	Low	Mod	High
26.3	Data Cable Network (DCN)				
26.3.1	DCN: Description of work				
26.3.2	DCN: Testing				
26.4	CBTC Wireless Network (WN)				
26.4.1	WN: DESCRIPTION OF WORK				
26.4.2	WN: CBTC WIRELESS HARDWARE				
26.4.3	WN: CBTC RADIO EXECUTION				
26.4.3.1	INSTALLATION				
26.5	Network Management System (NMS)				
26.6	Network Security System (NSS)				
26.7	Voice Communications System				
26.8	Utilization of SFMTA Infrastructure				
27.3	CBTC Equipment Environmental Requirements				
27.3.1	Environment Requirements				
27.3.2	Seismic Requirements				
27.4	Power And Grounding Requirements				
27.5	Enclosure Requirements				
27.6	Electromagnetic Interference (EMI) / Electromagnetic Compatibility (EMC)				
27.6.1	EMC PROGRAM PLAN				
27.6.2	EMI/RFI SURVEY				
27.7	CBTC Central Equipment Requirements				
27.7.1	Video Wall				
27.7.2	Server Rooms				
27.7.3	Workstations				
27.8	CBTC Wayside Equipment Requirements				
27.8.1	Zone Controller (ZC)				
27.8.2	Interlocking				
27.8.3	Cut-Over Cubicle				
27.8.4	Trackside Equipment				
27.8.4.1	Signals				
27.8.4.2	Switch Machines And Switch Position Detection				
27.8.4.3	Transponders				
27.8.4.4	Interlocking Local Control Panels				
27.8.4.5	Train Depart Local Control Console				
27.8.4.6	Automatic Turnback Console				
27.9	CBTC On-Board Equipment Requirements				
27.1	CBTC Data Communication System (DCS) Equipment				
28.2	General				
28.3	CBTC External Interfaces				
28.4	Application Programming Interface				
28.4.1	Data Warehouse				
28.4.2	Enterprise Asset Management System (EAMS)				
28.4.3	Real Time Prediction System - NextBus				

Spec Section	Description	Customization			
		None	Low	Mod	High
28.4.4	Computer Aided Dispatch (CAD)				
28.4.5	Platform Audio Visual (PAV)				
28.5	Videowall				
28.5.1	Primary Control Center				
28.5.2	Backup Control Center				
28.6	Supervisory Control and Data Acquisition (SCADA)				
28.7	Onboard Interface				
28.8	Traffic Signal Controller				
28.9	Drawbridges				
28.10	Freight Crossing				
28.11	Track Intrusion Detection System				
31.7.6	Shadow Mode Testing				

Appendix L

Technical Addenda

The information contained in this Appendix is provided by SFMTA to provide Proposer with technical descriptions of existing systems and operating environment that they will be expected to operate in. The information is provided to permit Proposer to develop accurate bids.

Appendix L is organized as follows:

Appendix L1, Technical Addenda –
Concept, Plan, and Interface Documents

Appendix L1 includes the following documents:

- (1) Concept of Operations and Maintenance
- (2) Concept of Safety
- (3) Failure Management Matrix
- (4) Integration Management Plan
- (5) Project Management Plan
- (6) RAM Plan
- (7) Safety and Security Management Plan
- (8) TSI SIITS SEMP Template

Appendix L2, Technical Addenda – As-Built and Existing Conditions, Selected Manuals

Appendix L2 contains Sensitive Security Information (SSI). For procedures as to how to obtain access to the SSI in Appendix L2, refer to Section I.A, “Issuance of Bid Documents”.

Appendix L2 includes the following content:

Appendix L2: Volume 1

1. Operations
 - 1.1 MUNI Work Authorization
 - 1.2 SFMTA Rail Rule Book
 - 1.3 MUNI LRV Operator Training Manual
 - 1.4 Station Platform Map
 - 1.5 MUNI Radio System
2. Maintenance
 - 2.1 Manuals
 - 2.2 Training Materials
3. Vehicle Schematics
 - 3.1 Vehicle Drawings
 - 3.2 Onboard Equipment Photos
 - 3.3 VOBC Design Documentation
4. ATCS Documentation
 - 4.1 MUNI System Design Overview
 - 4.2 MUNI Safe Braking Model
 - 4.3 ATCS Documentation Excerpts
5. Equipment Layout
 - 5.1 Central Control Layout
 - 5.2 Central Control Documentation

- 5.3 Station Controller Wiring
- 6. Signaling Equipment
 - 6.1 Inductive Loop System
 - 6.2 Axle Counter
 - 6.3 Central Subway
 - 6.4 Final Cutover Drawings
 - 6.5 Misc. Signaling Equipment Documentation
- 7. Interlocking ICD
 - 7.1 MUNI Switch Map
 - 7.2 Switch List
 - 7.3 Rail Signal List
 - 7.4 Signal Equipment to be Retained
 - 7.5 Alstom GM4000A
 - 7.6 Alstom GRS 5F
 - 7.7 H&K Switch
 - 7.8 Irwin Enhanced T3
 - 7.9 Irwin Locking T3
- 8. VETAG ICD
 - 8.1 VETAG Test Interrogator User Manual
 - 8.2 VETAG Wayside Equipment Installation Service Manual
 - 8.3 West Portal VETAG Operations & Maintenance Manual
 - 8.4 VETAG Programmable Decoder Card Manual
 - 8.5 Code Control Box Logger Spec Sheet
 - 8.6 VETAG Interrogator Spec Sheet
 - 8.7 VETAG Bit Assignment
 - 8.8 VETAG Truth Table
 - 8.9 VETAG Wiring
- 9. CAD-AVL ICD
- 10. NextBus ICD
- 11. Misc. Equipment and Spec Sheets
 - 11.1 Surface Signaling Equipment
 - 11.2 Relay Spec Sheets

Appendix L2: Volume 2

As-Built Lookup Map

Special Trackwork Map

- 1. Rail Yard
 - 1.1. Muni Metro East Yard
 - 1.2. Green Light Rail Center
 - 1.3. Cameron Beach Yard
- 2. Subway System
 - 2.1 Twin Peaks Tunnel (West Portal to Castro)
 - 2.2 Market Street Subway (Castro to Embarcadero)
 - 2.3 Muni Metro Turnback (MMT) (Embarcadero to Ferry Portal)
 - 2.4 Central Subway (4th St & King St to Chinatown Station)
- 3. Surface Rail System
 - 3.1 The Embarcadero (Ferry Portal to 6th St & King St)
 - 3.2 Church St & Duboce Ave
 - 3.3 St. Francis Circle (West Portal Ave & Sloat Blvd)

- 3.4 J Church Corridor (Green Metro Center to Church St & Market St)
- 3.5 K Ingleside Corridor (I-280 & Ocean Ave to St. Francis Circle)
- 3.6 L Taraval Corridor (SF Zoo to West Portal Ave & Ulloa St)
- 3.7 M Oceanview Corridor (San Jose & Ocean Ave to St. Francis Circle)
- 3.8 N Judah (Ocean Beach to Sunset Tunnel East Portal)
- 3.9 T Third Street Corridor (3rd St & King St to Bayshore Blvd & Sunnydale Ave)

Appendix M

To be completed by all Proposing Firms

Minimum Qualifications Forms

Complete the forms in Appendix M as required by Section IV.C.2 (Minimum Qualifications Proposal) of the RFP.

MQ1 Form

Project Name: _____

Length of Line in miles (double track): _____

Signaling System Technology: _____

Brownfield/Greenfield Project: Brownfield Greenfield Both

If answered "Both", additionally complete the table below:

	Brownfield	Greenfield
Length of Line in miles (double track)		
Date of Revenue Service: _____		

If the project was put in revenue service in stages, complete the below section for each stage.

Stage	Length of Line in miles (double track)	Date of Revenue Service
Stage 1	Brownfield	
	Greenfield	
Stage 2	Brownfield	
	Greenfield	
Stage 3	Brownfield	
	Greenfield	
Stage 4	Brownfield	
	Greenfield	

MQ2 Form

Project Name: _____

Minimum Grade of Automation: _____

Length of Line (double track): _____

Signaling System Technology: _____

Date of Revenue Service: _____

If the project was put in revenue service in stages, complete the below section for each stage.

Stage	Length of Line (double track)	Date of Revenue Service
-------	----------------------------------	----------------------------

Stage 1

Stage 2

Stage 3

Stage 3

MQ3 Form

Project Name: _____

Date of Revenue Service: _____

If the project was put in revenue service in stages, complete the below section for each stage.

Stage	Date of Revenue Service
-------	-------------------------

Stage 1

Stage 2

Stage 3

Stage 3

For the listed Project, briefly describe the Proposer's role in the Project. Include the type of rail (light, heavy etc.), portions of the rail at surface, underground, elevated etc., whether the project was delivered in mixed-flow traffic or semi-exclusive right of way, and the degree to which the train control Project interfaces with road traffic signals.

MQ4 Form

Project 1:

Project Name: _____

Customer Date of Award: _____

Client Name: _____

Project 2:

Project Name: _____

Customer Date of Award: _____

Client Name: _____

Note: Projects listed on MQ4 form must be from those described in Section IV.C.3 (Proposer's Experience).

MQ5 Form

Project 1:

Project Name: _____

Customer Date of Award: _____

Client Name: _____

Project 2:

Project Name: _____

Customer Date of Award: _____

Client Name: _____

Note: Projects listed on MQ5 form must be from those described in Section IV.C.3.c (Proposer's Experience).

MQ6 Form

Project 1:

Company Name: _____

Moody's Credit Rating: _____

If a parent company is being used for the purposes of credit rating, attach documentation establishing the relationship between the Proposer and the parent company.

Appendix N

Sample Support Calculations

The below tables were taken from Appendix B (Schedule of Prices and Calculation of Charges) of the Sample Agreement for the purposes of showing a sample Monthly Support Fee calculation.

For the purposes of this sample Monthly Support Fee calculation, a hypothetical Monthly Support Fee, highlighted in yellow, has been inserted in Table 3 from Appendix B (Schedule of Prices and Calculation of Charges) of the Sample Agreement.

Table 3: System Support Prices				
	A. Original Monthly Support Fee (Contract Rate)	B. Adjusted Monthly Support Fee	C. Number of Months	D. Maximum Support Fee
1. Initial Support Term: 10-year System support services	\$50,000/ month	\$ ___ / month	120	\$ ___
2. Option 4: first 5-year extension for System support services	\$ ___ / month	\$ ___ / month	60	\$ ___
3. Option 5: second 5-year extension for System support services	\$ ___ / month	\$ ___ / month	60	\$ ___

Table 8 from Appendix B (Schedule of Prices and Calculation of Charges) of the Sample Agreement shows the phase-in Monthly Support Fee percentages for Monthly Support Fee payments. For the purposes of these scenarios, the percent of the Monthly Support Fee will be calculated as though the T Expansion Warranty Period had just concluded (70% of the total

Monthly Support Fee). These fee percentages are highlighted in yellow in the sample Table 8 shown below:

Table 8: Support Payment Schedule for Phase Delivery	
Phase	Phase-In Adjustment Package
1. Pilot Phase & Subway Replacement	50%
2. N Expansion	10%
3. T Expansion	10%
4. K&M Expansions	10%
5. J Expansion	10%
6. L Expansion	10%
TOTAL ALL PHASES	100%

Sample Calculations

The following scenarios use the total Monthly Support Fee entered in the sample Table 3 above. 80% of the Monthly Support Fee is fixed, and the remaining 20% of the Monthly Support Fee is variable. The total Monthly Support Fee is calculated based on the phased-in percentages shown in Table 8.

The Performance Targets for these sample calculations will be assumed as follows, using the examples from Section 30 of the Contract Specifications:

- Availability (X) = 99.95%
- Reduction in Operating Margin Events (Y) = 96 events
- Loss of Critical Function (Z) = 12 events
- Unsatisfactory Issues Tally = 0 events

The 100% column in Table 6 of Appendix B (Schedule of Prices and Calculation of Charges) in the Sample Agreement calculates the monthly Performance Targets by dividing the given yearly Performance Targets by 12, except for Availability, which is calculated separately using the formula given in Table 6 of Appendix B (Schedule of Prices and Calculation of Charges). The following scenarios are calculated using the sample Performance Targets given above, and each scenario uses a different set of sample actual performance numbers to yield sample performance scores for that scenario. The columns corresponding to the example actual performance numbers are highlighted in yellow.

Scenario 1

The actual performance of Availability for the Scenario 1 month is 99.98%. The Availability formula in Table 6 of Appendix B (Schedule of Prices and Calculation of Charges) of the Sample Agreement yields an Availability performance score of 124%. This Availability performance score is calculated as follows using the formula in Table 6 of Appendix B (Schedule of Prices and Calculation of Charges) of the Sample Agreement:

Availability Performance Target (X): 99.95%
 Availability actual performance: (A_s): 99.98%

$$Performance\ Score = \frac{2A_s + 5 - 7X}{5 - 5X}$$

Availability performance score calculation: $124\% = \frac{2(99.98\%) + 5 - 7(99.95\%)}{5 - 5(99.95\%)}$

Rounded down, this places Availability actual performance in the 120% column. The remainder of the Performance Target rows are calculated using Table 6 of Appendix B (Schedule of Prices and Calculation of Charges) in the Sample Agreement.

Sample Calculation of Performance Scores (Scenario 1)											
Weight	Parameter	Perf Target	Actual Perf	140%	120%	100%	80%	60%	40%	20%	0%
4%	Availability	99.95 %	99.98%		124%						
4%	Reduction in Operating Margin	96 events	1 event	≤1	4	8	10	12	14	16	>16
2%	Loss of Critical Function	12 events	1 events	0	0	1	1	1	1	2	>2
10%	Unsatisfactory Issues Tally	0 events	0 issues for 2 consecutive months	≥3 mons	2 mons	0	5	10	15	20	>20

The variable Monthly Support Fee (20% of the total Monthly Support Fee) would be added to the fixed Monthly Support Fee (80% of the total Monthly Support Fee). The total Monthly Support Fee for Scenario 1 would be calculated as follows:

- Availability: 120% * 4% = 4.8%
- Reduction in Operating Margin: 140% * 4% = 5.6%
- Loss of Critical Function: 100% * 2% = 2%
- Unsatisfactory Issues Tally: 120% * 10% = 12%
- Fixed Monthly Support Fee: 80%
- **Sum total of weighted percentages: 104.4%**

The performance scores of Scenario 1 produced weighted percentages which, when added to the 80% fixed Monthly Support Fee, resulted in a weighted Monthly Support Fee percentage of 104.4%. The Monthly Support Fee for Scenario 1 is \$52,200 (\$50,000 multiplied by 104.4%). Thus, the actual Monthly Support Fee for Scenario 1, once multiplied by 70% because of the phased-in support structure, will be: **\$36,540**

Scenario 2

The actual performance of Availability for the Scenario 1 month is 99.9%. The Availability formula in Table 6 of Appendix B (Schedule of Prices and Calculation of Charges) of the Sample Agreement yields an Availability performance score of 60%. This Availability performance score is calculated as follows using the formula in Table 6 of Appendix B (Schedule of Prices and Calculation of Charges) of the Sample Agreement:

Availability Performance Target (X): 99.95%
 Availability actual performance: (A_s): 99.9%

$$Performance\ Score = \frac{2A_s + 5 - 7X}{5 - 5X}$$

Availability performance score calculation: $60\% = \frac{2(99.9\%)+5-7(99.95\%)}{5-5(99.95\%)}$

This places Availability actual performance in the 60% column. The remainder of the Performance Target rows are calculated using Table 6 of Appendix B (Schedule of Prices and Calculation of Charges) in the Sample Agreement.

Sample Calculation of Performance Scores (Scenario 2)											
Weight	Parameter	Perf Target	Actual Perf	140%	120%	100%	80%	60%	40%	20%	0%
4%	Availability	99.95 %	99.9%					60%			
4%	Reduction in Operating Margin	96 events	2 event	≤1	4	8	10	12	14	16	>16
2%	Loss of Critical Function	12 events	0 events	0	0	1	1	1	1	2	>2
10%	Unsatisfactory Issues Tally	0 events	0 issues for 3 consecutive months	≥3 mons	2 mons	0	5	10	15	20	>20

Despite most of the actual performance numbers in Scenario 2 exceeding 100% performance, all columns are capped at 100% because the performance of one parameter is less than 100%. The total Monthly Support Fee for Scenario 2 would be calculated as follows:

- Availability: 60% * 4% = 2.4%
- Reduction in Operating Margin: 100% * 4% = 4%
- Loss of Critical Function: 100% * 2% = 2%
- Unsatisfactory Issues Tally: 100% * 10% = 10%
- Fixed Monthly Support Fee: 80%
- **Sum total of weighted percentages: 98.4%**

The actual performance values of Scenario 2 produced weighted percentages which, when added to the 80% fixed Support Fee, resulted in a weighted Support Fee percentage of 98.4%. The Monthly Support Fee for Scenario 2 is \$49,200 (\$50,000 multiplied by 98.4%). Thus, the actual Monthly Support Fee for Scenario 2, once multiplied by 70% because of the phased-in support structure, will be: **\$34,440**

Appendix O

Negotiated Procurement Procedures

General

This document describes the negotiated procurement process.

1. Evaluate Proposals

SFMTA will establish an Evaluation Committee comprised of persons with expertise in transit operations, systems engineering, and train control systems.

The Evaluation Committee first will determine which Proposals are responsive to the RFP and meet MQs. SFMTA may request Clarifications from Proposers to assist it in making this determination. If issued, Clarifications and responses will be in writing and limited to resolving apparent errors or missing information needed by the SFMTA to determine whether a Proposal is responsive or meets MQs. Clarifications will not provide a Proposer with an opportunity to modify its Proposal. If a Proposal is rejected for being non-responsive or not meeting MQs, the SFMTA will provide written notice to the Proposer at the earliest practical time.

After Proposals that are non-responsive or do not meet MQs have been eliminated, the Evaluation Committee will evaluate the remaining Proposals according to criteria set forth in this Section V of the RFP. During the evaluation, the Evaluation Committee may

- Identify Betterments and other potentially beneficial substitute designs or approaches for further discussions with Proposers
- Identify and document any requirements in the RFP that the SFMTA may wish to change or add based on information provided in Proposals.

2. Determine the Proposals Ranking in the Competitive Range

Based on the Proposers' scores and the potential for the Proposers to be selected after negotiation, the SFMTA may establish a competitive range and determine that certain Proposals fall outside the competitive range. Proposals the SFMTA determines are not in the competitive range will be eliminated from further consideration. At the earliest practical time, the SFMTA will provide written notice to Proposers that have been eliminated from the competitive range.

3. Negotiations with Proposers in Competitive Range

The SFMTA will negotiate with all Proposers who have not been eliminated from the competitive range. The content and extent of the negotiations may vary from one Proposer to another. If, after completing the evaluation and undertaking any further analyses required by funding agencies or applicable law, the SFMTA finds only one Proposal to be in the competitive range, the SFMTA may decide to negotiate with only that Proposer.

4. Request for Best and Final Offers (BAFOs)

Following the conclusion of negotiations with all Proposers in the competitive range, the SFMTA may proceed to award a contract based on the evaluation of the original Proposals or revise the RFP and Contract Specifications and Sample Agreement, and invite the remaining Proposers to submit a revised Proposal (BAFO) to respond to the revised Contract Documents.

5. Best and Final Offer Evaluation

The SFMTA will evaluate BAFOs according to the RFP selection criteria set out in this RFP section as they may be amended by any RFP Addenda. After evaluation of the BAFOs, the SFMTA may conduct further negotiations and/or solicit additional BAFOs. Upon completion of any additional negotiations and/or BAFO evaluation, the SFMTA may proceed to award a contract to the Proposer whose Proposal scores highest in the SFMTA's final evaluation of remaining Proposals.

The SFMTA may reject any or all Proposals if the SFMTA deems the price or prices not acceptable, if Proposal(s) do not meet SFMTA requirements, or for any other reason that the SFMTA deems in its sole discretion to be in its best interests.

6. Protest Procedures

Any protest regarding the SFMTA's selection of Proposals, eliminations of Proposers, or the selection procedures described in this section shall be submitted and evaluated in accordance with Appendix H -- "Protest Procedures for Federally Assisted Contracts."

Appendix P

RFP Question Form

Complete this form and submit by email to the Contract Administrator whose name and contact information appears on the cover page of this RFP no later than the deadline for submission of written questions or requests for clarification as stated in RFP Section I.E. (RFP Schedule).

SFMTA-2022-40-FTA Design, Procurement, Support and Related Services for a Communications-Based Train Control System	
Proposer / company:	
1. Document reference	<input type="checkbox"/> RFP <input type="checkbox"/> Sample Agreement <input type="checkbox"/> Contract Specifications <input type="checkbox"/> Appendix: _____
2. Section(s) of document	<i>IV, 2.3.4, etc.</i>
3. Reason	<input type="checkbox"/> Unclear requirement <input type="checkbox"/> Missing requirement <input type="checkbox"/> Conflicting requirements <input type="checkbox"/> Requirement infeasible/objection to requirement <input type="checkbox"/> Access to SSI included in Appendix L2 <input type="checkbox"/> Requesting missing / additional information <input type="checkbox"/> Other: _____

<p>4. Text of clause(s) in question</p>	<p><i>Copy clause(s) here.</i></p>
<p>5. Question or comment</p>	<p><i>Proposer's question will be made public along its answer in the tender Addendum. In phrasing the question, please refrain from sharing information that could reveal the identity of your company.</i></p>

