

File No. 220947

Committee Item No. 1

Board Item No. 9

COMMITTEE/BOARD OF SUPERVISORS

AGENDA PACKET CONTENTS LIST

Committee: Budget and Finance Committee Date November 16, 2022

Board of Supervisors Meeting Date November 29, 2022

Cmte Board

<input type="checkbox"/>	<input type="checkbox"/>	Motion
<input type="checkbox"/>	<input type="checkbox"/>	Resolution
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Ordinance
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Legislative Digest
<input type="checkbox"/>	<input type="checkbox"/>	Budget and Legislative Analyst Report
<input type="checkbox"/>	<input type="checkbox"/>	Youth Commission Report
<input type="checkbox"/>	<input type="checkbox"/>	Introduction Form
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Department/Agency Cover Letter and/or Report
<input type="checkbox"/>	<input type="checkbox"/>	MOU
<input type="checkbox"/>	<input type="checkbox"/>	Grant Information Form
<input type="checkbox"/>	<input type="checkbox"/>	Grant Budget
<input type="checkbox"/>	<input type="checkbox"/>	Subcontract Budget
<input type="checkbox"/>	<input type="checkbox"/>	Contract/Agreement
<input type="checkbox"/>	<input type="checkbox"/>	Form 126 – Ethics Commission
<input type="checkbox"/>	<input type="checkbox"/>	Award Letter
<input type="checkbox"/>	<input type="checkbox"/>	Application
<input type="checkbox"/>	<input type="checkbox"/>	Public Correspondence

OTHER (Use back side if additional space is needed)

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>MTA/PLN CEQA Determination 9/20/2022</u>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>MTAB Resolution No. 221004-091 10/4/2022</u>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>MTA Presentation 10/19/2022</u>
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Completed by: Brent Jalipa Date November 10, 2022

Completed by: Brent Jalipa Date November 22, 2022

[Contracting Process - Communications Based Train Control System - Waiver of Administrative Code Contract Prohibition and Authorization to Use Negotiated Procurement Procedures]

Ordinance 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.

NOTE: **Unchanged Code text and uncodified text** are in plain Arial font.

Additions to Codes are in *single-underline italics Times New Roman font*.

Deletions to Codes are in *~~strikethrough italics Times New Roman font~~*.

Board amendment additions are in double-underlined Arial font.

Board amendment deletions are in ~~strikethrough Arial font~~.

Asterisks (* * * *) indicate the omission of unchanged Code subsections or parts of tables.

Be it ordained by the People of the City and County of San Francisco:

Section 1. Background.

(a) The Municipal Transportation Agency's ("SFMTA") existing Automatic Train Control System ("ATCS") controls the movement of light rail vehicles in the Muni subways. The ATCS is vital for efficient operation of the Muni subway: the ATCS allows Muni to operate twice as many vehicles in the subway under ATCS control as it could operate under manual train control. The ATCS was designed under a 1992 contract and placed into service in 1998. Although the ATCS has been upgraded and improved since it was first put into service, the

1 ATCS's operating technology, software, and equipment are outdated and the ATCS is
2 reaching the end of its useful life.

3 (b) The SFMTA plans to issue a Request for Proposals ("RFP") in December 2022
4 to solicit proposals from qualified systems providers for a new Communications Based Train
5 Control System ("CBTC System") to replace the existing Muni ATCS. The new CBTC System
6 will operate trains in the Market Street Subway and the Central Subway employing state of the
7 art train control technology that will make subway operations faster, more reliable, and more
8 efficient. The new CBTC System will also provide train supervision and limited train protection
9 to the surface portions of the Muni light rail system.

10 (c) The CBTC System vendor will be selected based on best value criteria
11 described in the RFP, as authorized by Charter Section 8A.105(b)(1), which grants the
12 SFMTA exclusive authority over the administration of its contracts, and Administrative Code
13 Sections 21.05(b) and 21.4(a), which authorize City departments to issue requests for
14 proposals and to select vendors based on their qualifications and criteria other than price
15 alone. The SFMTA seeks authorization to build on that process by using negotiated
16 procurement procedures that Administrative Code Section 21.4(f) authorizes for mass-transit
17 vehicle procurement. Negotiated procurement procedures will allow the SFMTA to have
18 substantive communications with proposers after receipt of proposals to improve the quality
19 and reduce the overall cost of the CBTC System.

20 These procedures will permit the SFMTA, after reviewing and evaluating all proposals,
21 to better align its CBTC System specifications with proposers' available technology solutions,
22 consider cost-benefits issues, and modify insurance, bond, and other contract requirements in
23 consultation with the City's Risk Manager and City Attorney to conform to market conditions
24 and risk management considerations. The SFMTA would then request proposers submit
25 revised proposals based on the amended contract requirements, to which the SFMTA would

1 apply best value criteria to select one proposer's CBTC System and negotiate a contract for
2 award with that proposer. This process will allow the SFMTA greater flexibility in negotiating
3 the contract for a CBTC System, which will result in lower costs and a system that will better
4 meet SFMTA's transit needs.

5 (d) The contract for the new CBTC System will consist of two parts. The first part of
6 the contract will cover design of the CBTC System, procurement of software and equipment,
7 oversight of equipment installation on light rail vehicles, on trackways, and in control rooms,
8 and CBTC System testing and California Public Utilities Commission service certification, and
9 will have a term up to eight years. The second part of the contract will cover system support,
10 maintenance of proprietary equipment and software, supply of spare and replacement parts,
11 troubleshooting, software updates, and related professional services to assist the SFMTA in
12 maintaining and operating the CBTC System. The term for that second part of the contract
13 will be up to 20 years, comprising a 10-year base term and two five-year extension options, so
14 that following design, installation, and testing of the CBTC System, the selected CBTC
15 System vendor will provide parts, equipment, software updates, and support services for the
16 entire expected 20-year life of the new CBTC System.

17 (e) The SFMTA Board of Directors approved the SFMTA's request for this
18 ordinance at its meeting of October 4, 2022.

19 Section 2. Authorization to Issue Request for Proposals for a Professional Services
20 and Commodities Contract with a Term Longer than 10 Years for a Communications Based
21 Train Control System.

22 Administrative Code Section 21.9(a)(2) provides that a solicitation for a contract for
23 multiple years or with options to extend the term for multiple years shall not provide for a
24 single contract term or base term and extensions of the term that would exceed 10 years.
25 The total term of the proposed contract will be 28 years, with a design, implementation period

1 of eight years, followed by a support period of 20 years. The term restriction stated in Section
2 21.9(a)(2) is hereby waived to allow the support services period of the CBTC System contract
3 to have an initial 10-year term with two five-year options to extend, so that the services period
4 of the contract will cover the expected 20-year life of the train control system.

5 Section 3. Authorization to Purchase a Communications Based Train Control System
6 Using the Negotiated Procurement Procedures that Administrative Code Section 21.4(f)
7 Authorizes for the Purchase of Mass-Transit Vehicles.

8 The Municipal Transportation Agency is authorized to solicit and evaluate proposals for
9 a Communications Based Train Control System using the negotiated procurement procedures
10 that Administrative Code Section 21.4(f) authorizes for the purchase of mass-transit vehicles.

11 Section 4. Contract Award Subject to Charter Section 9.118.

12 The estimated total cost of the CBTC System design, equipment and software
13 procurement, installation oversight, and testing, and the cost of system support services and
14 spare and replacement parts and equipment will exceed \$10 million, and the total term of the
15 contract will exceed 10 years. Therefore, the contract will be subject to Board of Supervisors'
16 approval under Charter Section 9.118(b). After having selected a vendor and negotiated the
17 final terms and conditions of the contract, following SFMTA Board of Directors' approval of the
18 contract, the SFMTA will request Board of Supervisors' approval of the contract.

19 Section 5. Environmental Finding.

20 The Planning Department has determined that the actions contemplated in this
21 ordinance do not constitute a project under the California Environmental Quality Act ("CEQA")
22 (California Public Resources Code Sections 21000 et seq.) pursuant to Title 14 of the
23 California Code of Regulations Section 15060(c) because the action would not result in a
24 direct physical change in the environment, or a reasonably foreseeable indirect physical
25 change in the environment. The action is therefore not subject to CEQA review. Said

1 determination is on file with the Clerk of the Board of Supervisors in File No. 220947 and is
2 incorporated herein by reference. The Board affirms this determination.

3 Section 6. Effective Date. This ordinance shall become effective 30 days after
4 enactment. Enactment occurs when the Mayor signs the ordinance, the Mayor returns the
5 ordinance unsigned or does not sign the ordinance within ten days of receiving it, or the Board
6 of Supervisors overrides the Mayor's veto of the ordinance.

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9 APPROVED AS TO FORM:
10 DAVID CHIU, City Attorney

11 By: /s/
12 ROBERT K. STONE
Deputy City Attorney

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REVISED LEGISLATIVE DIGEST

(Substituted, 9/27/2022)

[Contracting Process - Communications Based Train Control System - Waiver of Administrative Code Contract Prohibition and Authorization to Use Negotiated Procurement Procedures]

Ordinance 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.

Existing Law

Administrative Code Chapter 21 governs the City's procurement of commodities and services, including technology systems, software and related professional services. Administrative Code, Section 21.9(a)(2) prohibits a department from issuing a solicitation for a contract for general or professional services for a term longer than 10 years.

Amendments to Current Law

The proposed uncodified ordinance will: (1) waive the application of Administrative Code, Section 21.9(a)(2), and will authorize the SFMTA to issue a Request for Proposals for contract for a new Communications Based Train Control System with a term longer than 10 years; and, (2) authorize the SFMTA to procure a new Communications Based Train Control System using the negotiated procurement procedures that Administrative Code Section 21.4(f) authorizes for procuring mass-transit vehicles.

Background Information

The Municipal Transportation Agency's ("SFMTA") existing Advanced Train Control System ("ATCS") controls the routing, speed, acceleration, braking, and headway (distance between vehicles) of light rail vehicles in the Muni subways. The ATCS is vital for efficient operation of the subway – the ATCS allows Muni to operate twice as many vehicles in the subway than Muni could operate under manual train control. The ATCS was designed under a 1992 contract and placed into service 1998. Although the ATCS has been upgraded and improved since it was first put into service, much of the technology by which the ATCS operates is outdated and the ATCS is reaching the end of its useful life.

The SFMTA plans to issue a Request of Proposals (“RFP”) in December 2022 to solicit proposals from qualified systems providers for a new Communications Based Train Control System (“CBTC System”) to replace Muni’s existing ATCS. The new CBTC System will operate trains in the Market Street Subway and the Central Subway employing state of the art train control technology that will make subway operations faster, more reliable, and more efficient. The new CBTC System will also provide train supervision and limited train protection to the surface portions of the Muni light rail system. The CBTC System vendor will be selected based on best value criteria described in the RFP, as authorized by Charter, Section 8A.105(b)(1), which grants the SFMTA exclusive authority over the administration of its contracts, and Administrative Code, Sections 21.05(b) and 21.4(a), which authorize City departments to issue requests for proposals and to select vendors based on their qualifications and criteria other than price alone.

The SFMTA seeks authorization to build on that process by evaluating proposals for the CBTC System using the negotiated procurement procedures that Administrative Code Section 21.4(f) authorizes for mass-transit vehicle procurement. Negotiated procurement procedures will allow the SFMTA to have substantive communications with proposers after receipt of proposals to improve the quality and reduce the overall cost of the CBTC System. These procedures will permit the SFMTA, after reviewing and evaluating all proposals, to better align its CBTC System specifications with proposers’ available technology solutions, consider cost-benefits issues, and modify insurance, bond and other contracts requirements in consultation with the City’s Risk Manager and City Attorney to conform to market conditions and risk management considerations. The SFMTA would then request proposers submit revised proposals based on the amended contract requirements. The SFMTA would apply best value criteria to evaluate and rank the revised proposals, select one proposer’s system, and negotiate a contract for award with that proposer. This process will allow the SFMTA greater flexibility in negotiating the contract for a CBTC System, which will result in lower costs and a system that will better meet SFMTA’s transit needs.

CBTC Systems are comprised of proprietary equipment and software. SFMTA staff will perform routine maintenance, parts replacement, and repairs to the new CBTC System and its supporting infrastructure, but the SFMTA will need to obtain professional services from the CBTC System vendor to perform advanced equipment repairs and software maintenance that SFMTA employees are unable to perform.

The contract for the new CBTC System will consist of two parts, with a total term of up to 28 years. The first part of the contract will have a term of up to eight years, and will cover CBTC System design, procurement of software and equipment, oversight of equipment installation on light rail vehicles, on trackways, and in control rooms, testing and California Public Utilities Commission service certification. The second part of the contract will have a term of up to 20 years, and will cover system support, maintenance that SFMTA employees cannot perform, supply of spare and replacement parts, trouble shooting, software updates, and related professional services to assist the SFMTA in maintaining and operating the CBTC System. The term for this services part of the contract will comprise a 10-year base term and two five-

year extension options, so that following design, installation and testing of the CBTC System, the selected CBTC System vendor will provide parts, equipment, software updates, and support services for the entire expected 20-year life of the CBTC System.

The SFMTA Board of Directors approved the SFMTA's request for this ordinance at its meeting of October 4, 2022.

The Planning Department has determined that the actions contemplated in the proposed ordinance do not constitute a project under the California Environmental Quality Act ("CEQA") (California Public Resources Code Sections 21000 et seq.) pursuant to Title 14 of the California Code of Regulations Section 15060(c) because the action would not result in a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. The action is therefore not subject to CEQA review. Said determination is on file with the Clerk of the Board of Supervisors in File No. 220947.



SFMTA

Train Control Upgrade Project

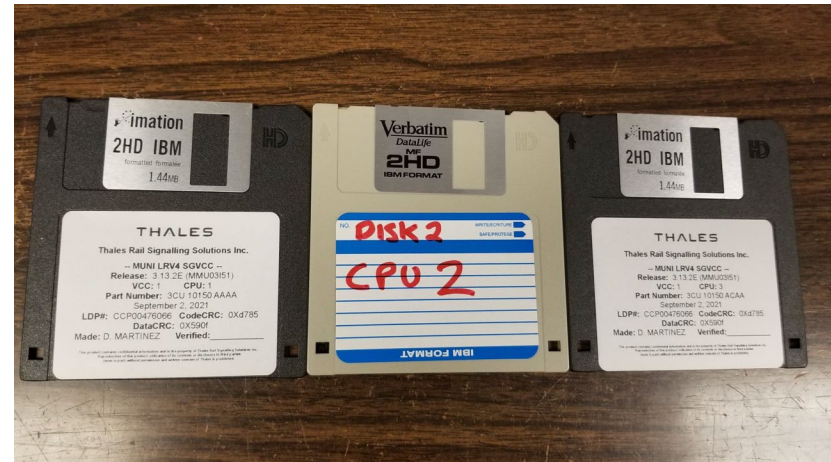
San Francisco Board of Supervisors
Budget and Finance Committee
November 16, 2022



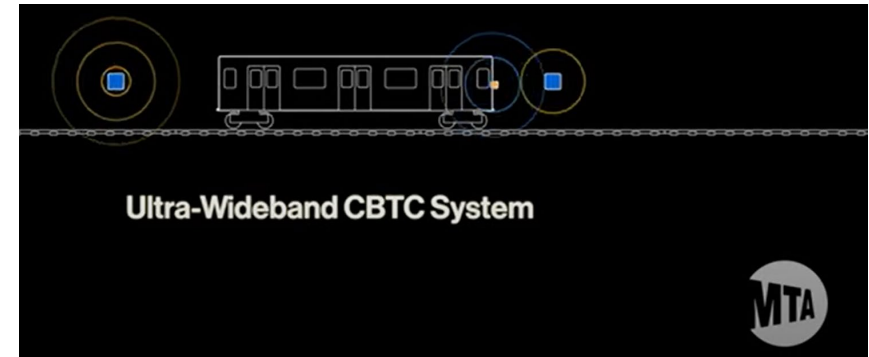
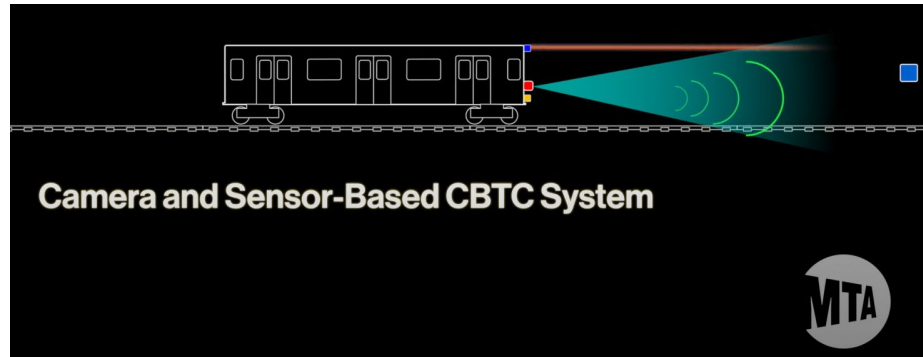
Muni has a train control system currently operating in the subway.

It is almost 25 years old

We need to replace the system this decade to keep our subway in a state of good repair.



We will benefit from the latest technologies offered by modern CBTC systems.



We can also get more benefits from improved design, such as expanding the CBTC system to the surface.





Reduced delays: Customers no longer “stuck” on trains between stations due to subway congestion or slow-moving trains with a communication failure

Reduced travel times: Trips on Muni will be faster as trains will not have to wait for traffic lights on the surface – the train control system will talk to the signals and let them know a train is coming



Improved reliability: More consistent wait times that match the advertised frequency of trains, which makes trip-planning more reliable

Better service: the new system will give train controllers more flexibility to manage bunching and gaps

Benefits of including support contract with design RFP

Improves price and terms because firms are in competition with peers

Key elements linked to strategic goals:



Performance-based support fee creates contractual elements for supplier to build reliability into initial design



Vendor-Managed Spares Inventory designed to incentivize reduced parts replacement



Regular software updates keeps hardware and software up to date



SFMTA Board of Supervisors Ordinance Request

SFMTA requesting BOS approval for an ordinance to allow:

- Advertisement of a supplier contract which extends past 10 years
- Negotiated procurement (i.e., best/final offer)

Proposed Contract Duration:

- Design/Implementation Phase: **8 years**
- Initial Support Term: **10 years**
- Additional Support Terms (2 options): **5 years each**



SFMTA

Train Control Upgrade Project





San Francisco Board of Supervisors
Budget and Finance Committee
October 19, 2022





What is a train control system?

A train control system:

-  Tracks the locations of trains in the system
-  Prevents collisions, and enforces safe spacing between trains
-  Controls the trains' braking (and acceleration in auto mode)
-  Sets the train's routing through the system

The train control system affects:



The frequency of train service (how close together the trains can be)



Reliability of train service



Flexibility of service plans, and of service during disruptions

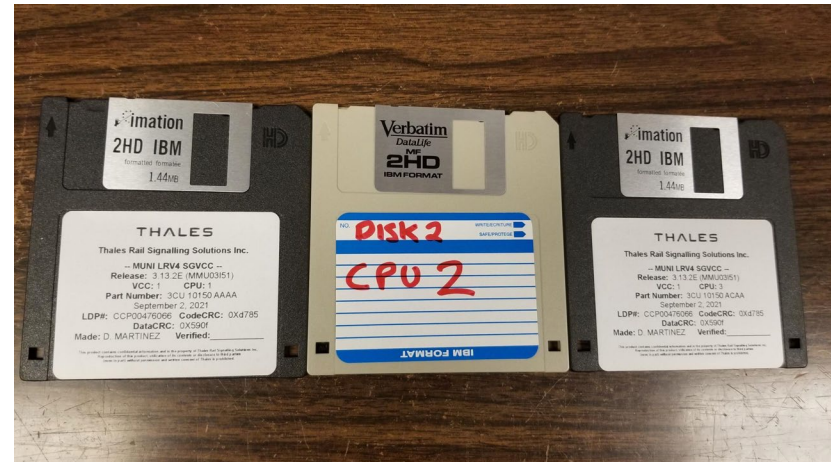


Delays due to train congestion, traffic signals, or junction delays

Muni has a train control system currently operating in the subway.

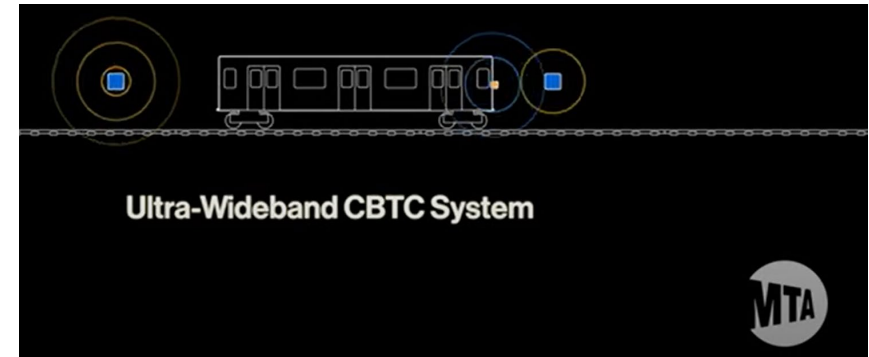
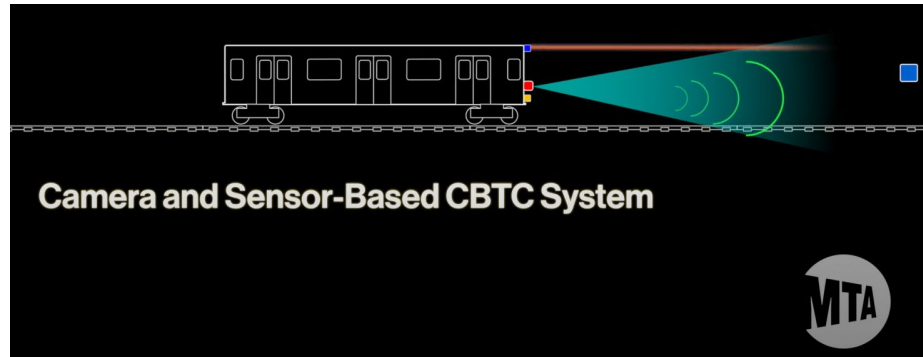
It is almost 25 years old

We need to replace the system this decade to keep our subway in a state of good repair.





We will benefit from the latest technologies offered by modern CBTC systems.



We can also get more benefits from improved design, such as expanding the CBTC system to the surface.





Reduced delays: Customers no longer “stuck” on trains between stations due to subway congestion or slow-moving trains with a communication failure

Reduced travel times: Trips on Muni will be faster as trains will not have to wait for traffic lights on the surface – the train control system will talk to the signals and let them know a train is coming



Improved reliability: More consistent wait times that match the advertised frequency of trains, which makes trip-planning more reliable

Better service: the new system will give train controllers more flexibility to manage bunching and gaps



New communications-based train control (CBTC) system upgrade to improve Muni light rail service



Lessons Learned



SFMTA draws from multiple sources of “lessons learned” to set up Train Control for success including:



Major SFMTA capital projects like Central Subway and Van Ness BRT



Peer agencies – North America and Europe



Past SFMTA technology projects



Current ATCS system



Applying Lessons Learned

Procurement Method

Ensure selection based on quality of supplier's product and expected long-term performance, not short-term construction issues

Harness Opportunities

Negotiate support terms while supplier is in competition with its peers

Supplier Partnership & Performance Incentives

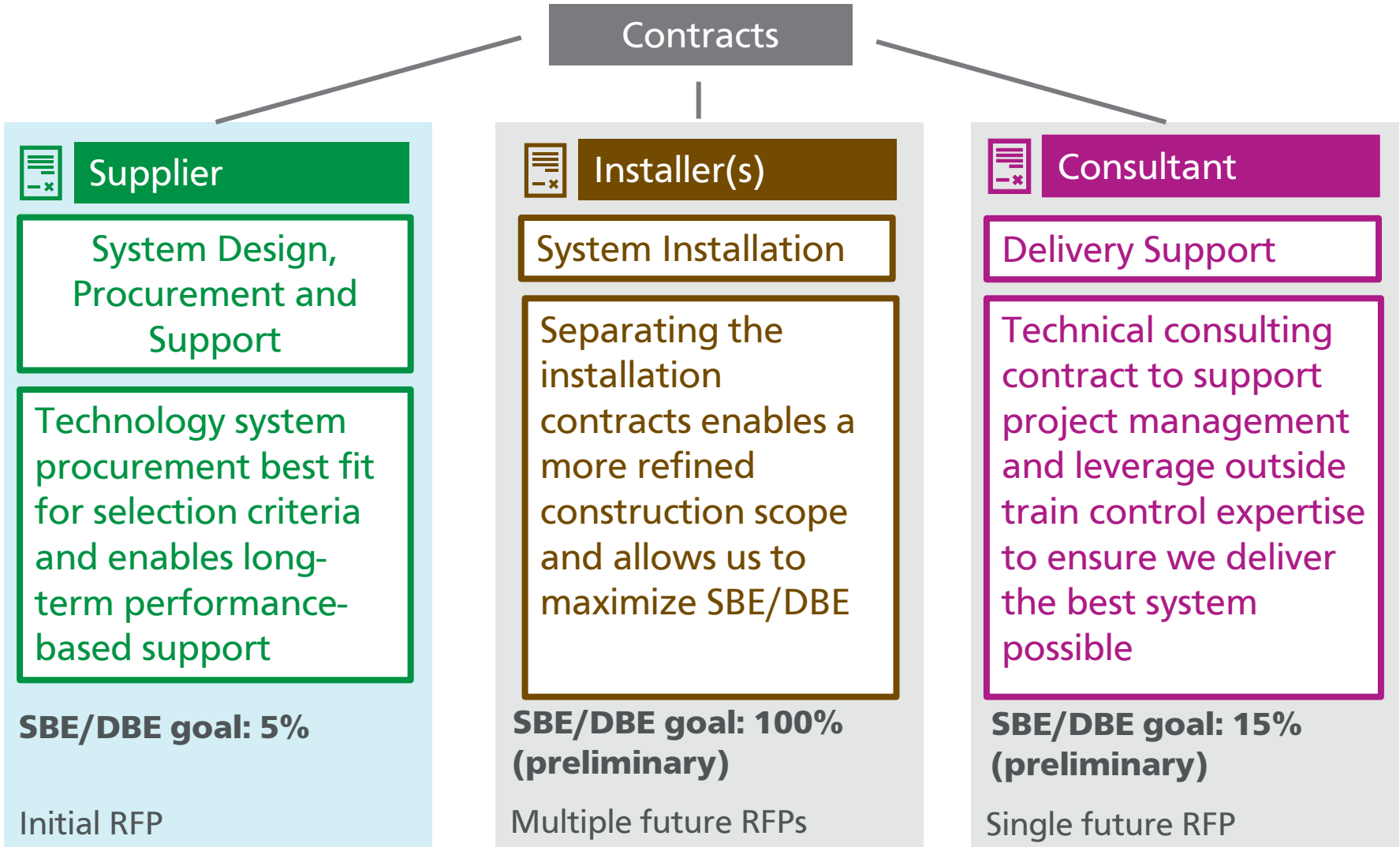
Create contractual incentives for supplier to partner in the success of the system

Support-Focused/ Lifecycle Management

Treat the system as a technology product, hardware and software kept up-to-date

Risk Assessment

Anticipate risk points ahead of time with a comprehensive risk assessment process



Benefits of including support contract with design RFP

Improves price and terms because firms are in competition with peers

Key elements linked to strategic goals:



Performance-based support fee creates contractual elements for supplier to build reliability into initial design



Vendor-Managed Spares Inventory designed to incentivize reduced parts replacement



Regular software updates keeps hardware and software up to date

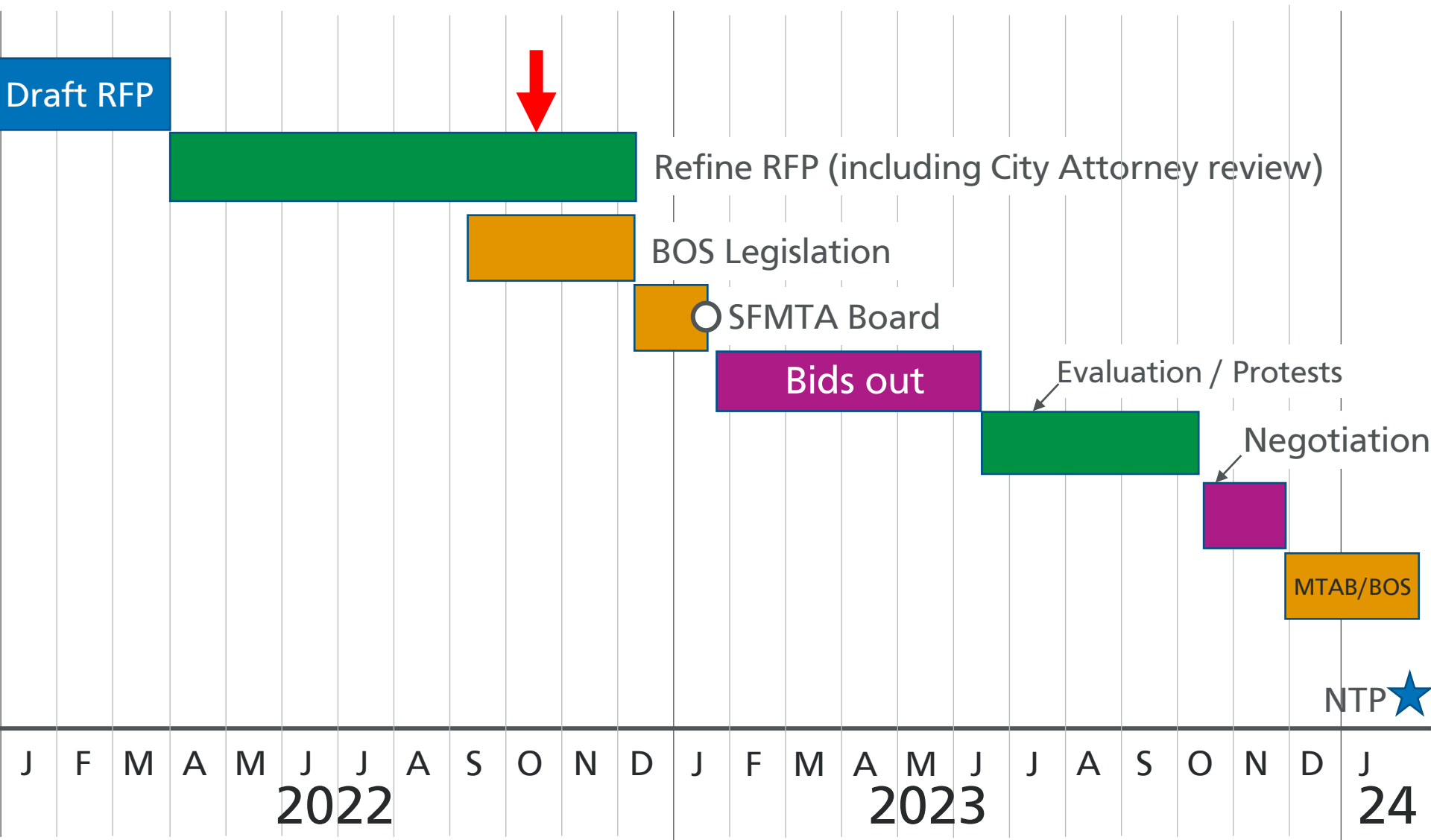
SFMTA Board of Supervisors Ordinance Request

SFMTA requesting BOS approval for an ordinance to allow:

- Advertisement of a supplier contract which extends past 10 years
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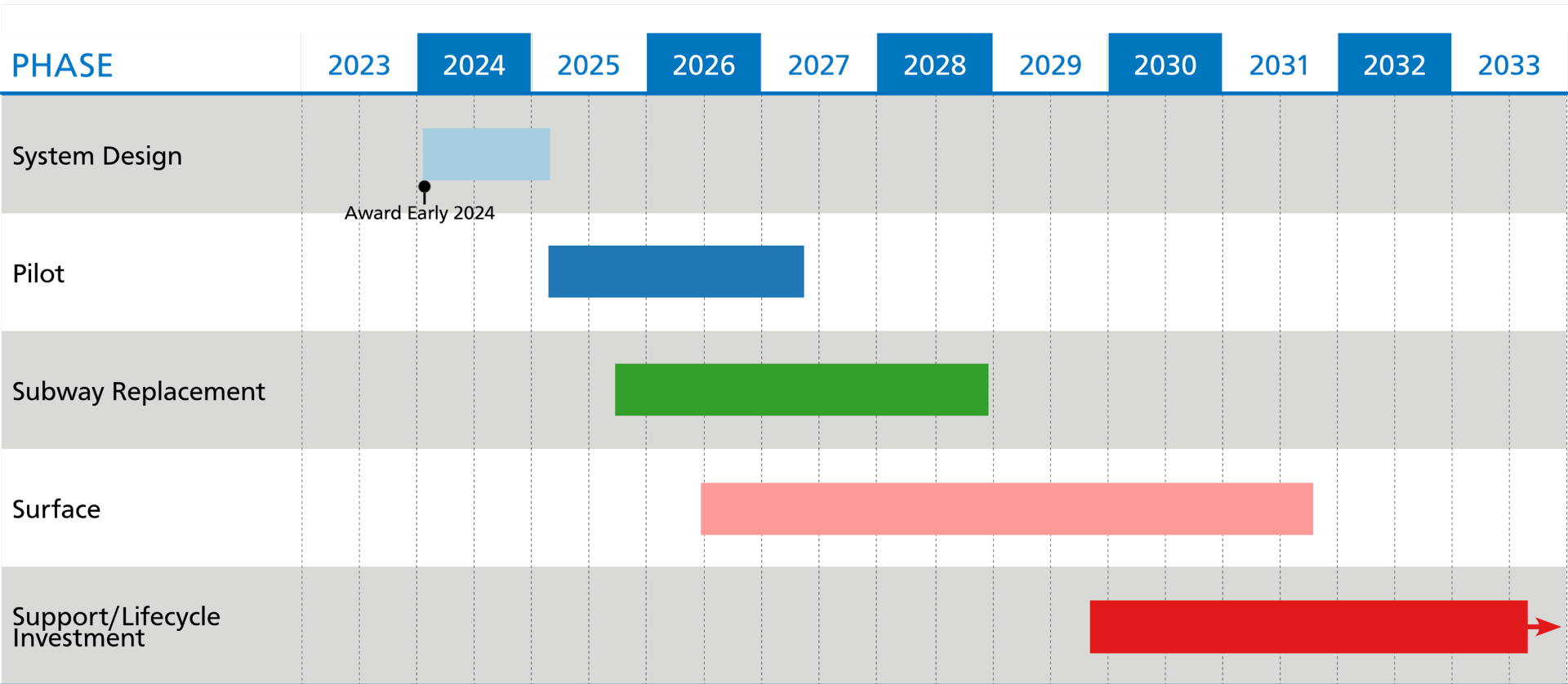
Proposed Contract Duration:

- Design/Implementation Phase: **8 years**
- Initial Support Term: **10 years**
- Additional Support Terms (2 options): **5 years each**





Proposed Project Schedule



Total Project Budget: \$608 million
Support Costs: \$100 million over 10 years



Request for Proposals for a contract for a Communications Based Train Control System

The San Francisco Municipal Transportation Agency (SFMTA) proposes to issue a Request for Proposals (RFP) for a contract to replace its existing Muni Communications Based Train Control (CBTC) System. A new CBTC system would enable SFMTA to centrally manage both the surface rail and subway portions of Muni Metro through modern CBTC technology.

Prior to the issuance of the RFP, the SFMTA would require an ordinance from the Board of Supervisors authorizing the SFMTA to issue an RFP for a contract with a term longer than 10 years for a CBTC System; authorizing use of negotiated procurement procedures; and stating that the award of contract will be subject to the approval of the Board of Supervisors.

Not a "project" under CEQA pursuant to CEQA Guidelines Sections 15060(c) and 15378(b) because the action would not result in a direct or a reasonably foreseeable indirect physical change to the environment.

Melinda Hue

9/20/2022

Melinda Hue
San Francisco Municipal Transportation Agency

Date

Lauren Bihl

9/20/2022

Lauren Bihl
San Francisco Planning

Date

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. 221004-091

WHEREAS, The SFMTA operates the Muni Metro light rail system which includes both shared surface right of way and dedicated subways controlled with outdated analog loop-cable train control system installed in 1994; and,

WHEREAS, The SFMTA desires to issue a Request for Proposals for a Communications-Based Train Control system (CBTC) to replace the existing analog train control system and enable the SFMTA to operate its rail service with greater reliability, reduced delays and increased capacity; and,

WHEREAS, The SFMTA desires to negotiate a single long-term contract for CBTC procurement and ongoing technical and system support for up to the 20-year life of the CBTC; and,

WHEREAS, San Francisco Administrative Code Section 21.9(a)(2) prohibits departments from soliciting contracts with a term longer than 10 years; and,

WHEREAS, San Francisco Administrative Code Section 21.4(f) authorizes use of negotiated procurement for the purchase of mass-transit vehicles, but not related technology systems, such as a CBTC; and,

WHEREAS, To procure a CBTC that will meet SFMTA transit needs, present the best value for the Agency, and best serve the riding public, the SFMTA proposes to use negotiated procurement procedures to contract for a CBTC and support services for the 20-year life of the CBTC; and,

WHEREAS, For the SFMTA to use negotiated procurement procedures for a contract for a CBTC with a term over 10 years requires an ordinance waiving Administrative Code Section 21.9(a)(2) and authorizing the SFMTA to use the negotiated procurement procedures as approved by Administrative Code Section 21.4(f); and,

WHEREAS, On September 20, 2022, the SFMTA, under authority delegated by the Planning Department, determined that the proposed ordinance 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 requests the Board of Supervisors by ordinance to authorize the Municipal Transportation Agency to (1) issue a Request for Proposals for a Communications Based Train Control System to be awarded by a contract with a term exceeding 10 years, and to waive the Administrative Code Section 21.9(a)(2) prohibition against issuing solicitations for a contract for professional services for a term longer than 10 years; (2) authorize SFMTA to use negotiated procurement procedures; and, (3) to adopt findings under the California Environmental Quality Act.

I certify that the foregoing resolutions were adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of October 4, 2022.



Secretary to the Board of Directors
San Francisco Municipal Transportation Agency



London Breed, Mayor

Gwyneth Borden, Chair
Amanda Eaken, Vice Chair
Stephanie Cajina, Director

Steve Heminger, Director
Fiona Hinze, Director
Manny Yekutieli, Director

Jeffrey Tumlin, Director of Transportation

September 1, 2022

The Honorable Members of the Board of Supervisors
City and County of San Francisco
1 Dr. Carlton Goodlett Place, Room 244
San Francisco, CA 94102

Subject: Request for Approval – Ordinance Waiving Administrative Code section 21.9(a)(2) and Authorizing the SFMTA to Solicit Proposals for a Contract with a Term Longer than 10 Years for a Communications Based Train Control System

Honorable Members of the Board of Supervisors:

The San Francisco Municipal Transportation Agency (SFMTA) currently uses an automatic train control system (ATCS) that first went into service in 1998. The ATCS is reaching the end of its useful life and must be completely overhauled or replaced. Following the 2019 Muni Reliability Working Group's identification of train control as a significant factor impacting rail service, SFMTA has made replacement of the ATCS system a top priority.

The Ordinance you will be considering for approval requests that the San Francisco Board of Supervisors waive Administrative Code section 21.9(a)(2) (which prohibits departments from soliciting contracts with a term longer than 10 years) and approve an ordinance authorizing the SFMTA to issue a Request for Proposals for a contract with a term longer than 10 years for a new Communications Based Train Control System (CBTC). The total term of the proposed contract will be up to 28 years and last through the system's expected life.

The proposed contract for the new CBTC System will consist of two parts. The first part of the contract will have a term of up to eight years, and will cover CBTC System design, procurement of software and equipment, oversight of equipment installation on light rail vehicles, on trackways, and in control rooms, testing, and CPUC service certification.

The second part of the contract will cover system support, high level maintenance that SFMTA employees cannot perform, (discussed further in the "Alternatives" section below), supply of spare and replacement parts, trouble shooting, software updates, and related professional services to assist the SFMTA in maintaining and operating the CBTC System. The term for the second part of the contract will be a 10-year initial term and two five-year extension options, so that following design, installation and testing of the CBTC System, the selected CBTC System vendor will provide parts, equipment, software updates, and support services for the entire expected 20-year life of the CBTC System.



Background

As stated previously, the ATCS controls trains in the 7-mile Market Street Subway and in the 1.6-mile long Central Subway. The ATCS first went into service in 1998; it is now reaching the end of its useful life and must be completely overhauled or replaced. The ATCS increased the throughput of trains in the Market Street Subway compared to the previous fixed-block train control system. A new CBTC will further increase the efficiency of the subway system. The SFMTA proposes to expand the CBTC system to the surface portions of the Muni Metro system to provide greater systemwide control and coordination. Expanding the train control system to the surface will reduce delays and provide greater reliability by coordinating train movements with street traffic signals, managing surface junctions according to priority, varying speed and dwell times to keep trains evenly spaced, eliminating portal check-ins, and providing the SFMTA Transit Management Center with oversight and management of the entire rail network rather than just the subway.

Scope of Work and Project Approach

The new CBTC will be installed in phases along existing light rail lines to give the SFMTA beneficial use of the system before it is installed on all rail lines, and to provide break points where the new system's performance and stability can be assessed before proceeding. An initial Pilot phase will launch the CBTC on the surface along the Embarcadero and the northern half of the Third Street corridor, while installing CBTC equipment on the new Siemens LRV4 light rail vehicles. Once the CBTC System has been proven in service, the Project will shift to the Replacement phase to install the CBTC System in the subway and retire the legacy ATCS. Following a successful cutover in the subway, the Expansion phase of the Project will extend CBTC coverage along each of the surface rail lines leading into the subway, until the entire Muni rail network is covered by the CBTC System.

Selection Process and Procurement Approach

The goal of the RFP will be to secure a single contract for design, procurement, testing, commissioning, and long-term support of a state-of-the-art CBTC. The SFMTA will select a CBTC supplier using the "best value" selection process and contract negotiation, as authorized by Charter section 8A.102(b)(1) and Administrative Code sections 21.05(b) and 21.4(a). The SFMTA will score proposals based on the suppliers' expertise, experience, system procurement costs, and support costs. The SFMTA will seek to negotiate a contract that will incentivize the CBTC supplier to design and deliver a system which has high reliability.

CBTC systems are proprietary, meaning that the system software and much of the equipment can only be obtained from the system supplier. The proprietary nature of these systems requires the contracting agency to obtain follow-on support contracts, which the supplier has a significant advantage in negotiating once their system is installed. The SFMTA believes it will obtain better contract terms and prices if it negotiates system support requirements at the same time it negotiates system design and performance requirements.



The CBTC supplier will design the system and provide detailed engineering plans and will furnish all CBTC software and proprietary equipment. To increase competition and business opportunities, the SFMTA intends to contract with eligible Small Business Enterprise contractors (of which San Francisco LBE firms are included) to install the system on the vehicles, along the trackway, and at the control center. The CBTC supplier will monitor contractors' installation of CBTC equipment and infrastructure in the wayside (trackways), control centers, data centers, and the vehicles. At the end of each phase, the CBTC supplier will test the system to ensure that it meets performance, quality and safety standards and certify each portion of the system for revenue service as it is completed. The CBTC supplier will warrant the equipment and software for one year after the start of revenue service. The CBTC supplier will assign technical staff to assist SFMTA maintenance in troubleshooting, maintenance, and diagnostics. The CBTC supplier will also provide regular software updates, including product-wide enhancements and security updates, and an obsolescence management plan to keep the system current. The CBTC supplier will maintain a two-year inventory of spare parts locally and replenish the parts as necessary to maintain reliable service.

Alternatives Considered

CBTC systems comprise highly specialized proprietary hardware and software, which the suppliers license to transit agencies. For commercial and system safety reasons, CBTC system suppliers will not allow transit agencies access to the software source code or the proprietary tools and test equipment necessary to perform more than routine system maintenance. The SFMTA is not capable of maintaining its train control system without the ongoing support of the CBTC supplier, because the SFMTA does not have (and does not expect to be able to hire) staff with detailed knowledge of the unique, proprietary hardware and software which makes up the train control system. The SFMTA does not consider operating its train control system without the CBTC supplier's support to be a viable alternative.

The SFMTA considered the following alternatives for obtaining support from the train control supplier described above: (1) minimally maintaining the existing ATCS system, without upgrading it, (2) pursuing a program of incremental upgrades and support through sole source contracts with its current ATCS supplier; and (3) advertising a procurement only contract, then later awarding a sole source support contract to the selected supplier.

In the first alternative, the SFMTA would continue to invest resources necessary to maintain the existing ATCS system, with the intent to keep the system in a state of good repair for as long as possible. This approach would confer no additional operational benefits and would result in increasing costs as parts become obsolete and scarce. Also, this would result in the continuation and probable escalation of failures as the system approaches the end of its useful life. Eventually the system will fail and be unable to be repaired, at which point it would need to be abandoned and replaced under a more urgent timeline and at greater cost.



The second and third alternatives only differ in that the second alternative would continue the relationship with the incumbent supplier, by contracting for system upgrades without conducting a competitive procurement. In the third alternative, the SFMTA would first competitively select a vendor and then implement a new system. In both of those scenarios, the SFMTA would later negotiate support services under separate contracts. If the SFMTA pursues a procurement-only contract with either the incumbent or a new CBTC supplier, the SFMTA will have no choice but to enter into a sole-source support contract with that same supplier after the procurement contract has been awarded. In both scenarios, the SFMTA will have lost the potential leverage to negotiate a support service contract on terms advantageous to the Agency. Additionally, the supplier may not agree to the terms the SFMTA deems necessary to improve subway performance.

Stakeholder Engagement

The SFMTA conducted extensive outreach to Agency staff from Operations, Transportation Management Center, Fleet, Safety, IT, Vehicle, Maintenance of Way, and Signal Maintenance groups, who provided input as to the scope of services, as well as desired and required CBTC functionality. Importantly, these stakeholders all identified reliability and maintainability as a priority for the new system. The procurement approach bundling performance-based support terms in the CBTC supplier contract was in part developed due to this stakeholder priority.

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. This project is in the early planning stages. As more design details become known, the Agency will reach out to the communities and stakeholders who may potentially be impacted by construction, as well as to the transit riders who will benefit from the improved rail service.

Funding Impact

The Train Control Upgrade Project will be funded through the SFMTA's Capital Improvement Program funds. Additionally, regional, state, and federal grants have been awarded to this project and more grant awards are expected. The total cost of the project including escalation, agency project staffing, consultant support, and third-party contracts, is estimated to be \$560,000,000.

In conclusion, we would like to thank you for your time and consideration of this legislation which will waive Administrative Code section 21.9(a)(2) (which prohibits departments from soliciting contracts with a term longer than 10 years) and approve an ordinance authorizing the SFMTA to issue a Request for Proposals for a contract for a new CBTC System with a term longer than 10 years.



Please let us know if you have any questions. We will be reaching out to offer briefings in advance of the Ordinance being heard in committee and look forward to discussing this with you further.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jeffrey P. Tumlin'.

Jeffrey P. Tumlin
Director of Transportation

From: [Conine-Nakano, Susanna \(MYR\)](#)
To: [STONE, ROB \(CAT\)](#); [BOS Legislation, \(BOS\)](#)
Cc: [Paulino, Tom \(MYR\)](#); [Martinsen, Janet \(MTA\)](#); [Sweet, Alexandra C. \(MYR\)](#); [Ramos, Joel \(MTA\)](#); [Howard, Dan \(MTA\)](#); [Bintliff, Jacob \(BOS\)](#); [Tam, Madison \(BOS\)](#)
Subject: Mayor -- Substitute Ordinance -- Train Control System
Date: Tuesday, September 27, 2022 4:17:10 PM
Attachments: [Mayor -- Substitute Ordinance -- Train Control System.zip](#)

Hello Clerks,

Attached for introduction to the Board of Supervisors is an ordinance 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 10 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.

The attached substitute ordinance will supersede File 220947.

[@STONE, ROB \(CAT\)](#), can you please reply-all to confirm your approval? Thanks!

Please note that Supervisors Mandelman and Dorsey are co-sponsors of this legislation.

Please let me know if you have any questions.

Sincerely,
Susanna

Susanna Conine-Nakano

Office of Mayor London N. Breed
City & County of San Francisco
1 Dr. Carlton B. Goodlett Place, Room 200
San Francisco, CA 94102
415-554-6147