

MONTHLY MONITORING REPORT
October 2022

Central Subway Project
San Francisco Municipal Transportation Agency
San Francisco, CA
FINAL

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REPORT FORMAT AND FOCUS

This report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract #69319519D000016, Task Order #69319520F300115. Its purpose is to provide information and data to assist FTA as it continually monitors the management capacity and capability of the San Francisco Municipal Transportation Agency (SFMTA) (the Project Sponsor) to execute the project efficiently and effectively. This report covers the project management activities on the Central Subway Project (CSP) managed by SFMTA and financed by the FTA Full Funding Grant Agreement (FFGA). The cost and schedule information in this report was extracted from SFMTA’s September 2022 Monthly Progress Report, except where noted. The report has been organized to comply with the requirements of updated Oversight Procedure 25—Recurring Oversight and Related Reports dated July 2020.

THIRD-PARTY DISCLAIMER

This report and all subsidiary reports are prepared solely for FTA. This report should not be relied upon by any party, except FTA or the Project Sponsor, in accordance with the purposes as described below.

For projects funded through the FTA FFGA program, FTA and its Project Management Oversight Contractor (PMOC) use a risk-based assessment process to review and validate a Project Sponsor’s budget and schedule. This risk-based assessment process is a tool for analyzing project development and management. Moreover, the assessment process is iterative in nature; any results of an FTA or PMOC risk-based assessment represent a “snapshot in time” for a particular project under the conditions known at that same point in time. The status of any assessment may be altered at any time by new information, changes in circumstances, or further developments in the project, including any specific measures a Project Sponsor may take to mitigate the risks to project costs, budget, and schedule, or the strategy a Project Sponsor may develop for project execution. Therefore, the information in the monthly reports will change from month to month, based on relevant factors for the month and/or previous months.

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1

 1.1. Project Description 1

 1.2. Project Status 1

 1.3. Major Issues and/or Concerns: 4

 1.4. Key Indicators Dashboard 5

 1.5. Core Accountability Items..... 5

2. OBSERVATIONS AND FINDINGS.....6

 2.1. Summary of Monitoring Activities..... 6

 2.2. Oversight Triggers..... 6

 2.3. Project Management Plan and Sub-plans 6

 2.4. Management Capacity and Capability..... 6

 2.5. National Environmental Policy Act Process and Environmental Mitigation 7

 2.6. Project Delivery Method and Procurement 7

 2.7. Design..... 7

 2.8. Value Engineering and Constructability Reviews..... 7

 2.9. Real Estate Acquisition and Relocation 7

 2.10. Third-Party Agreements and Utilities..... 7

 2.11. Construction..... 8

 2.12. Vehicle Technology and Procurement 10

 2.13. Project Cost..... 10

 2.14. Project Schedule 14

 2.15. Project Risk..... 16

 2.16. Quality Assurance/Quality Control 16

 2.17. Safety and Security 17

 2.18. Americans with Disabilities Act..... 18

 2.19. Buy America..... 18

 2.20. Start-up, Commissioning, Testing 18

ATTACHMENT A – LIST OF ACRONYMS 19

ATTACHMENT B – SAFETY AND SECURITY CHECKLIST 22

ATTACHMENT C – AWARDED CONTRACTS 26

ATTACHMENT D – PROJECT MILESTONES/KEY EVENTS..... 30

ATTACHMENT E – PROJECT MAP 31

LIST OF TABLES

Table 1 – Major Issues and/or Concerns.....4

Table 2 – Key Indicators Dashboard5

Table 3 – Core Accountability Items5

Table 4 – Forecast Construction Completion Dates for CSP Work Packages8

Table 5 – Current Estimate at Completion by Standard Cost Category11

Table 6 – Budget and Contingency Status for Central Subway Project¹13

Table 7 – Project Funding (as of *September 2022*).....14

Table 8 – Construction Safety Data17

1. EXECUTIVE SUMMARY

1.1. Project Description

The Central Subway Project (CSP) involves construction of a 1.7-mile extension of the San Francisco Municipal Transportation Agency (SFMTA) (the Project Sponsor) T Third Line along 4th Street and beneath Stockton Street in downtown San Francisco. The CSP is Phase 2 of SFMTA's T Third Line Light Rail Transit (LRT) Project. The CSP will extend the T Third Line from the 4th Street Caltrain Station to Chinatown, providing a direct rapid transit link from the Bayshore and Mission Bay areas to South of Market, Union Square, and downtown. Four new stations are being constructed as part of the project: an at-grade station at 4th and Brannan streets and three underground stations at Yerba Buena/Moscone Center (YBM) Station, Union Square/Market Street (UMS) Station, and Chinatown (CTS) Station. Four light rail vehicles (LRVs) are included in the budget for the CSP as part of a larger procurement that will expand the LRV fleet and includes options for replacement of the entire fleet. Average weekday riders are projected to be 43,521 in 2030. The Full Funding Grant Agreement (FFGA) project cost is \$1.578 billion.

1.2. Project Status

- Scope: There have been no changes in project scope.
- Schedule: Substantial completion of the contract was originally scheduled for February 10, 2018; however, the soft opening occurred on November 19, 2022, which is more than 1,400 days later than the original substantial completion date. SFMTA currently projects a full Revenue Service Date (RSD) of January 7, 2023.
- Cost: SFMTA reported a revised Estimate at Completion (EAC) of \$1.953 billion to reflect additional costs to compensate contractors and their subcontractors for direct costs and delay impacts of the additional work performed under change orders. The Project Management Oversight Contractor (PMOC) received an updated cost in Standard Cost Category (SCC) format from SFMTA.
- Significant Project Activities and/or Key Milestones:
 - SFMTA submitted an updated draft letter in April 2021 to the Federal Transit Administration (FTA) proposing a revised FFGA RSD and a revised EAC. The proposed RSD indicates an early RSD of March 31, 2022, and a late RSD of June 20, 2022, which provides a schedule float of about three months. In addition, the updated project EAC was \$1.891 billion. SFMTA submitted the updated EAC in FTA's SCC format in May 2021. The PMOC reviewed SFMTA's EAC and RSD, and shared the results of the review and its recommendations with SFMTA. It was the PMOC's opinion that SFMTA should develop a detailed Critical Path Method (CPM) schedule to include activities and sequences of system integration, start-up testing, and operational readiness. SFMTA developed the CPM schedule and submitted it to the

PMOC in August 2021. FTA shared the PMOC's review comments on the CPM schedule with SFMTA in September 2021. A PMOC/SFMTA schedule assessment workshop was held during the week of November 15, 2021. During the workshop, SFMTA shared the most current schedule, which included an updated RSD in September 2022, a date that represented a three-month delay from the previous RSD projection. SFMTA indicated that the delay was due primarily to the delay of Automated Train Control System (ATCS) testing. SFMTA then submitted an updated schedule in January 2022 that incorporated discussions/comments from the November 2021 workshop with FTA and the PMOC and provided the schedule information that the PMOC had requested. *On November 19, 2022, SFMTA achieved the CSP soft opening to the public.* Meanwhile, SFMTA will continue to work on the remaining scope after soft opening. *The currently projected date for full revenue service is January 7, 2023.*

- In January 2022, SFMTA stated that the SFMTA Board had approved an additional \$40 million to cover the additional project cost. With this approval, the total project cost was at \$1.931 billion. In April 2022, the PMOC received the breakdown of the current project cost of \$1.931 billion in SCC format as well as backup information for the additional cost. The current project cost does not account for the COVID-19-related claims that the contractor has submitted. The PMOC conducted a cost assessment in May 2022 and provided its resulting cost projection to FTA. In September 2022, SFMTA reported that the SFMTA Board authorized an additional \$22 million to cover the increased project cost.
- SFMTA indicated that since increasing numbers of SFMTA staff have taken the COVID-19 vaccine, COVID-19 cases have dwindled, and there have been no significant impacts on the project. SFMTA continues to implement safety protocol measures to minimize impacts related to COVID-19. In *October 2022*, SFMTA reported that minor COVID-19 impacts occurred that affected the punch list items. SFMTA is reviewing COVID-19-related claims submitted from the contractor.
- SFMTA indicated that, starting on April 1, 2021, the SFMTA Operational Group would, as part of the acceptance process, verify trackwork, clearance, and the dynamic envelope. SFMTA expected to start running the test train in April 2021. However, SFMTA indicated in May 2021 that, due to the modified substantial completion date, the acceptance process of systems by the Operational Group was taking longer than expected. It is the PMOC's opinion that SFMTA should include the acceptance process in the schedule in order to assess the impacts of this process on start-up and testing, as well as on the RSD. Train testing began in July 2021 and is currently ongoing. SFMTA indicated that an additional 25 staff were hired in August 2021 to support the

operational readiness process. However, SFMTA stated that approximately 100 operators were not vaccinated as of the City of San Francisco's vaccine mandate deadline of November 1, 2021, which, it stated, could potentially negatively impact the availability of resources needed to support the CSP operational readiness process. During the schedule assessment workshop in November 2021, SFMTA indicated that it would put a plan in place to ensure that the resources and training required for revenue service would be available at the RSD. However, SFMTA later indicated that, due to the negative impacts on ridership caused by COVID-19, some of the existing staff are available to support the CSP, if the progress of hiring and training of new staff to support revenue service gets behind schedule. SFMTA indicated in May 2022 that the issues regarding unvaccinated operators had been resolved. As of May 2022, there were 88 new positions to fill, and SFMTA's goal was to fill 80 percent of those new positions by the end of July 2022. SFMTA reported in August 2022 that the goal of hiring staff to fill 80 percent of the new positions was not met. *The staff of the California Public Utilities Commission (CPUC) has completed its evaluation of the Safety Certification Verification Report (SCVR) pertaining to the CSP, which SFMTA submitted on October 28, 2022. With some provisions noted in the CPUC's SCVR approval letter, dated November 14, 2022, passenger operations on the segment of the LRT line between Brannan Station and CTS may commence as requested, on November 19, 2022.*

- FTA informed SFMTA that the PMOC planned to start the Oversight Procedure (OP) 54 (Readiness for Service) review in April 2021. A list of documents required for the OP 54 review was transmitted to SFMTA, and SFMTA submitted the required documents. An OP 54 review status meeting was held in June 2021. The PMOC submitted the draft spot report for the OP 54 Part 1 review in August 2021. SFMTA and the PMOC met in August 2021 to discuss the PMOC's findings and recommendations. On October 15, 2021, SFMTA responded to the PMOC's OP 54 Part 1 review, and the PMOC reviewed and discussed SFMTA's responses during the onsite visit the week of November 15, 2021. The PMOC also reviewed security-sensitive documents. The PMOC began the OP 54 Part 2 review in March 2022. An OP 54 status meeting, with FTA, the PMOC, and SFMTA in attendance, was held on April 12, 2022, to discuss the OP 54 Part 2 review. *The PMOC concluded the OP 54 Part 3 review in November 2022 and submitted the final report on November 18, 2022.*
- As part of the global settlement, Tutor Perini Corporation (TPC) supplemented the electrical specialty subcontractor (Abbett) with additional resources, and progress on the traction power and Overhead Catenary System (OCS) work has greatly improved. As of October 2021, Abbett completed the OCS work in the tunnel and is now continuing on the remaining OCS work.

Significant signal work remains to be completed. It is the PMOC’s opinion that the lack of completion of the OCS work for the entire alignment will delay progress on systems integration and testing. In addition, the PMOC continues to express concerns regarding ongoing water intrusion issues at stations, especially in systems rooms. In December 2021, SFMTA concluded the water intrusion assessment for the YBM Traction Power Room floor. In January 2022, the OCS and signal installation was ongoing, but there were delays related to the procurement of OCS equipment. Water issues in the YBM Traction Power Room are critical to the advancement of the systems integration. On June 20, 2022, a fire incident occurred in the YBM Traction Power Room during testing. An investigation of the cause is ongoing. SFMTA replaced the equipment damaged by fire with spare parts. A report outlining SFMTA’s implementation of new safety measures and the remaining testing process was submitted to the San Francisco Fire Department (SFFD) and CPUC for review and approval. Once the SFFD and CPUC sign off on the report, SFMTA will resume testing. In September 2022, SFMTA reported that the replacement of equipment damaged by fire is continuing and that this work will impact the RSD. It is the PMOC’s opinion that completion of the entire CSP scope will occur in the first quarter of 2023, after the November 19, 2022 soft opening.

1.3. Major Issues and/or Concerns:

Table 1 – Major Issues and/or Concerns

| | |
|------------------------|--|
| Issue/Concern | Completion of remaining scope after soft opening |
| Date Identified | September 2022 |
| Status | Ongoing |
| Project Sponsor Action | SFMTA is prioritizing preparation for the soft opening. It is the PMOC’s opinion that completion of the entire CSP scope will be in the first quarter of 2023, after the November 19, 2022 soft opening. |
| PMOC Recommendation | The PMOC recommends that SFMTA develop a detailed “Remaining Scope” matrix as a management tool to ensure the entire FFGA scope is completed. |
| Issue/Concern | Resource availability of the electrical specialty subcontractor (Abbett) continues to be a major concern. SFMTA stated that resources required from Abbett to complete the OCS work on schedule are significantly lacking. SFMTA stated that, because the OCS work is on the critical path, a decision to resolve the issue needs to be made soon to prevent delays to the CSP schedule. Based on the current burn rate of payments to the contractor and the remaining contract value, Abbett needs to provide two or three times more resources than it is currently providing in order to meet the schedule. In addition, the availabilities of operators and other resources required to support the revenue service are critical. |
| Date Identified | June 2020 |
| Status | Closed – Abbett substantially completed the work in June 2022. |

1.4. Key Indicators Dashboard

Table 2 – Key Indicators Dashboard

| Project Sponsor: | | San Francisco Municipal Transportation Agency | | | |
|---|--|---|-----|--------------|---|
| Project Name: | | Central Subway Project | | | |
| Date: | | October 31, 2022 | | | |
| Project Detail | | | | | |
| Oversight Frequency: | | Monthly | | | |
| Element | Status | | | Prior Status | Issue or Concern |
| | ● G | ● Y | ● R | | |
| PMP | ● | | | ● | None |
| Management Capacity and Capability | ● | | | ● | None. |
| Cost* | | ● | | ● | SFMTA has updated the CSP EAC to include the reallocation of project funds and the global settlement. |
| Schedule | | ● | | ● | SFMTA to complete remaining scope by January 7, 2023. |
| Quality | ● | | | ● | None. |
| Safety | ● | | | ● | None. |
| Risk | | ● | | ● | SFMTA to complete remaining scope by January 7, 2023. |
| Legend | | | | | |
| Green | Satisfactory: No Corrective Action necessary. | | | | |
| Yellow | Caution: Risk/Issues exist. Corrective Action may be necessary. | | | | |
| Red | Elevated for immediate Corrective Action: Significant risk to the health of the project. | | | | |

*Note: With regard to cost, the colors indicate the following status:

Yellow – Forecast cost exceeds the project budget by up to 3%.

Red – Forecast cost exceeds the project budget by more than 5%.

1.5. Core Accountability Items

Table 3 shows the core accountability items for the project, including the status of the project and the major issues and how they are being addressed.

Table 3 – Core Accountability Items

| | | Original (Grant) | Current Forecast | PMOC Assessment of Current Forecast | |
|--------------------------------|-------------------------|--|------------------------------|--|-------|
| Cost | Capital Cost Estimate | \$1,578,300,000 | \$1,953,000,000 | <i>Acceptable</i> | |
| Contingency | Unallocated Contingency | \$74,722,000 | \$43,316 | <i>Acceptable</i> | |
| | Total Contingency | \$185,500,000 | \$43,316 | <i>Acceptable</i> | |
| Schedule | Revenue Service Date | 12/26/2018 | 1/7/2023 (SFMTA forecast) | Optimistic | |
| Project Progress | | | Amount (\$) | Percent of Total | |
| Total Expenditures | | Actual cost of all eligible expenditures completed to date | | \$1,928,477,518 | < 99% |
| Planned Cost to Date | | Actual value of work completed to date | | \$1,593,491,019 | 94.8% |
| Contract Status | | | Amount (\$) | Percent of Total | |
| Total Contracts Awarded | | Value of all contracts (design, support, construction, equipment) awarded; 0% of total value to be awarded | | \$1,510,671,335 | 100% |

| | | | |
|---|---|--------------------|----------------------|
| Construction Contracts Awarded | Value of construction contracts awarded; 0% of total construction value to be awarded | \$1,139,532,783 | 100% |
| Physical Construction Completed | Earned value of physical construction (infrastructure) completed; % of total construction value completed | \$1,522,636,994 | 95.6% |
| Rolling Stock Vehicle Status | Date Awarded | No. Ordered | No. Delivered |
| | 2017 | 24 | 24 |
| Next Quarterly Progress Review Meeting Date: | To Be Determined (TBD) | | |

Source: SFMTA CSP Monthly Progress Report for *September 2022*.

2. OBSERVATIONS AND FINDINGS

2.1. Summary of Monitoring Activities

- *October 2022* – Weekly Schedule Review Meeting and Monthly PMOC/SFMTA Meeting
- This report reflects financial information SFMTA provided in *November 2022* (*financial cutoff date of September 30, 2022*) and information obtained in the above-referenced meetings.

Note: Items that have changed from the previous month's report are indicated in italics. Other information is unchanged.

2.2. Oversight Triggers

Not Applicable (NA).

2.3. Project Management Plan and Sub-plans

SFMTA delivered an update of the Project Management Plan (PMP) in April 2019. FTA did not request a comprehensive review of the PMP by the PMOC.

2.4. Management Capacity and Capability

2.4.1. Agency Staff

SFMTA appointed a permanent program director for the CSP in July 2019. Transition from the acting director began the week of July 15, 2019. The permanent program director attended the SFMTA Quarterly Progress Review Meeting (QPRM) held on August 8, 2019. In November 2019, SFMTA appointed a permanent Director of Transportation, who started in his position on December 16, 2019.

2.4.2. Contractor Staff

There were no changes in the contractor's management staff.

2.5. National Environmental Policy Act Process and Environmental Mitigation

The PMOC received the First Quarter 2018 Mitigation Monitoring Reporting Program update from SFMTA on July 10, 2018. The PMOC's review of the report indicates that SFMTA continues to meet its commitments for monitoring and mitigation of project impacts.

2.6. Project Delivery Method and Procurement

The project delivery method is Design-Bid-Build.

2.7. Design

Design is complete.

2.8. Value Engineering and Constructability Reviews

All contracts are under construction.

2.9. Real Estate Acquisition and Relocation

SFMTA has acquired all project right-of-way, and all commercial and residential relocations are complete.

SFMTA submitted the Real Estate Acquisition Management Plan (RAMP) Revision 5, dated September 26, 2013, to FTA on November 19, 2013. SFMTA has acquired all required real estate for the project in accordance with the RAMP.

2.10. Third-Party Agreements and Utilities

2.10.1. Bay Area Rapid Transit

There are no updates to report related to Bay Area Rapid Transit.

2.10.2. California Public Utilities Commission

The staff of the CPUC has completed its evaluation of the CSP's SCVR, which SFMTA submitted on October 28, 2022. With some provisions noted in the CPUC's SCVR approval letter, dated November 14, 2022, passenger operations on the segment of the LRT line between Brannan Station and CTS may commence as requested, on November 19, 2022.

2.10.3. San Francisco Public Utilities Commission

There are no updates to report.

2.10.4. San Francisco Department of Public Works

The San Francisco Department of Public Works (SFDPW) inspects completed street and sidewalk facilities that the contractor has proposed to release to the city. SFDPW develops punch lists of required repairs that the contractor must complete before acceptance of the streets and sidewalks. SFMTA is following the SFDPW guidelines.

2.10.5. San Francisco Parks and Recreation Department

There are no updates to report.

2.10.6. Private Property Owners

All real estate acquisitions are complete. There will be a need to extend the duration of some of the licenses for compensation grouting. A number of private property owners and businesses have issued claims for damage associated with the project construction. The builder’s insurance policies maintained by the contractor cover the costs associated with these claims, and the contractor has demonstrated improved responsiveness to damage claims that are associated with ongoing construction work.

2.11. Construction

Contract 1250 (UR #1). This completed contract relocated utilities within the footprint of the proposed YBM.

Contract 1251 (UR #2). This completed contract included the relocation of utility lines within the footprint of the proposed UMS and temporarily rerouted existing trolley coach lines around the construction zone.

Contract 1252 Tunnel. This completed contract included the construction of 1.5 miles of twin tunnels excavated by tunnel boring machines and construction of the tunnel portal, retrieval shaft, and five cross-passages. Final completion has been achieved, and final contract closeout is finished. SFMTA presented the final cost data for the contract at the August 2018 QPRM. Not including costs of extra work paid from non-project sources, the final cost of the CSP tunneling work was \$233,511,253, but the most current EAC for this work is \$234,967,069. When SFMTA reconciles the final contract cost with the program budget, about \$1.4 million in additional unallocated contingency should be available as a result of the final cost of the tunneling work being well below the current allocated budget for the work. The amount of \$1.4 million has already been transferred to unallocated contingency.

Contract 1300 (Combination of UMS, CTS, and YBM stations, and Surface, Track, and Systems [STS]). This contract includes the construction of three underground stations, one surface station, all surface works required for the installation of LRT between 4th and King streets and the tunnel portal, and all LRT track and systems components.

Table 4 shows the August 2022 forecast dates for completion of construction for each Contract 1300 work package.

Table 4 – Forecast Construction Completion Dates for CSP Work Packages

| Work Package | <i>September 2022 Forecast Construction Completion Date</i> |
|---|---|
| 1253 – Union Square/Market Street Station | 1/18/2023 |
| 1254 – Chinatown Station | 12/21/2022 |
| 1255 – Yerba Buena/Moscone Center Station | 12/26/2022 |
| 1256 – Surface, Track, and Systems | 12/27/2022 |

Source: SFMTA CSP Monthly Progress Report for September 2022.

UMS: The contractor completed waterproofing on the platform and intermediate strut levels. The contractor completed replacing damaged conduits and pull boxes in the main electrical room and on the platform level. The contractor continued signage installation on the concourse level. The contractor continued upgrading the plaza in accordance with the requirements of the Mayor's Office on Disability. The contractor continued the installation of courtesy phones. The demolition of the sidewalk on Stockton Street for light pole foundation is ongoing.

CTS: The contractor continued preparing the elevators and escalators for state inspection. The contractor continued the installation of fare gates and the installation of signage at all levels. The contractor continued closing out internal punch list items. The contractor completed testing of the Security System and the Access Control System. The contractor continued the installation of cables for cellular service, phones, and radio.

YBM: The contractor completed Supervisory Control and Data Acquisition (SCADA) testing. The contractor continued all work for traction power equipment testing. The contractor continued closing out punch list items at all levels. The contractor completed the terrazzo slope at the platform level. The contractor is completing installation of MET phones at the concourse level and in the Traction Power Room. The contractor completed installing DC gear cabinets and the wire works at lineup 2 inside the Traction Power Room. The contractor continued installing the directional signage and covering stainless steel on Ticket Vending Machine gaps.

STS: The contractor continued installing the OCS for streetlights at various locations. The contractor completed installing traffic signals. The contractor continued closing out punch list items.

Systems and Track

Work on track had been suspended pending delivery of new track to replace the nonconforming rail supplied by the contractor. The track was delivered at the end of October 2019 and was stored on 4th Street. Installation of the replacement track was completed during the first quarter of 2021. SFMTA retained ownership of the nonconforming rail and is working with project representatives for the Sacramento Streetcar project to potentially transfer ownership of the rail for use on that project. The contractor continued platform construction at 4th Street and Brannan Street. It continued installation of traction power conduit and other electrical conduit inside the tunnel for Closed Circuit Television (CCTV), telephone, tunnel lighting, and tunnel electrical power. The contractor continued traction power cable installation, terminations, and installation of cross bonds throughout the tunnel. It continued testing of the ATCS and the radio system. The contractor continued fiber system installation and terminations in communications rooms and continued Fire Department Connection installation near the 4th Street portal.

Tunnel Work

The electrical subcontractor is nearing completion on installing conduits and OCS support equipment and pulling and terminating cable in the tunnels.

2.12. Vehicle Technology and Procurement

The four LRVs for the CSP have been delivered and accepted by SFMTA. An additional 24 LRVs for near-term fleet expansion (four for service to the new Warriors Arena) and 151 LRVs for fleet replacement are in various stages of production and delivery. SFMTA has identified which of the new cars are considered to be funded by the CSP and will provide information on the date they are placed into revenue service for ongoing tracking of these assets in which the federal government has a financial interest.

2.13. Project Cost

2.13.1. Project Cost Control Systems

SFMTA continues to maintain the Trend Log and logs of Change Order Requests (CORs), Proposed Contract Changes (PCCs), Notices of Potential Claim (NOPCs), and Certified Claims for Contract 1300 using CM13. The Trend Log includes all potential changes in contract value, including items that, in the opinion of the CSP staff, are not merited and new items for which merit has not been determined. The contract change management log includes CORs that have been determined to have merit as well as agency-initiated PCCs that are progressing through negotiations toward a Contract Modification (CMod). The NOPC Log and the Certified Claims Log include CORs rejected by SFMTA for which the contractor expects to submit or has submitted a claim.

2.13.2. Project Cost

In its *September 2022* Monthly Progress Report, SFMTA reported that the project EAC has been revised to \$1.953 billion, which represents a \$22 million increase from the \$1.931 billion reported on January 13, 2022, as part of the SFMTA Board authorization. CMod 143 (also known as Omnibus No. 3) in the amount of \$27.9 million was approved to compensate contractors and their subcontractors for direct costs and the delay impacts of the additional work performed under change orders.

Table 5, provided by SFMTA in *October 2022*, shows the current EAC by SCC.

Table 5 – Current Estimate at Completion by Standard Cost Category

| SCC | Description of Project Elements | EAC (million) |
|--|--|--------------------------|
| 10 | GUIDEWAY & TRACK ELEMENTS | \$ 284 |
| 20 | STATIONS, STOPS, TERMINALS, INTERMODAL | \$ 576 |
| 40 | SITework & SPECIAL CONDITIONS | \$ 531 |
| 50 | SYSTEMS | \$ 123 |
| 60 | ROW, LAND, EXISTING IMPROVEMENTS | \$ 32 |
| 70 | VEHICLES | \$ 17 |
| 80 | PROFESSIONAL SERVICES | \$ 388 |
| 90 | UNALLOCATED CONTINGENCY | \$ 2 |
| Total Central Subway Project Budget | | \$ 1,953 |

SFMTA modified its project cost reporting schedule for some of the categories below. Some categories are updated only on a quarterly basis. The PMOC will continue to update the amounts accordingly. The data date for the amounts listed below, as reported by SFMTA, is *September 30, 2022*.

EAC: \$1.953 billion

Total contingency: \$0.2 million

SFMTA reported the following amounts:

Actual Cost (AC): \$1,928,477,518

Current funding level: \$1,934,565,000

Earned Value (EV): \$1,522,636,994

Cost Performance Index (CPI): 0.79

SFMTA is reporting the CPI as a measure of cost efficiency on the project. It is the ratio of EV to AC. A CPI equal to or greater than 1.0 indicates a cost underrun, and a CPI of less than 1.0 indicates a trend towards a cost overrun. The PMOC recommends that SFMTA update the CPI to reflect the EAC based on the current project cost and schedule projections, including outstanding claims and COVID-19 impacts.

2.13.3. Project Cost Trends

SFMTA tracks potential changes in project cost, calling these potential changes “trends.” Trends include all potential changes in a contract’s value. As the status of an identified trend changes, it may become a contract modification, or CMod; it may become an item that is paid on a force account basis; or it may be denied/closed with no impact to the project cost. Extra cost items identified by the Contract 1300 contractor that CSP management concludes have no merit are carried in the total trend amount at a lower value than the contractor’s estimate of extra costs, and the value reflects SFMTA’s assessment of the likelihood that the change would ultimately be approved through the contract dispute resolution process.

Table 6 shows the overall budget, trends, and contingency status for the entire CSP program. Note that the values in Table 6 reflect the project status as of the end of As September 2022, as reported in SFMTA’s CSP Monthly Progress Report. Claims and denied CORs are not included in the cost forecast in Table 6.

2.13.4. Change Order Control

SFMTA is maintaining its management tools for tracking potential contract changes, such as executed change orders for Contract 1300. As of the September 2022 reporting period, SFMTA reports the value of the approved changes at *\$430.4 million*, which is part of the current project cost of \$1.953 billion. The value of potential additional changes is currently *\$11 million*.

2.13.5. Cost Contingency

The total available unallocated contingency (approved contingency less approved contract changes) reported is *\$43,316*.

Table 6 – Budget and Contingency Status for Central Subway Project¹

¹ Data reported in SFMTA’s September 2022 CSP Monthly Progress Report (reformatted by the PMOC).

| COST ELEMENT | CONTRACT COST | | | | | CONTINGENCY | | | | | BUDGET |
|---|--|--------------------|------------------------|-------------------|------------------------------|---|----------------------------------|--|---|--|--|
| | ORIGINAL CONTRACT VALUE / September 2013 SUPPLEMENTAL BUDGET | APPROVED CHANGES | CURRENT CONTRACT VALUE | POTENTIAL CHANGES | ESTIMATE AT COMPLETION (EAC) | ORIGINAL CONTINGENCY / Sep 2013 SUPPLEMENTAL CONTINGENCY (Include CN 1250 & CN1251) | CONTINGENCY ADJUSTMENT TRANSFERS | REVISED AUTHORIZED CONTINGENCY (Include CN1250 & CN1251) | REMAINING CONTINGENCY AFTER APPROVED CHANGES DEDUCTED | REMAINING CONTINGENCY AFTER POTENTIAL CHANGES DEDUCTED [i - d] | ORIGINAL CONTRACT VALUE + REVISED AUTHORIZED CONTINGENCY |
| | a | b | [a + b] | d | [c + d] | f | g | [f + g] | [h - b] | i | [a + h] |
| SCC 10-50 CONSTRUCTION CONTRACT PACKAGES | | | | | | | | | | | |
| 1250 UTILITY RELOCATION PACKAGE #1 | 9,273,939 | 2,694,211 | 11,968,150 | | 11,968,150 | 1,953,377 | 740,834 | 2,694,211 | | | 11,968,150 |
| Contract 1250 Department of Technology | 166,756 | | 166,756 | | 166,756 | | | | | | 166,756 |
| 1251 UTILITY RELOCATION PACKAGE #2 | 16,832,550 | 3,836,531 | 20,669,081 | | 20,669,081 | 5,367,297 | (1,536,766) | 3,836,531 | | | 20,669,081 |
| Contract 1251 Department of Technology | 75,615 | | 75,615 | | 75,615 | | | | | | 75,615 |
| 1252 GUIDEWAY TUNNEL STATIONS | 233,584,015 | (72,762) | 233,511,253 | - | 233,511,253 | 23,658,464 | (23,731,226) | (72,763) | | | 233,511,253 |
| 1300 1253 UNION SQUARE/MARKET ST STATION [UMS] | 839,676,460 | 331,585,240 | 1,171,261,640 | 10,969,222 | 1,182,230,862 | 20,000,000 | 388,655,037 | 328,655,037 | (20,966,912) | (31,936,134) | 1,169,331,437 |
| 1254 CHINA TOWN STATION [CTS] | 294,030,590 | 17,512,856 | 311,543,446 | 20,582 | 311,564,028 | 5,000,000 | 15,000,000 | 20,000,000 | 2,487,144 | 2,466,562 | 314,030,590 |
| 1255 YEWSA BUENA/ MOSCOW STATION [YBM] | 247,567,810 | 156,181,923 | 403,749,733 | 5,739,437 | 409,489,170 | 5,000,000 | 138,679,388 | 144,679,388 | (11,592,535) | (17,241,972) | 392,247,198 |
| 1256 SURFACE TRACKWORK & SYSTEMS [STS] | 158,989,090 | 4,889,959 | 163,879,049 | 64,877 | 163,943,926 | 5,000,000 | 10,000,000 | 15,000,000 | 10,110,041 | 10,045,164 | 173,989,090 |
| OTHER | 139,989,090 | 153,090,502 | 292,989,592 | 5,144,326 | 298,133,918 | 5,000,000 | 143,975,649 | 148,975,649 | (22,061,562) | (27,205,889) | 288,964,649 |
| SCC 10 - 50 Construction Sub-total | 1,143,472,763 | 374,077,291 | 1,514,550,074 | 10,969,222 | 1,525,519,296 | 53,035,782 | 389,431,945 | 370,009,626 | (22,194,392) | (33,873,615) | 1,510,482,388 |
| SCC 60-80 SOFT COSTS PACKAGES | | | | | | | | | | | |
| 60 ROW, LAND, EXISTING IMPROVEMENTS | 38,511,799 | (4,295,478) | 32,246,321 | | 32,246,321 | 1,000,000 | (1,000,000) | 0 | 0 | 0 | 32,246,321 |
| 70 VEHICLES | 24,168,712 | (7,398,712) | 16,800,000 | | 16,800,000 | 2,276,341 | (7,076,841) | (4,800,000) | (4,800,000) | (4,800,000) | 12,000,000 |
| 80 PROFESSIONAL SERVICES | 319,518,041 | 67,916,349 | 378,434,383 | | 378,434,383 | 18,221,079 | (16,862,627) | 1,358,422 | 1,358,422 | 1,358,422 | 379,792,805 |
| SCC 60 - 80 Construction Sub-total | 371,138,552 | 56,342,152 | 427,480,704 | 0 | 427,480,704 | 21,498,020 | (34,939,598) | (3,441,578) | (3,441,578) | (3,441,578) | 424,039,126 |
| SCC 90 UNALLOCATED CONTINGENCY | | | | | | 3,845,945 | (384,319,285) | (380,473,340) | 43,316 | 43,316 | 43,316 |
| TOTAL | 1,511,611,335 | 430,419,443 | 1,942,030,778 | 10,969,222 | 1,953,000,000 | 78,379,747 | (19,826,038) | 66,094,688 | (36,158,555) | (36,158,555) | 1,934,564,830 |

2.13.6. Funding

Table 7 shows federal, state, and local project funding and total funds awarded to date for the CSP.

Table 7 – Project Funding (as of September 2022)

| Funding Available Table | | |
|--------------------------------|----------------------------------|------------------------------------|
| | Funding | |
| | Committed Funding Sources | Total Awarded Funds to Date |
| Federal | | |
| Sect. 5309-NS | \$942,200 | \$965,336 |
| Sect. 5307-OBAG | \$15,980 | \$15,980 |
| CMAQ | \$41,025 | \$41,025 |
| Federal Subtotal | \$999,205 | \$1,022,341 |
| State | | |
| LCTOP | \$4,000 | \$4,000 |
| TCRP | \$14,000 | \$14,000 |
| State RIP | \$12,498 | \$12,498 |
| Prop. 1B (I-Bond) PTIMSE | \$308,601 | \$313,989 |
| Prop. 1A (HSR-Bond) | \$61,308 | \$61,308 |
| State Subtotal | \$400,407 | \$405,795 |
| Local | | |
| Operating | \$4,970 | \$0 |
| MTA | \$0 | \$338,922 |
| Prop. B Pop Baseline | \$26,985 | \$24,824 |
| Prop. K | \$143,542 | \$138,692 |
| TSF Transit | \$3,191 | \$3,991 |
| Local Subtotal | \$178,688 | \$506,430 |
| CPT 544 Total | \$1,578,300 | \$1,934,565 |

Source: SFMTA CSP Monthly Progress Report for September 2022.

2.14. Project Schedule

The critical path for the construction work still flows through the STS installation; start-up; and testing, commissioning, and pre-revenue activities.

Project schedule data (as of the end of September 2022) is as follows:

The project’s EV is \$1,522,636,994, and its Planned Value (PV) is \$1,593,491,019. The project’s Schedule Performance Index (SPI) is 0.95. SPI is a measure of schedule efficiency on a project that is the ratio of EV to PV. An SPI equal to or greater than 1.0 indicates more work was completed than planned, and a value of less than 1.0 indicates less work was completed than planned. An SPI equal to or greater than 0.9 reflects satisfactory performance, considering the margin of error in estimating both EV and PV.

2.14.1. Schedule Contingency

All contingency in the schedule has been consumed, and there are more than 48 months of negative float from the baseline schedule. SFMTA submitted an FFGA Schedule Extension letter to FTA on December 6, 2018, with a request to extend the FFGA RSD to May 26, 2020, and FTA issued

an approval letter on February 27, 2019. The schedule that SFMTA submitted, dated May 2021, forecasted an RSD of May 5, 2022. In April 2021, SFMTA issued a revised FFGA Schedule Extension Letter requesting an additional extension for an early RSD of March 31, 2022, and a late RSD of June 20, 2022. As of the date of the latest schedule, SFMTA is reporting *January 7, 2023*, as the RSD.

2.14.2. Critical Path Summary

Baseline Schedule:

CTS Install Guide Walls, Slurry Walls, and Install Surface Deck – Complete

CTS Excavate Headhouse and Bracing – Complete

CTS Sequential Excavation Method and Install Supports – Complete

CTS Headhouse Structural Concrete/Remove Bracing – Underway

CTS Start-up and Testing – Testing of traction power and train control components started in April 2021.

CTS P-1254R Commissioning of Station – Ongoing

Safety and Security Certification/Pre-revenue Activities – Safety and security certification/pre-revenue service activities started in June 2021 and are substantially complete by the end of the third quarter of 2022.

RSD on December 26, 2018 – Currently forecast of full revenue service for January 7, 2023

Current Schedule Critical Path Activities:

Install OCS – Remove/install cross spans in Brannan and Townsend streets

Install OCS – Install OCS trolley wire from Townsend Street to 5th Street

Prepare/Submit: Sub-systems Maintainability Analysis – Surface signaling system

Install OCS – Install OCS trolley wire in 4th and Townsend streets

Install OCS – Install OCS trolley wire in 5th Street from Brannan Street to 4th Street

Startup and Testing – Tunnel and ATCS

Safety and Security Certification and Pre-Revenue Activities

2.14.3. Three-month Look-ahead

The following activities are planned over the next three months:

Contract 1300

UMS P-1253:

- Completion of:
 - Cleaning of the station

- Closeout of punch list items
- Operational readiness testing

CTS P-1254R:

- Obtaining of San Francisco Department of Building Inspection final sign-offs
- Obtaining of SFFD final sign-offs
- Obtaining of Occupational Safety and Health Administration (OSHA) certifications
- Completion of the safety certification checklist field items

YBM P-1255:

- Completion of:
 - Traction power SCADA testing

STS P-1256:

- Continuation of OCS, track, and miscellaneous punch list work

2.15. Project Risk

SFMTA conducts monthly meetings to review the status of identified risks, monitor the implementation of mitigation measures, identify new risks, and evaluate the probability and potential impacts of existing and newly identified risks.

SFMTA listed the following top risks:

- Risk 267 – Potential water leaks at UMS
- Risk 255 – Water leaks at YBM, including water in conduits
- Risk 256 – Potential water leaks at CTS
- Risk 266 – Outstanding submittals and resubmissions related to safety and security certification requirement not being addressed

SFMTA has been applying updated schedule risks to a Monte Carlo analysis of the program schedule in order to establish a range of likely construction completion dates and RSDs. SFMTA issued a revised FFGA Schedule Extension Letter requesting an extension of the RSD. SFMTA currently forecasts the RSD to be *January 7, 2023*.

2.16. Quality Assurance/Quality Control**2.16.1. Quality Assurance/Quality Control Plan Implementation**

According to planning for quality assurance/quality control (QA/QC), the Contract 1300 contractor's staff includes a Contractor's Quality Manager (CQM), who reports to the contractor's management at an organizational level superior to the contractor's Project Manager. The CQM is provided by a subcontractor. The reporting structure is designed to provide the CQM with direct access to the

contractor’s Principal Officers. A Contractor Non-conformance Report (CNCR) Log for identifying, correcting, documenting, and controlling non-conformances is maintained by the contractor and reviewed at weekly status meetings for each work package. For any work that is the subject of a Corrective Action Request, subsequent work activities are not allowed to progress until the conditions that are averse to quality are corrected. If the contractor does not issue a CNCR, SFMTA may issue a Non-conformance Notice (NCN), in which SFMTA’s QA staff identifies the nonconforming work.

As of October 2022, TPC’s Quality Manager had filed 603 CNCRs. During October 2022, four new CNCRs were opened, three were dispositioned, and two were closed. Twenty-five CNCRs are currently posted to the CNCR Log as OPEN. The Quality Engineer has issued 57 NCNs.

2.17. Safety and Security

2.17.1. Safety and Security Management Plan

An updated Safety and Security Management Plan (SSMP) Revision 2, dated February 2, 2014, was submitted to FTA on May 2, 2014. The SSMP outlines the plans needed prior to revenue operations. These plans include the Rail Activation Plan (RAP), the System Integration Test Plan, the Safety and Security Certification Plan (SSCP), and the Pre-Revenue Operations and Start-up Plan. SFMTA has completed the SSCP, which is being used to guide safety certification activities. The initial draft of the RAP was completed along with the latest update of the PMP. SFMTA has hired a Start-up and Testing Manager for the CSP program.

2.17.2. Fire and Life Safety/Safety and Security Issues

The Construction Specification Conformance Checklists have been completed and approved for all construction packages. In September 2013, the CPUC staff began attending monthly as-built meetings to review the completed items. All items related to the tunnel construction have been certified and accepted by SFMTA’s safety staff.

2.17.3. Construction Safety

No recordable safety-related incidents were reported in October 2022. The performance metrics relating to accidents per working hour remain well within the OSHA goals for similar construction. The last incident statistics received from SFMTA are through June 30, 2022, and are shown in Table 8, as well as where they are NA.

Table 8 – Construction Safety Data

| Through June 30, 2022 | Number of Incidents | Incident Rate ¹ | Goal |
|--|---------------------|----------------------------|------|
| Contract 1300 | | | |
| OSHA Recordable Accidents | 47 | 1.98 | <3.4 |
| Job Transfer/Restricted Duty Incidents | 0 | 0.00 | NA |
| Lost Time Incidents | 11 | 0.46 | <1.6 |
| Total Incidents | 58 | 2.44 | NA |
| Hours Worked | 4,758,942 | | |

¹ OSHA incident rate = incidents x 200,000/hours worked.

2.18. Americans with Disabilities Act

There are no Americans with Disabilities Act issues for the project at this time.

2.19. Buy America

There are no Buy America issues.

2.20. Start-up, Commissioning, Testing

SFMTA submitted a draft of the RAP in April 2019. A conference call was held in June 2019 between SFMTA and the PMOC’s System Integration Manager, as part of the monthly recurring call, to discuss the required documentation for OP 54 (Readiness for Service).

ATTACHMENT A – LIST OF ACRONYMS

| | |
|------|---|
| AC | Actual Cost |
| ATCS | Automated Train Control System |
| BRT | Bus Rapid Transit |
| CCTV | Closed Circuit Television |
| CFR | Code of Federal Regulations |
| CLIN | Contract Line Item Number |
| CMGC | Construction Manager/General Contractor |
| CMod | Contract Modification |
| CNCR | Contractor Non-conformance Report |
| COR | Change Order Request |
| CPI | Cost Performance Index |
| CPM | Critical Path Method |
| CPUC | California Public Utilities Commission |
| CQM | Contractor's Quality Manager |
| CSP | Central Subway Project |
| CSSP | Construction Safety and Security Plan |
| CTS | Chinatown Station |
| DBE | Disadvantaged Business Enterprise |
| DBOM | Design, Build, Operate, and Maintain |
| DF | Designated Function |
| EAC | Estimate at Completion |
| EV | Earned Value |
| FD | Final Design |
| FFGA | Full Funding Grant Agreement |
| FRA | Federal Railroad Administration |
| FTA | Federal Transit Administration |
| LRT | Light Rail Transit |
| LRV | Light Rail Vehicle |
| NA | Not Applicable |
| NCN | Non-conformance Notice |

| | |
|-------|---|
| NOPC | Notice of Potential Claim |
| NTP | Notice to Proceed |
| OCS | Overhead Catenary System |
| OP | Oversight Procedure |
| OSHA | Occupational Safety and Health Administration |
| PCC | Proposed Contract Change |
| PE | Preliminary Engineering |
| PMOC | Project Management Oversight Contractor |
| PMP | Project Management Plan |
| PV | Planned Value |
| QA/QC | Quality Assurance/Quality Control |
| QPRM | Quarterly Progress Review Meeting |
| RAMP | Real Estate Acquisition Management Plan |
| RAP | Rail Activation Plan |
| ROD | Record of Decision |
| RSD | Revenue Service Date |
| SBE | Small Business Enterprise |
| SCADA | Supervisory Control and Data Acquisition |
| SCC | Standard Cost Category |
| SCVR | Safety Certification Verification Report |
| SEPP | Security and Emergency Preparedness Plan |
| SFDPW | San Francisco Department of Public Works |
| SFFD | San Francisco Fire Department |
| SFMTA | San Francisco Municipal Transportation Agency |
| SPI | Schedule Performance Index |
| SSCP | Safety and Security Certification Plan |
| SSMP | Safety and Security Management Plan |
| SSPP | System Safety Program Plan |
| STS | Surface, Track, and Systems |
| TBD | To Be Determined |
| TPC | Tutor Perini Corporation |

UMS Union Square/Market Street Station
YBM Yerba Buena/Moscone Center Station

ATTACHMENT B – SAFETY AND SECURITY CHECKLIST

| Project Overview | | | |
|---|--------------------|--|--|
| Project Mode (Rail, Bus, BRT, Multimode) | Light Rail Transit | | |
| Project Phase (Project Development, Engineering, Construction, Start-up) | Construction | | |
| Project Delivery Method (Design/Build, DBOM, CMGC, etc.) | Design-Bid-Build | | |
| Project Plans | Version | Review by FTA | Status |
| Safety and Security Management Plan (SSMP) | 2014 | 2011 | Revision 1 Update submitted to FTA on February 23, 2011. Not submitted to Federal Railroad Administration (FRA). Revision 2 submitted to FTA on May 2, 2014. |
| Safety and Security Certification Plan (SSCP) | 2011 | | SSCP was revised in October 2011. Revision 1 was developed in November 2011. Not submitted to FRA. |
| System Safety Program Plan (SSPP) | 2009 | 2009 | SSPP dated 03/13/2009 was submitted to FTA on 07/31/2009. Not submitted to FRA. |
| System Security Plan or Security and Emergency Preparedness Plan (SEPP) | 2009 | | Not submitted to FTA. Not submitted to FRA. |
| Construction Safety and Security Plan (CSSP) | 2012 | | Health and Safety Construction Safety Standards Revision 3, 06/27/2012. |
| Area of Focus | Y/N | Notes/Status | |
| Safety and Security Authority | | | |
| Is the project sponsor subject to 49 CFR Part 659 state safety oversight requirements? | Y | | |
| Has the state designated an oversight agency as per 49 CFR Part 659.9? | Y | California Public Utilities Commission (CPUC) Consumer Protection & Safety Division 505 Van Ness Avenue San Francisco, CA 94102 (415) 703-1017 phone (415) 703-1758 fax Point of contact: Arun Mehta | |
| Has the oversight agency reviewed and approved the project sponsor’s Security Plan or SSPP as per 49 CFR Part 659.17? | Y | SFMTA currently operates its Light Rail Transit (LRT) system in compliance with an SSPP approved by the CPUC. These plans will be revised, as required, to incorporate the addition of the CSP during the late construction and early testing phase and submitted to the CPUC for approval prior to the planned start of revenue operations. | |
| Did the oversight agency participate in the last Quarterly Review Meeting? | N | | |
| Has the project sponsor submitted its safety certification plan to the oversight agency? | Y | SFMTA submitted the SSCP to CPUC staff for review and Commission approval during the preliminary engineering phase. The plan was approved in March 2009. The SSCP that was revised in November 2011 was submitted to the CPUC and was approved. | |

| | | |
|---|----|---|
| | | CPUC attends monthly certification review meetings conducted by SFMTA. |
| Has the project sponsor implemented security directives issues by the Department Homeland Security and/or Transportation Security Administration? | NA | Currently, there are no Transportation Security Administration directives or programs applicable to the project. If any arise during the course of the project, the activities to comply will be developed and shown on a revision of the project safety and security activities schedule. |
| SSMP Monitoring | | |
| Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project? | Y | The PMOC reviewed the CSP SSMP and provided a spot report to FTA in May 2011. FTA approved the CSP SSMP on May 16, 2011. A follow-up Adherence Audit was conducted September 14 through 16, 2011. The audit found that CSP is conducting its activities in accordance with the SSMP. |
| Does the project sponsor review the SSMP and related project plans to determine if updates are necessary? | Y | SSMP Revision 2 was submitted to FTA on May 2, 2014. |
| Does the project sponsor implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify. | Y | Safety and security are under the direction of the SFMTA Safety and Security Manager and supplemented by Project Management/Construction Management consultant staff, including a Safety and Security Certification professional who has been dedicated to supervising project safety and security certification. |
| Does the project sponsor maintain a regularly scheduled report on the status of safety and security activities? | Y | Safety and security certification status and activities are reported in the weekly construction progress meetings and the CSP Monthly Progress Report. |
| Has the project sponsor established staffing requirements, procedures, and authority for safety and security activities throughout all project phases? | Y | |
| Does the project sponsor update the safety and security responsibility matrix/organizational chart as necessary? | Y | The PMOC found the revised matrix in the SSMP, Rev. 1, dated February 8, 2011, to be compliant. |
| Has the project sponsor allocated sufficient resources to oversee or carry out safety and security activities? | Y | |
| Has the project sponsor developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases? | Y | CSP has prepared a Preliminary Hazard Analysis Report, Rev. 0, dated April 23, 2009. Corrective actions and analysis for different project phases have been identified in the report. |
| Does the project sponsor implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities? | Y | |
| Does the project sponsor monitor the progress of safety and security activities throughout all project phases? Please describe briefly. | Y | Safety and security are an ongoing agenda item for the current construction contract (Contract 1300) work package status meetings. The status of safety and security certifications is reviewed at weekly project management meetings. |
| Does the project sponsor ensure the conduct of preliminary hazard and vulnerability analyses? Please specify the analyses conducted. | Y | |
| Has the project sponsor ensured the development of safety design criteria? | Y | Design is complete and construction is underway. |

| | | |
|--|------------|---|
| Has the project sponsor ensured the development of security design criteria? | Y | Design is complete and construction is underway. |
| Has the project sponsor ensured conformance with safety and security requirements in design? | Y | Certification checklists have been developed. Certification is achieved through monthly meetings. Design is complete and construction is underway. |
| Has the project sponsor verified construction specifications conformance? | Y | This is ongoing as construction progresses, and conformance is verified through the safety and security certification process. |
| Has the project sponsor identified safety and security critical tests to be performed prior to passenger operations? | N | These tests are currently being developed. |
| Has the project sponsor verified conformance with safety and security requirements during testing, inspection, and start-up phases? | N | Project is in construction, and the RSD is about two months in the future. |
| Has the project sponsor evaluated change orders, design waivers, or test variances for potential hazards and/or vulnerabilities? | Y | |
| Has the project sponsor ensured the performance of safety and security analyses for proposed workarounds? | NA | Currently no workarounds have been identified. |
| Has the project sponsor demonstrated through meetings or other methods, the integration of safety and security in the following? <ul style="list-style-type: none"> • Activation Plan and Procedures • Integrated Test Plan and Procedures • Operations and Maintenance Plan • Emergency Operations Plan | In Process | The second draft of the Rail Activation Plan (RAP) has been completed. An Integration Matrix has been implemented for all disciplines and includes safety and security concerns. Project Sponsor has hired a Start-up and Testing Manager who will develop the plans and procedures. Hiring of this role was a critical activity. |
| Has the project sponsor issued final safety and security certification? | N | Project is in the construction phase. |
| Has the project sponsor issued the final safety and security verification report? | N | Project is in the construction phase. |
| Construction Safety | | |
| Does the project sponsor have a documented/implemented Contractor Safety Program with which it expects to comply? | Y | Health and Safety Construction Safety Standards, Revision 3, dated 06/27/2012. |
| Does the project sponsor's contractor(s) have a documented companywide safety and security program plan? | Y | |
| Does the project sponsor's contractor(s) have a site-specific safety and security program plan? | Y | The remaining active contractor has a plan. Contract documents require that the contractor follows an Environmental Health and Safety Program, specific to the contract work. |
| How do the project sponsor's OSHA statistics compare to the national average for the same type of work? | Y | Provided in the CSP Monthly Progress Report. Statistics remain favorable compared to national averages and project safety goals. |
| If the comparison is not favorable, what actions are being taken by the project sponsor to improve its safety record? | NA | Statistics are favorable. No action needed. |
| Federal Railroad Administration | | |
| If shared track, has the project sponsor submitted its waiver request application to FRA? (Please identify specific regulations for which waivers are being requested.) | NA | No shared track. No waivers are anticipated. |

| | | |
|---|----|--------------------------------|
| If shared corridor: has the project sponsor specified specific measures to address shared corridor safety concerns? | NA | This is not a shared corridor. |
| Is the Collision Hazard Analysis underway? | NA | |
| Other FRA required Hazard Analysis – Fencing, etc.? | NA | |
| Does the project have Quiet Zones? | N | |
| Does FRA attend the Quarterly Review Meetings? | N | |

ATTACHMENT C – AWARDED CONTRACTS

The following sections provide the status of ongoing contracts associated with the CSP. Note that SFMTA updates the Disadvantaged Business Enterprise (DBE) participation percentages quarterly. The current values are through *September 2022*.

| | | |
|------------------------------|---|--------------|
| Contract No. | 1250 | |
| Contract Description: | UR #1 (Yerba Buena/Moscone Center Station [YBM]) | |
| Status: | Completed June 2011. | |
| Cost: | Original Contract Value | \$9,273,939 |
| | Approved Change Orders | \$2,694,211 |
| | Final Contract Value | \$11,968,150 |
| | Expended to Date | \$11,968,150 |
| | % Expended | 100% |
| | Small Business Enterprise (SBE) Participation | 97% |
| Schedule: | Notice to Proceed (NTP) issued January 2010. Substantial completion in June 2011. | |
| Issues or Concerns: | | |

| | | |
|------------------------------|---|--------------|
| Contract No. | 1251 | |
| Contract Description: | UR #2 (Union Square/Market Street Station [UMS]) | |
| Status: | Work is complete. | |
| Cost: | Original Contract Value | \$16,832,550 |
| | Approved Change Orders | \$3,836,531 |
| | Final Contract Value | \$20,669,081 |
| | Expended to Date | \$20,794,581 |
| | % Expended | 100% |
| | SBE Participation | 87.4% |
| Schedule: | NTP issued January 2011. Substantial completion in August 2012. | |
| Issues or Concerns: | Final total cost claim by contractor has been settled. | |

| | | |
|------------------------------|---|---|
| Contract No. | 1252 | |
| Contract Description: | Tunnels | |
| Status: | Final completion achieved. Financial closeout underway. Final contract cost to be lower than reported here. | |
| Cost: | Original Contract Value | \$233.58 million |
| | Approved Change Orders | \$7.83 million |
| | Current Contract Value | \$241.41 million |
| | Expended to Date | \$233.59 million; \$6.2 million paid from non-project funds |
| | % Expended | 96.8% |
| | SBE Participation | 5.8% |
| Schedule: | Final completion achieved May 15, 2015. | |
| Issues or Concerns: | None. | |

| | | |
|------------------------------|--|-----------|
| Contract No. | 1277 | |
| Contract Description: | Pagoda Palace Demolition | |
| Status: | Construction is complete; contract is in closeout. | |
| Cost: | Original Contract Value | \$498,995 |
| | Approved Change Orders | \$149,981 |
| | Current Contract Value | \$648,976 |
| | Expended to Date | \$648,976 |
| | % Expended | 100% |
| | SBE Participation | 100% |
| Schedule: | Complete. | |
| Issues or Concerns: | None. | |

| | | |
|------------------------------|--|------------------|
| Contract No. | 1300 | |
| Contract Description: | Three subway stations (YBM, UMS, and CTS) and Surface, Track, and Systems (STS) | |
| Status: | All three stations are near completion. | |
| Cost: | Original Contract Value | \$839.68 million |
| | Approved Change Orders | \$303.7 million |
| | Current Contract Value (budget) | \$1.144 billion |
| | Expended to Date | \$1.138 billion |
| | % Expended | <98.8% |
| | SBE Participation | 22.9% |
| Schedule: | NTP issued June 17, 2013. Substantial Completion was planned for February 2018. | |
| Issues or Concerns: | The work on this contract is behind schedule. | |

| | | |
|------------------------------|--|--|
| Contract No. | CS-155-1 | |
| Contract Description: | Design Package 1 for Contracts 1250, 1251, and 1252; Prime PB/Telemon | |
| Status: | Design is complete. Construction support is complete for Contract 1252. | |
| Cost: | Original Contract Value | \$5,795,000 (includes exercised options) |
| | Approved Change Orders | \$2,145,159 |
| | Current Contract Value | \$7,940,159 |
| | Expended to Date | \$7,904,713 |
| | % Expended | 99.6% |
| | SBE Participation | 30.2% |
| Schedule: | Complete. | |
| Issues or Concerns: | | |

| | | |
|------------------------------|---|--------------|
| Contract No. | CS-155-2 | |
| Contract Description: | Design Package 2 for UMS, CTS, and YBM; Prime: CSDG | |
| Status: | Designs are complete for all of the station contracts. Construction support of Contract 1300 is underway. | |
| Cost: | Original Contract Value | \$39,949,948 |
| | Approved Change Orders | \$7,950,658 |
| | Current Contract Value | \$47,900,606 |
| | Expended to Date | \$42,196,304 |
| | % Expended | 88.1% |
| | SBE Participation | 31.6% |
| Schedule: | | |
| Issues or Concerns: | | |

| | | |
|------------------------------|--|--------------|
| Contract No. | CS-155-3 | |
| Contract Description: | Design Package 3 for STS; Prime: HNTB-B&C | |
| Status: | Design is complete. Construction support of Contract 1300 is underway. | |
| Cost: | Original Contract Value | \$16,864,250 |
| | Approved Change Orders | \$1,637,474 |
| | Current Contract Value | \$18,501,724 |
| | Expended to Date | \$15,275,838 |
| | % Expended | 82.6% |
| | SBE Participation | 25.9% |
| Schedule: | | |
| Issues or Concerns: | | |

| | | |
|------------------------------|--|--------------|
| Contract No. | CS-149 | |
| Contract Description: | Central Subway Partnership (Project Manager/Construction Manager) | |
| Status: | Work is ongoing. | |
| Cost: | Original Contract Value | \$85,139,092 |
| | Approved Change Orders | \$0 |
| | Current Contract Value | \$85,139,092 |
| | Expended to Date | \$72,666,838 |
| | % Expended | 85.4% |
| | SBE Participation | 32.4% |
| Schedule: | | |
| Issues or Concerns: | | |

| | | |
|------------------------------|------------------------------------|--------------|
| Contract No. | CS 156 | |
| Contract Description: | Project Controls Consultant | |
| Status: | Work is ongoing. | |
| Cost: | Base Contract Value | \$17,112,873 |
| | Approved Change Orders | \$0 |
| | Current Contract Value | \$17,112,873 |
| | Expended to Date | \$10,081,808 |
| | % Expended | 58.9% |
| | SBE Participation | 30.0% |
| Schedule: | | |
| Issues or Concerns: | | |

ATTACHMENT D – PROJECT MILESTONES/KEY EVENTS

| (P = Planned Date, A = Actual Date, F = Forecast Date) | |
|--|---|
| Preliminary Engineering (PE): | Authorized in July 2002 (A) |
| Record of Decision (ROD): | Issued November 26, 2008 (A) |
| Final Design (FD): | Authorized in January 2010 (A) |
| FFGA Request: | Submitted in September 2011 (A) |
| FFGA Executed: | October 11, 2012 (A) |
| Groundbreaking: (Utility Relocation Contract) | February 9, 2010 (A) |
| Tunnel Excavation Complete (hole through): | June 2, 2014 (southbound); June 11, 2014 (northbound) (A) |
| Cross-passages Complete: | December 20, 2014 (P); April 15, 2015 (A) |
| Tunneling Substantial Completion: | April 15, 2015 (A) |
| Station Construction Notice to Proceed: | June 17, 2013 (A) |
| Station Construction Substantial Completion: | February 24, 2018 (P); September 30, 2022 (A) |
| Revenue Service Date (RSD): | December 26, 2018 (P); <i>January 7, 2023 (F)</i> |

Schedule contingency management criteria were developed from the FTA Risk Assessment before entry into FD. Minimum schedule contingency levels at various project milestones or “hold points” were agreed to with SFMTA at Risk Workshop #4, which was held in 2009. The FTA-recommended schedule contingency for the current stage of the project is four months.

ATTACHMENT E – PROJECT MAP

