MONTHLY MONITORING REPORT
June 2022

Central Subway Project

San Francisco Municipal Transportation Agency
San Francisco, CA
FINAL

Draft Report delivered to FTA on July 15, 2022
Final Report delivered to FTA on July 20, 2022

PMOC Contract No.: 69319519D000016
Task Order No.: 69319520F300115
Requisition/Reference No.: FTA-TPM20-20-0234
OPs Referenced: 02, 24, 25, and 26
CLIN 0002

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Project Time: 07/30/2020 through 07/29/2023

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 *April 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.

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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, but the latest master program schedule update shows substantial completion occurred during the first quarter of 2022, which is more than 1,400 days later than the original substantial completion date. SFMTA's most recent update of the master program schedule forecasts a Revenue Service Date (RSD) of September 9, 2022.
- Cost: The SFMTA reported the revised Estimate at Completion (EAC) at $1.931 billion to reflect additional costs to compensate contractors and their subcontractors for directs costs and delay impacts of the additional work performed under change orders. The Project Management Oversight Contractor (PMOC) received an updated cost by Standard Cost Category (SCC) from the 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 the 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 represents a three-month delay from the previous RSD projection. SFMTA indicated that the delay primarily is due to the delay of Automated Train Control System (ATCS) testing. SFMTA 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. The current RSD of September 9, 2022, is optimistic based on the PMOC's preliminary review. During February 2022, the PMOC provided FTA with its draft assessment of the CSP's remaining scope and the forecast RSD. FTA provided the draft assessment to SFMTA, and it is currently under review by SFMTA.

- In January 2022, the SFMTA stated that the SFMTA Board approved an additional $40 million to cover the additional project cost. With this approval, the total project cost is currently 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. *SFMTA is reviewing the cost projection.*
- SFMTA reached a global settlement in March 2021 with the prime contractor, Tutor Perini Corporation (TPC). SFMTA indicated that the substantial completion of TPC's scope of work was in March 2021. As part of the global settlement, SFMTA and TPC reached an agreement that, unless a federal program is available to compensate for the COVID-19-related impacts, there will be no funds, because no local funds will be used to pay for the pandemic-related impacts.
- 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 *June 2022*, SFMTA reported that minor COVID-19 impacts occurred that affected the trackwork 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 is 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 now available to support the CSP, if the progress of hiring and training of new staff to support revenue service is behind schedule. SFMTA indicated in May 2022 that the issues regarding unvaccinated operators had been resolved. Currently there are 88 new positions to fill, and 80 percent of the new positions will be filled by the end of July 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. SFMTA submitted the documents required for the OP 54 review. 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 submitted the OP 54 Part 2 review spot report. *FTA shared the report with SFMTA in June 2022.*
- As part of the global settlement, TPC has supplemented the electrical specialty subcontractor (Abbett) with additional resources. Progress on the traction power and Overhead Catenary System (OCS) work has greatly improved.

Work related to OCS and traction power is continuing after the initial early substantial completion date of March 31, 2021. The contractors are working on additional days with extended shifts. However, SFMTA indicated that the contractors are experiencing material shortages for the OCS work. It was the opinion of the PMOC that, due to the effects of COVID-19, the material shortages could become a critical issue if SFMTA did not resolve the issues in a timely matter. SFMTA indicated that the issues related to material shortages were resolved in May 2021. 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 have been 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 will replace 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 California Public Utilities Commission (CPUC) for review and approval. Once the SFFD and CPUC sign off on the plan, SFMTA will resume testing. SFMTA is currently projecting four to six weeks of delay due to the incident, but this delay will not impact the RSD. However, if the approval process of the plan takes longer, it will potentially impact the September 2022 RSD.*

- Major Issues and/or Concerns:

Table 1 – Major Issues and/or Concerns

Issue/Concern	Potential delays associated with systems integration/testing and operational readiness
Date Identified	July 2021
Status	Ongoing
Project Sponsor Action	SFMTA is proactively coordinating integration and testing of various systems. In addition, SFMTA is developing a staffing plan for resources needed to support revenue service.
PMOC Recommendation	The PMOC recommends that SFMTA develop a detailed CPM schedule and use it as a tool to manage the process of systems integration/testing and operational readiness.
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.*

1.3. Key Indicators Dashboard

Table 2 – Key Indicators Dashboard

Project Sponsor:				San Francisco Municipal Transportation Agency	
Project Name:				Central Subway Project	
Date:				*June 30, 2022*	
Project Detail					
Oversight Frequency:				**Monthly**	
Element	**Status**			**Prior Status**	**Issue or Concern**
	● **G**	● **Y**	● **R**		
PMP		●		●	The Project Management Plan (PMP) was last updated in April 2019. It is recommended that SFMTA update the PMP as soon as possible to include project impacts resulting from COVID-19 restrictions, which should include protocols and transition in preparation for revenue service.
MCC	●			●	None.
Cost*		●		●	SFMTA has updated the CSP EAC to include the reallocation of project funds and the global settlement.
Schedule			●	●	*Fire Department and CPUC approval of SFMTA's implementation of new safety measures and the remaining testing process.*
Quality	●			●	None.
Safety	●			●	None.
Risk		●		●	COVID-19-related issues and upcoming system integration/operational readiness are major risks.
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%.

1.4. Core Accountability Items

Table 3 shows the core accountability items for the project, including the current 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	*$1,931,288,795*	Unacceptable

Contingency	Unallocated Contingency	$74,722,000	*$3,374,000*	Unacceptable
	Total Contingency	$185,500,000	*$3,374,000*	Unacceptable
Schedule	Revenue Service Date	12/26/2018	09/09/2022 (SFMTA forecast)	Optimistic

Project Progress		**Amount ($)**	**Percent of Total**
Total Expenditures	Actual cost of all eligible expenditures completed to date	*$1,908,137,818*	*98.8%*
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	*$1,511,414,981*	*96.44%*

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 April and May 2022*.

2. OBSERVATIONS AND FINDINGS

2.1. Summary of Monitoring Activities

- April 2022 – Weekly Schedule Review Meeting and Monthly PMOC/SFMTA Meeting
- This report reflects financial information SFMTA provided in April 2022 (financial cutoff date of April 20, 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

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 CPUC is participating in the various safety meetings, including the Safety and Security Certification Review Committee (SSCRC) and Fire and Life Safety Committee (FLSC) meetings. Representatives of the CPUC also regularly attend the SFMTA/FTA QPRMs. The FLSC is

working to approve items on the certifiable items list for the Stations and Surface, Track, and Systems (STS) contract. SFMTA has expressed concern that CPUC may have insufficient staff to witness the required safety tests for the CSP, which could further delay the RSD. This potential risk is being monitored in the risk register, and mitigation strategies have been identified.

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 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 March 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	*March 2022 Forecast Construction Completion Date*
1253 – Union Square/Market Street Station	*08/25/2022*
1254 – Chinatown Station	*06/21/2022*
1255 – Yerba Buena/Moscone Center Station	*06/27/2022*
1256 – Surface, Track, and Systems	07/05/2022

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

UMS: *The contractor completed installation of the guardrail near the fare gates. The contractor began installation of the bent plate over the 42-inch parapet wall on the concourse level. The contractor began installation of the blue light phone system on the platform level. The contractor continued inspection of suspended ceiling panels on the concourse level. The contractor also continued installation of the guardrail at the exhaust ventilation fan dampers.*

CTS: *The contractor continued testing and addressing state inspection deficiency items for elevators and escalators. The contractor continued installing crack grout injection at the crossover cavern. The contractor continued closing out internal punch list items. The contractor continued minor street work, ongoing monitoring, and surveying.*

YBM: *The contractor completed all prework for Supervisory Control and Data Acquisition (SCADA) testing. The contractor completed all work for traction power equipment testing. The contractor completed applying an anti-graffiti coating on the art granite wall at the concourse level. The contractor continued closing out punch list items at all levels.*

STS: *The contractor continued installing OCS for streetlights, trolley, and light rail, and installing ATCS. Radio system testing continued. The contractor continued the surface signaling design and fabrication for the 4th Street/King Street intersection and the Bluxome Street crossover. The contractor continued other OCS, track, and miscellaneous punch list work.*

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

SFMTA reported that the project EAC has been revised to increase by approximately $40 million, from $1.891 billion to $1.931 billion. 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 directs costs and the delay impacts of the additional work performed under change orders.

The table below, provided by SFMTA in April 2022, shows the increase to the current EAC by SCC:

Table 5 – Increase to the Current Estimate at Completion by Standard Cost Category

SCC CODES	STANDARD COST CATEGORY	PREVIOUS EAC	PROJECTED INCREASE	PROJECTED EAC
SCC 010	GUIDEWAY & TRACK ELEMENTS	284,261,448		284,261,448
SCC 020	STATIONS, STOPS, TERMINALS, INTERMODAL	565,040,301	14,000,000	579,040,301
SCC 040	SITEWORK & SPECIAL CONDITIONS	505,540,122		505,540,122
SCC 050	SYSTEMS	120,522,415	8,200,000	128,722,415
SCC 060	ROW, LAND, EXISTING IMPROVEMENTS	32,246,321		32,246,321
SCC 070	VEHICLES	16,800,000		16,800,000
SCC 080.01	PRELIM ENGINEERING	46,202,674		46,202,674
SCC 080.02	FINAL DESIGN	61,318,331		61,318,331
SCC 080.03 - SCC 080.04	PM FOR DESIGN & CONSTRUCTION	236,519,574	14,750,000	251,269,574
SCC 080.05 - SCC 080.08	OTHER PROFESSIONAL SERVICES	22,887,611		22,887,611
SCC 090			3,000,000	3,000,000
		1,891,338,797	**39,950,000**	**1,931,288,797**

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 is May 30, 2022.*

EAC: $1.931 billion

Total contingency: *$3.4 million*

SFMTA reported the following amounts:

Actual Cost (AC): *$1,908,137,818*

Current funding level: $1,900,275,322

Earned Value (EV): *$1,511,414,981*

Cost Performance Index (CPI): *0.80*

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 *May 2022*, as reported in SFMTA's latest 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 May 2022 reporting period, SFMTA reports the value of the approved changes at $392.0 million, which is part of the current project cost of $1.931 billion. The value of potential changes is currently $28.6 million.*

2.13.5. Cost Contingency

The total available contingency (approved contingency less approved contract changes) reported in March 2022 is $3.4 million. The PMOC conducted a cost assessment in May 2022 and provided its resulting cost projection to FTA. Based on the assessment, the PMOC will determine if the current contingency is adequate.

Table 6 – Budget and Contingency Status for Central Subway Project[1]

[1] Data reported in SFMTA's *March* 2022 CSP Monthly Progress Report (reformatted by the PMOC).

		CONTRACT COST					CONTINGENCY					BUDGET
	COST ELEMENT	ORIGINAL CONTRACT VALUE / September 2013 SUPPLEMENTAL BUDGET	APPROVED CHANGES	CURRENT CONTRACT VALUE [a + b]	POTENTIAL CHANGES	ESTIMATE AT COMPLETION (EAC) [c + d]	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 [h - b]	REMAINING CONTINGENCY AFTER POTENTIAL CHANGES DEDUCTED [i - d]	ORIGINAL CONTRACT VALUE + REVISED AUTHORIZED CONTINGENCY [a + h]
		a	b	c	d	e	f	g	h	i	j	j
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	(1,530,766)	3,836,531			20,669,081
	Contract 1251 Department of Technology	75,615		75,615		75,615						75,615
1252	GUIDEWAY TUNNEL	233,584,015	(72,762)	233,511,253	-	233,511,253	23,658,464	(23,731,226)	(72,763)			233,511,253
1300	STATIONS	839,676,400	305,400,113	1,145,076,513	40,148,103	1,185,224,617	20,000,000	280,369,599	290,869,599	(14,5		1,130,545,999
	1253 UNION SQUARE/MARKET ST STATION [UMS]	294,030,590	20,744,337	314,774,927	20,582	314,795,508	5,000,000	15,000,000	20,000,000		18)	314,030,590
	1254 CHINA TOWN STATION [CTS]	247,567,810	157,959,849	405,527,659	20,070,555	425,598,213	5,000,000	139,679,388	144,679,388		351,015)	392,247,198
	1255 YERBA BUENA/ MOSCONE STATION [YBM]	158,089,000	4,889,959	162,978,959	64,877	163,043,836	5,000,000	10,000,000	15,000,0		10,045,164	173,089,000
	1256 SURFACE TRACKWORK & SYSTEMS [STS]	139,989,000	121,805,969	261,794,969	19,992,090	281,787,059	5,000,000	*115,690,211*	111		(30,607,848)	251,179,211
OTHER		39,923,508	23,775,304	63,698,812		63,698,812	2,056,645	10,560,000		709)	(6,316,709)	66,882,103
	SCC 10 - 50 Construction Sub-total	1,139,532,783	335,633,398	1,475,166,180	40,148,103	1,515,314,284	53,035,782	266,408,441		847,223)	(60,995,327)	1,463,818,956
SCC 60-80	SOFT COSTS PACKAGES											
60	ROW, LAND, EXISTING IMPROVEMENTS	36,511,799	(4,265,478)	32,246,321		32,246,321	1,000,000	(1,000,000)		0	0	32,246,321
70	VEHICLES	24,108,712	(7,308,712)	16,800,000		16,800,000	2,276,941	(7,076,941)	(4,8	(4,800,000)	(4,800,000)	12,000,000
80	PROFESSIONAL SERVICES	310,518,041	56,410,151	366,928,192		366,928,192	18,221,079	(16,862,657)	1,358,422	1,358,422	1,358,422	368,286,614
	SCC 60 - 80 Construction Sub-total	371,138,552	44,835,961	415,974,513	0	415,974,513	21,498,020	(24,939,598)	(3,441,578)	(3,441,578)	(3,441,578)	412,532,935
SCC 90	UNALLOCATED CONTINGENCY						3,845,945	(261,295,781)	(257,449,836)	23,923,431	23,923,431	23,923,431
TOTAL		1,510,671,335	380,469,359	1,891,140,694	40,148,103	1,931,288,797	78,379,747	(19,826,938)	63,394,759	3,374,635	3,374,635	1,900,275,322

SCC Breakdown of Forecast Construction Costs Not Available

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 March 2022)*

Funding Available Table		
	Funding	
	Committed Funding Sources	Total Awarded Funds to Date
Federal		
Sect. 5309-NS	$942,200	$965,321
Sect. 5307-OBAG	$15,980	$15,980
CMAQ	$41,025	$41,025
Federal Subtotal	**$999,205**	**$1,022,326**
State		
TCRP	$14,000	$14,000
State RIP	$12,498	$12,498
Prop. 1B (I-Bond) PTIMSE	$308,601	$312,236
Prop. 1A (HSR-Bond)	$61,308	$61,308
State Subtotal	**$396,407**	**$400,042**
Local		
LCTOP	$4,000	$4,000
Operating	$4,970	$311,424
MTA	$0	$475
Prop. B Pop Baseline	$26,985	$20,125
Prop. K	$143,542	$138,692
TSF Transit	$3,191	$3,191
Local Subtotal	**$182,688**	**$477,907**
CPT 544 Total	**$1,578,300**	**$1,900,275**

Source: SFMTA CSP Monthly Progress Report for *March 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 March 2022) is as follows:

The project's EV is $1,511,414,981, 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 the 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 September 9, 2022, as the RSD.

2.14.2. Critical Path Summary

Baseline Schedule:

CTS Install Guidewalls, 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 forecasted to be complete by the end of the third quarter of 2022.

RSD on December 26, 2018 – Currently forecast for September 9, 2022

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

  - Waterproofing of the scallop walls
  - *Installation of the drain at the platform strut level*
  - *Installation of the bird net*
  - *Installation of end-of-platform gates and egress*
  - *Extending the barrier wall at the concourse level*
  - *Adding reinforcements to the 42-inch concrete masonry unit wall over the glass panels*
  - Revision of the layout of fire smoke dampers at the platform level
  - Installation of lights at Sector 6
  - Installation of additional lights at the elevators 1 and 2 landing on the concourse level
  - Revision of the drain layout at stair 4 on the platform strut level
- Continued installation, start-up, and testing of:
  - *Overhead plumbing, fire protection piping, and electrical fixtures*
  - Access controls
  - Heating, Ventilation, and Air Conditioning (HVAC) and emergency ventilation *start-up and testing*
  - Power and lighting *start-up and testing*
  - Fire alarm/Public Address/security systems *start-up and 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 cavern grouting to embed the waterproof membrane
- Completion of the safety certification checklist field items
- *Completion of system start-up and acceptance testing*
- *Start of the glass artwork installation at the plaza level*

YBM P-1255:

- Completion of:
  - Installation of the archeological display at the concourse level
  - Installation of sculptures at the surface level

- *Installation of interior finishes on the mezzanine level*
- Traction power gear testing
- Traction power Supervisory Control and Data Acquisition, also known as SCADA, testing
- The deluge spray pattern demonstration with the SFFD
- Termination of wiring for blue light emergency phones
- Heat recovery coils and air balance
- *Daiken testing of reworked systems*
- Testing of elevator and escalator functionality
- Room pressure testing

STS P-1256:

- Completion of installation of streetlights
- Continuation of OCS support/wire installation on the surface level
- *Continuation of surface signal work on 4th Street*
- *Continuation of traffic signal work on 4th Street*
- *Continuation of surface signaling fabrication and testing for the 4th Street/King Street and Bluxome Street crossover*
- Continuation of platform construction at 4th Street and Brannan Street
- 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. The current major risks to the project address the potential for further delays to the construction of the stations, which cannot be mitigated or recovered, resulting in further delays to the RSD. At the monthly risk mitigation meeting, these and other major remaining project risks were evaluated.

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

The PMOC continues to encourage SFMTA to identify new risks associated with COVID-19-related impacts and with the system integration/testing and operational readiness, along with the risks related to a specialty subcontractor's resource availability, as the major risks associated with civil work and related differing site conditions are being retired.

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 September 9, 2022.

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 May 2022, TPC's Quality Manager had filed 603 CNCRs. During May 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 May 2022. The performance metrics relating to accidents per working hour remain well within the OSHA goals for similar construction. SFMTA did not provide the construction safety data for May 2022. The last incident statistics received from SFMTA are through December 31, 2021, and are shown in Table 8, as well as where they are not applicable (NA).

Table 8 – Construction Safety Data

Through *December 31, 2021*	Number of Incidents	Incident Rate[1]	Goal
Contract 1300			
OSHA Recordable Accidents	47	1.09	<3.4
Job Transfer/Restricted Duty Incidents	0	0.00	NA
Lost Time Incidents	11	0.25	<1.6
Total Incidents	58	1.34	NA
Hours Worked	8,654,940		

[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
FLSC	Fire and Life Safety Committee
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HVAC	Heating, Ventilation, and Air Conditioning
LRT	Light Rail Transit
LRV	Light Rail Vehicle

MCC	Management Capacity and Capability
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
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
SSCRC	Safety and Security Certification Review Committee
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 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 3 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? • 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 is 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 D – 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 March 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 station 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 E – 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 NTP:	June 17, 2013 (A)
Station Construction Substantial Completion:	February 24, 2018 (P); June 30, 2022 (F)
RSD:	December 26, 2018 (P); September 9, 2022 (F)

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 F – PROJECT MAP