MINI-MONTHLY REPORT
April 30, 2013

Central Subway Project (CSP)
San Francisco Municipal Transportation Agency (SFMTA)
San Francisco, CA

Draft Report delivered to FTA May 9, 2013
Final Report delivered to FTA May 15, 2013

PMOC Contract No.: DTFT60-09-D-00015
Task Order No. 3
Project No.: DC-27-5139
Work Order Number: 006
OPs Referenced: 01, 20, and 25
CLIN 0002B

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EXECUTIVE SUMMARY

CENTRAL SUBWAY

PROJECT DESCRIPTION

The Central Subway Project (CSP) will construct a modern, efficient light-rail line that will improve public transit in San Francisco. This new 1.7-mile extension of Muni's T Third Line will provide direct connections to major retail, sporting and cultural venues while efficiently transporting people to jobs, educational opportunities, and other amenities throughout the city. The CSP is Phase 2 of the San Francisco Municipal Transportation Agency (SFMTA)'s Third Street Light Rail Transit Project. Phase 1 of the project constructed a 5.1-mile light-rail line along the densely populated 3rd Street corridor. It began revenue service in April 2007, restoring light-rail service to a high transit ridership area of San Francisco for the first time in 50 years. 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 SoMa, Union Square, and downtown.

Four new stations will be built along the 1.7-mile project alignment—an above-ground station at 4th and Brannan streets and three underground stations at Yerba Buena/Moscone Centers, Union Square, and Chinatown. Four light rail vehicles (LRVs) will be procured for the CSP. Ridership is projected at 43,521 Average Weekday Boardings in 2030.

PROJECT STATUS

Full Funding Grant Agreement (FFGA)

The FFGA was signed on October 11, 2012.

Design and Construction

<u>Design</u>

- All designs are complete.

Construction

Contract 1250 [Utility Relocation (UR) #1].

- Work is complete.

Contract 1251 (UR #2).

- Work is complete.

Contract 1252 Tunnel.

- Work is 41 percent complete.

Contract 1300 Stations and Systems/Trackwork.

- Three bids were opened on April 18, 2013. The lowest bid was $120 million over the Engineer's Estimate.
- Notice to Proceed (NTP) has been delayed until June 21, 2013.

Schedule

March 2013 project schedule reflects 4.7 months of buffer float. In accordance with Federal Transit Administration (FTA) guidelines, a minimum of 10 months of Schedule Contingency is required at this phase of the project. The Project Management Oversight Contractor (PMOC) has been requesting justification for the reduction in schedule contingency and/or a Recovery schedule from the CSP since October 2012. The PMOC, FTA Region IX, and FTA Headquarters are concerned that it has taken the CSP so long to address this serious deficiency.

The Revenue Service Date (RSD) remains unchanged at December 26, 2018.

Cost

Cost Estimate:	$1.5783 billion
Total Contingency:	$185 million (minimum contingency $160 million)
Total net incurred costs:	$317.3 million (20.1 percent of the total project budget)
Current funding level:	$643.6 million (40.7 percent of the total project budget, March data)

TOP ISSUES AND RECOMMENDATIONS

- SFMTA has proposed several options in an attempt to address opposition in North Beach to the CSP construction. The proposed options will either leave the Tunnel Boring Machines (TBMs) buried in place or the Project will attempt to acquire a piece of property near the end of the alignment for a new retrieval location. A final decision to move forward with any of the proposed options was expected in April 2013. Any of the options other than the current contract plan will impact both the cost and the schedule of the project.
- The current project schedule reflects 4.7 months of buffer float, which is below the Minimum Schedule Contingency level of 10 months. The Contingency may decrease even further if the award of Contract 1300 is delayed. **Recommendation**: The CSP should submit justification to decrease the minimum schedule contingency and/or develop a recovery plan.
- For Contract 1300, bids were submitted by three prime contractors. Preliminary results indicate a low bidder of $120 million over engineer's estimate at $840 million. The next

lowest bid came in at $867 million, and the highest bid at $945 million. The Project is currently evaluating the bids. Bid opening was April 18, 2013. NTP is expected on June 21, 2013. **PMOC Concern: If awarded, the project cost contingency will fall to approximately $65 million, which is significantly below the required level of $160 million. The current schedule is very tight between bid opening and award. Any further delays to the NTP will reduce the project schedule contingency.**

- The Union Square/Market Street Station (UMS) headwall contractor (Contract 1252) is having difficulties installing the headwall piles. Contract 1300 states that the UMS headwalls will be completed 90 days after NTP (expected September 21, 2013). If the headwall contractor does not significantly increase pile production, the Project may have to amend the Contract 1300 milestone date or incur delay costs.
- **PMOC Concern: The Resident Engineers (REs) for UMS, Chinatown Station (CTS), and Yerba Buena/Moscone Station (YBM/MOS) have not been hired as stated in the 2013 Project Staffing Plan. These individuals should now be at the project office gearing up for construction in June 2013.**
- In an effort to reduce project costs, the CSP established a Contract Modification (CMod) Task Force, which met regularly between August and October 2012. The purpose of the Task Force is to examine the current procedures and practices related to processing changes during construction and look for areas of improvement, especially related to the time to develop and process a CMod. The task force is expected to provide their recommendations to the Configuration Management Board (CMB). **PMOC Concern: This Task Force is taking longer to develop and implement recommendations than anticipated.**
- Currently, John Funghi, Program Director of the CSP, is delegated with contracting authority to approve and execute contracts up to $100,000, with no authority to re-delegate to lower level staff. **PMOC Concern: Smaller value Change Order Requests (CORs) take considerable time to process due to the involvement of upper management. Additionally, because the RE has no authority to approve small CORs, the contractor may choose to bypass the RE on future negotiations. SFMTA should provide the RE, and possibly others, with authority to approve change orders.**

Table 1 shows FTA core accountability items for the CSP.

Table 1: Core Accountability Items

Project Status:		**Original at FFGA:**	**Current Estimate:**
Cost	Cost Estimate	$1,578,300	$1,578,300
Contingency	Unallocated Contingency	$74,722	$ 74,204
	Total Contingency (Allocated plus Unallocated)	$185	$184.9
Schedule	Revenue Service Date	12/26/2018	12/26/2018

Total Project Percent Complete	Based on Expenditures	20.1%
	Based on Earned Value	No data provided

Major Issues	**Status**	**Comments/Planned Action**
Schedule Contingency	Major schedule changes occurred from the previous quarter. Project schedule contingency has dropped from 14.8 months to 5.2 months.	Minimum Schedule Contingency required by FTA at this stage of the project is 10 months. The CSP has been requested to submit justification to decrease the minimum schedule contingency.
Cost Contingency	For Contract 1300, bids were submitted by three prime contractors. Preliminary results indicate a low bidder of $120 million over engineer's estimate at $840 million.	If awarded, the project cost contingency will fall to approximately $65 million, which is significantly below the required level of $160 million. The Project will need to provide justification and/or a commitment of additional funding for the reduced contingency.
Tunnel Boring Machine Extractions	SFMTA has proposed several options in an attempt to address opposition in North Beach to the construction. The proposed options will either leave the TBMs buried in place or the Project will attempt to acquire a piece of property near the end of the alignment for a new retrieval location.	Any of the options, other than the current contract plan, will impact both the cost and the schedule of the project.
Date of Next Quarterly Meeting:	May 22, 2013	

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LIST OF ATTACHMENTS

CENTRAL SUBWAY

A. GRANTEE'S CAPABILITY AND APPROACH

1. Technical capacity and capability to conduct the project

Assessment Status.
The Project has been without a Project Controls Manager since July 6, 2012. A new Cost and Schedule Manager, Vivien Chow, started on April 1, 2013.

A new position of Contract Administration Manager was filled by Brian Kelleher on March 18, 2013

A number of REs, Assistant Engineers, Office Engineers, Inspectors, and construction support staff will be needed by the CSP as construction starts to ramp up. Some of these positions will first be filled with current SFMTA or other City Agency staff. The CSP will then reach out to fill positions from the existing Project Manager/Construction Manager (PM/CM) consultants.

Status of the following positions as of the end of April 2013:

Position	**Status**
Cost/Schedule Manager	Started April 1
Contract Administration Manager	Started on March 18
Public Relations Manager	Requisition approved
Program Delivery Manager	Requisition approved
RE: UMS, CTS, YBM/MOS, Systems	Interviews TBD
Assistant RE: UMS, CTS, YBM/MOS, Systems	Three hires expected in May
Office Engineer: UMS, CTS, YBM/MOS, Systems	Two hires expected in May
Inspector: Tunnel, UMS, CTS, YBM/MOS, Systems	Resumes April
Dispute Resolution	2013 Advertisement
Executive Secretary	2013 Advertisement
Start-up Testing Manager	2013 Advertisement
Project Safety Manager (replacement)	Started on March 4

The PMOC is monitoring the staffing needs and reviewing resumes of potential new hires. **PMOC Concern: The REs for UMS, CTS, and YBM/MOS have not been hired as stated in the 2013 Project Staffing Plan. These individuals should now be at the project office gearing up for construction in June 2013.**

2. Use of project controls for scope, quality, schedule, cost, risk and safety

SFMTA is currently implementing a new Capital Program Control System in an effort to integrate existing systems with new software modules. The new system is comprised of Primavera P6, EcoSys EPC, Contract Management 13 (CM13), and SharePoint. The system went live on December 13, 2012.

Refer to Sections D, E, and F for detailed discussion.

3. Compliance with applicable statutes, regulations, guidance and FTA agreements

No updates to report

B. PROJECT SCOPE

1. Status and quality of design/construction documents, bidding, and construction status

Design.
All designs are complete.

Construction.
Contract 1250 (UR #1). This contract relocates utilities within the footprint of the proposed YBM/MOS.

- Work is complete.

Contract 1251 (UR #2). This contract relocates utility lines within the footprint of the proposed UMS and temporarily reroutes existing trolley coach lines around the future construction zone.

- Substantial completion was on August 16, 2012.
- Project closeout administration and documentation is underway.

Contract 1252 Tunnel.

- TBM fabrication continues on TBM #2. TBM #2 factory acceptance testing will happen on May 3, 2013. The first TBM arrived in two shipments late April 2013.
- Excavation at the launch box is complete and the base slab is in progress.
- YBM/MOS headwalls are 80 percent complete.
- Work on UMS headwalls began in January 2013 and has progressed very slowly. **PMOC Concern: The UMS headwall pile contractor is having great difficulties installing the headwall piles. If the contractor does not significantly increase pile production, the Project may have to amend the Contract 1300 milestone date or incur delay costs. Contract 1300 states that the UMS headwalls will be completed 90 days after NTP, which is expected to be September 7, 2013. There are a total of 46 headwall piles. Six were completed in the first three months (February to April 2013). At the current rate, the north and south headwall piles will be complete in June 2014. The headwalls must be completed before the first TBM arrival, which is expected at UMS in early November 2013. Project Schedule contingency will be further reduced as this activity will now be on the critical path.**
- Excavation of the Ellis Street shaft is nearly 50 percent complete.

- Construction of the North Beach retrieval shaft has been put on hold while the Project explores several options to eliminate or change the current retrieval shaft location.

Contract 1300 [Combination of 1253 UMS, 1254 CTS, 1255 YBM/MOS, and 1256 Surface, Track, and Systems (STS)]

- The contract was advertised for bid on October 22, 2012.
- Bid opening was April 18, 2013. NTP is expected on June 21, 2013. **PMOC Concern: The current schedule is very tight between bid opening and award. Any further delays to the NTP will reduce the project schedule contingency.**
- Bids were submitted by three prime contractors. Preliminary results indicate a low bidder of $120 million over the engineer's estimate at $840 million. The next lowest bid came in at $867 million and the highest bid at $945 million. The CSP is currently evaluating the bids. **PMOC Concern: If awarded, the project cost contingency will fall to approximately $65 million, which is significantly below the required level of $160 million.**

Fire & Life Safety and Safety and Security Issues.
The Safety and Security Certification Committee (SSCC) and the Fire and Life Safety Committee (FLSC) meetings were held on April 18, 2013. The PMOC attended the meetings.

Safety and Security

- Safety Certification Checklists have been prepared for all construction packages.
- Design Criteria Conformance Checklist Certification has been completed.
- The Construction Specification Conformance Checklists have been completed and approved for all construction packages.
- The Project conducted a Safety Certification Introduction training session on January 18, 2013, for the 1252 Tunnel construction staff.
- The Startup and Testing Plan/Rail Activation Plan will circulate through Operations (John Haley, Jim Kelley, and Terry Fahey) for comments.

Fire and Life Safety

- The Project is now ready to finalize Revision 2 of the Subway Environmental Simulation (SES).
- The Phenolic Pipe Cover for Air Replenishment Piping has been approved. This cover provides adequate fire resistance, is impact resistant, and is less costly to install than other alternatives.
- A camera will be set up to focus on the Fire Alarm Control Panel and Emergency Fan Indicator to allow the San Francisco Fire Department (SFFD) the ability to remotely see the fan operations.

- Through numerous working meetings with the SFFD, many designs have been improved, but the Project still has a few letters of confirmation and approval to complete.

2. List and status of third-party agreements including utilities, railroads, other agencies, etc.

Bay Area Rapid Transit (BART).
The tunnel contractor has been trying to obtain a permit from BART to install construction monitoring equipment and access to the tunnels during construction.

The Purchase and Sale Agreement documents for the UMS/Powell Street Station have been completed. On April 25, 2013, the CSP built a temporary wall, closing off the BART Ellis Street entrance.

Caltrans.
No updates to report.

California Public Utilities Commission (CPUC) Communications.
The CPUC was invited to and is participating in the various safety meetings, including the SSCC and FLSC meetings. Representatives of the CPUC also regularly attend the SFMTA/FTA Quarterly Progress Review Meetings (QPRMs). The last QPRM was held on January 30, 2013.

The CPUC provided a Project Safety Oversight Plan to SFMTA in mid-February 2013, detailing safety oversight activities that the CPUC will observe as the project moves forward.

San Francisco Public Utilities Commission (SFPUC).
A Memorandum of Understanding (MOU) between the CSP and SFPUC is nearing completion. The MOU is regarding additional sewer work to be undertaken south of the 4th Street portal. This additional sewer work will covered as a Design/Build portion of Contract 1300.

San Francisco Parks and Recreation Department.
At the end of February 2013, SFMTA sent back a revised MOU for the Union Square Garage to the Parks and Recreation Department. To date, the Department has not approved the MOU.

Private Property Owners.
Negotiations continue for all property agreements required for the project. These agreements will allow SFMTA to install compensation grouting tubes and construct inclined piles encroaching under private property and install settlement monitoring equipment at sensitive buildings adjacent to the project.

There are now 370 total licenses (10 were added to address the potential Pagoda retrieval shaft) and property agreements, and 50 percent are completed.

The CSP received approval on December 11, 2012, from the San Francisco Board of Supervisors for Resolutions of Necessity on eight properties needed for Tunnel and Station compensation grouting and inclined piles. As of the end of March 2013, the CSP has filed to condemn five of the eight needed properties. The CSP expects to complete negotiations with the remaining three properties.

3. Selection of delivery method, description of contract packages, construction sequencing, contract terms and conditions

The CSP construction is to be contracted by a traditional Design-Bid-Build (D-B-B) methodology.

The CSP developed and adopted a construction delivery methodology during the Preliminary Engineering (PE) phase of the project, which recommended seven construction contracts for delivery of the Program.

In mid-September 2012, this strategy was changed to combine the remaining three stations and the systems contracts (1253, 1254, 1255, and 1256) into one contract (Contract 1300). This contract was Advertised for Bid on October 22, 2012, and bids were opened on April 18, 2013.

4. Vehicle status of design, procurement, approvals by state safety board, testing, etc.

On December 3, 2012, SFMTA provided to FTA and PMOC a New LRV Procurement Project Work Plan – Concept Definition through Contract Award Phases Revision 1, November 6, 2012. Then on March 1, 2013, SFMTA transmitted to FTA Revision 2 of the LRV Procurement Plan and 10 attachments. The plan and supporting documents were reviewed by the PMOC and a Spot Report was provided to FTA on April 16, 2013.

5. Real Estate

The CSP is in possession of all three subsurface easements required to construct the tunnels and both fee acquisitions required to construct the YBM/MOS and CTS stations.

The CSP continued to gather documents to satisfy a pretrial discovery request from the former owner of 266 4th Street (YBM/MOS headhouse location). While the CSP has possession of this property, a hearing date has been scheduled for May 13, 2013, to determine the final purchase price.

<u>Relocation</u>

All project commercial and residential relocations are complete.

6. Labor Relations and Policies

The Small Business Enterprise goal for the new Contract 1300 was established at 20 percent. It is the PMOC's opinion that this decision will increase the project cost.

C. PROJECT MANAGEMENT PLAN AND SUB-PLANS IMPLEMENTATION

1. Project Management Plan (PMP)

SFMTA provided a PMP Revision 2 on November 11, 2011. The PMOC provided a Pre-FFGA Spot Report to FTA on November 28, 2011. The PMOC considered the PMP to be acceptable and recommended that FTA accept the CSP PMP, Revision 2, dated November 1, 2011, as acceptable for an FFGA.

The PMOC has requested an update of the PMP, which was expected in March 2013 but was not received.

2. Risk and Contingency Management Plan (RCMP)

The RCMP Revision 2, dated October 2011, was reviewed by the PMOC. An updated RCMP was expected in March 2013 and was received on April 30, 2013.

3. Safety and Security Management Plan (SSMP)

The SSMP was projected to be updated by the end of March 2013 but was not received.

4. Environmental Assessment / Mitigation Plan/Archaeological Plans

SFMTA provided a Mitigation Monitoring Reporting Program (MMRP), dated January 4, 2013, for the fourth quarter of 2012. The PMOC provided a Spot Report to FTA on February 5, 2013.

The next MMRP update was expected at the end of March 2013, but has not been submitted by the Project.

It is the PMOC's opinion that the grantee is sufficiently managing to ensure that the mitigation measures identified in the MMRP will be carried out during the course of the project.

5. Quality Assurance/Quality Control (QA/QC) Program Plan

QA/QC Plan Implementation.
Since the beginning of this project, Project QA has logged, tracked, addressed, and closed-out each recommendation/finding made by the PMOC, identifying them as a Corrective Action item and then using the overall project Corrective Action Log (CAL). The PMOC was provided with the CAL on February 14, 2013.

The Quality Manager continues to conduct training for all new members of the Project team as they are mobilized.

The PMOC requested an audit be performed of Contract 1252, specifically for compliance with policies and procedures contained in the Manual for Resident Engineers and Inspectors, with an emphasis on Change Management. The audit was completed in mid-April 2013.

6. Real Estate Acquisition and Management Plan

The Project submitted a revised Real Estate Acquisition Management Plan on June 20, 2012, for review by FTA/ the PMOC. The PMOC reviewed the plan and recommended that FTA accept it.

7. Fleet Management Plan and Service Plan

In early November 2012, SFMTA advertised a Request for Proposals, seeking to obtain Rail Systems / Operations Capacity Analysis and Professional Services to test and assess the Phase 1 + Phase 2 CSP Service Integration Plan. A contract was awarded to Systra in early January 2013. FTA and the PMOC were provided a copy of the Systra report on April 29, 2013, and the PMOC has been requested by FTA to provide a review comments.

The rail simulation is to confirm that the planned T-Third Phase 1 + Phase 2 headways provide sufficient levels of service, and concurrently, that the expected LRV car count matches the simulated frequency and operating speeds. The simulation will be used to demonstrate to SFMTA Operations that the CSP planned service and infrastructure under construction between the Chinatown terminus and the diamond and signal interlocking at 4th and King Streets will perform as expected to fulfill the 2018 Service Plan. The results will be incorporated in a revised update of the T-Third Phase 1 + 2 Service Integration Plan approved by SFMTA Operations.

SFMTA submitted a revised 2010 Transit Fleet Management Plan (TFMP) dated April 2011. The PMOC provided a Spot Report to FTA on June 16, 2011 recommending that FTA accept the TFMP as submitted as sufficient for approval of an FFGA.

D. PROJECT SCHEDULE STATUS

Table 2: Schedule Milestones	
PE:	Authorized in July 2002
Record of Decision:	Issued November 26, 2008
Final Design (FD):	Authorized in January 2010
FFGA Request:	Submitted September 2011
FFGA Executed:	October 11, 2012
Ground Breaking: (UR Contract)	February 9, 2010
RSD:	December 26, 2018

Many changes were made to the update as of March 31, 2013. The current project schedule reflects 4.7 months of buffer float, which is down from 5.2 months that was reflected last month. Overall, the buffer float is still down from the 14.8 months that was reflected in the August 2012 schedule. The minimum contingency required is ten months.

A nine-day delay is currently reflected on the master schedule due to activity TUN9710 Launch Box Excavation, Support, and Equipment Installation. Tunnel Closeout and Demobilization is scheduled to be completed on May 27, 2015, which is 15 days behind the current milestone date of April 28, 2015.

On February 19, 2013, the SFMTA Board approved moving construction of the TBM retrieval shaft to the Pagoda Palace Theater site. The March 2013 Update includes a new sequence and activities for moving the retrieval shaft

An additional two weeks were added to the schedule for tunneling work. Although the milestone is behind schedule, the project completion date has remained unchanged.

Based on the latest information for extracting the TBMs at Pagoda Palace, last month's schedule activity (TUN1150-Construct Pagoda TBM Retrieval Shaft) had 220 days float, but is now two days behind schedule. Design of the retrieval shaft began on February 20, 2013, and is scheduled to be complete on May 31, 2013. Any slip in the design for the site would cause a delay to the retrieval of the TBMs. The scheduled completion date of the retrieval shaft construction is currently March 28, 2014.

The secant pile installation at UMS continues to delay the south headwall. Current production on the 4-foot diameter and 150-foot deep piles is less than one pile per week. The contractor's schedule shows production of more than two piles per week. Delays have occurred due to equipment breakdowns, casing segment shearing, and the inability to achieve the verticality required by the contract. The pile contractor, Condon Johnson, is expected to provide a new work plan and recovery schedule and add a second rig to work on the north headwall piles**. PMOC Concern: If the contractor does not significantly increase pile production, the project may incur delay costs. Contract 1300 states that the UMS headwalls will be completed 90 days after NTP, which is expected on September 18, 2013. There are a total of 46 headwall piles. Six were completed in the first three months (February to April 2013). At the current rate, the north and south headwall piles will be complete in June 2014. The headwalls must be completed before the first TBM arrival, which is expected at UMS in early November 2013. Project Schedule contingency will be further reduced as this activity is now on the critical path.**

The critical path summary of the project is:

- Advertise/Prepare Bid - UMS, CTS, YBM/MOS, & STS
- Award - UMS, CTS, YBM/MOS, & STS
- UMS Start
- UMS Design, Submittals, and Reviews
- UMS 61 Piles West
- UMS Piles Stockton East
- UMS Piles Stockton West
- UMS Excavate Jet Grout/Roof/Pave Box Station Box
- UMS Excavate & Install Permanent Struts Platform Box Concourse to Mezzanine Level
- Excavate & Install Permanent Struts Platform Box to Mezzanine
- Excavate & Install Permanent Mezzanine Level to Platform
- UMS Place Invert
- UMS Install Platform Level Parameter Walls

- UMS Construct Platform Structure
- UMS Install Mezzanine Level Deck
- UMS Mezzanine Level Parameter Walls
- UMS Install Intermediate Strut Level Deck
- UMS Install Intermediate Strut Level Parameter Walls
- UMS Place Concourse Level Deck
- UMS Internal Walls Concourse Level
- UMS Rough In M/E/P/A Concourse and Inter Strut Levels
- UMS Finish M/E/P/A Concourse and Inter Strut Levels
- UMS Commissioning
- STS Commissioning
- UMS Buffer Float 17
- Safety & Security Certification/Pre-Revenue Test Activities
- BUF0018 Muni Float
- RSD on December 26, 2018

See Attachment D, which is a three-month look-ahead of all CSP activities.

The milestone summary level schedule and the milestone tabular report, with the current and last month's baseline Master Project Schedule (MPS) status indicated, are shown in Appendix B.

E. PROJECT COST STATUS

The Project Cost Report monthly update for March was received by the PMOC on April 25, 2013. The CSP update for the end of March consists of the following costs:

- Estimate at Completion for 1250 (UR #1 YBM/MOS site area)
- Bid for 1251 (UR #2 UMS site area) plus CMods to date
- Bid for 1252 (Tunnel) plus CMods to date
- 1253-UMS 100 percent design
- 1254-CTS 100 percent design
- 1255-YBM/MOS 100 percent design
- 1256-STS 100 percent design

The Current Cost Estimate for the CSP is $1.5783 billion in Year of Expenditure dollars and is the basis of the total project cost as presented in the 2011 New Starts Report submittal. This capital cost projection incorporates allocated and unallocated contingencies to cover the various risks associated with completion of the project.

Total net incurred costs for the project are $317.3 million. This figure reflects expenditures through FAMIS 786 Report ($298 million) plus the pay requests approved and currently being

processed ($2.1 million) and estimates of outstanding pay requests ($17.1 million). This incurred amount equals 20.1 percent of the total project budget of $1.5783 billion.

The current funding level to date is $643.6 million. This represents 40.8 percent of the total project budget.

On January 8, 2013, the PMOC requested that the Monthly Cost Report provide additional data on agreed contract change orders and potential change orders and how these cost changes affect the available allocated contingency. The CSP has now included this data in the March Monthly Progress Report.

Change Order Control.
In an effort to reduce project costs, the CSP established a CMod Task Force, which met regularly between August and October 2012. The purpose of the Task Force is to examine the current procedures and practices related to processing changes during construction and look for areas of improvement, especially related to the time to develop and process a CMod. The task force is expected to provide their recommendations to the CMB. **PMOC Concern: This Task Force is taking longer to develop and implement recommendations than anticipated.**

RE Trend Log dated 4/17/13 and Project Trend Log dated 4/17/13- Contract 1252

- 87 (5 added this month): Total identified changes including both contractor and owner-generated changes.
- 56 (14 added this month): Changes have been determined by the CMB to have merit.
- 5 additional CMods processed since March Report.
- Average number of days from COR submission by contractor to CMod execution is 183 versus previous report of 162 days.
- Average number of days from CMB approval to CMod execution is 50.8 versus previous report of 38 days.

On a major capital project, there will be a number of design and construction changes. To adequately and quickly handle change requests, a trust relationship must develop and exist between the Board and agency staff that provides a balance between responsibility and authority, and accountability for the given authorities. Change requests/change orders consume a great amount of time during a project. Quickly dealing with changes at the appropriate authority level is a major factor in saving time and associated dollars. The contractor needs to know that those administering his work have the respect and authority to do their job. Currently, John Funghi, Program Director of CSP is delegated with contracting authority to approve and execute contracts up to $100,000, with no authority to re-delegate to lower level staff. **PMOC Concern: Smaller value CORs take considerable time to process due to the involvement of upper management. Additionally, because the RE has no authority to approve these small CORs, the contractor may choose to bypass the RE on future negotiations. SFMTA should provide the RE and possibly others with authority to approve change orders.**

The CSP is preparing a "white paper" proposal outlining why a higher level of authority for change orders is needed for a project the size of Contract 1300. The current cumulative level of $5 million before requiring Board approval is considered too low. The paper will recommend

the limit of authority increase to an aggregated total of $20 million before requiring Board approval. Each contract package (1253-1256) would have a not-to-exceed allowance of $5 million. The CMB was in agreement with the proposal and requested a calendar item be developed and presented to the SFMTA Board for consideration.

Funding and Expenditures.
Federal, state, and local project funding and expenditures are shown in Table 3.

Table 3: Project Funding (x1000)

	Committed	Awarded	Expenditures Billed to date	% of Expenditure by Source
Federal				
New Starts	942,200		111,699	11.9%
Congestion Mitigation	41,025		41,025	100%
Federal Subtotal	*983,225*	*218,440*	*152,724*	*15.5%*
State				
Traffic Congestion Relief	14,000	14,000	14,000	100%
State Transportation	88,000	0	-	0.0%
Prop. 1B / PTMISEA	307,792	225,912	51,625	16.8%
Prop. 1A / High Speed	61,308	61,308	-	0.0%
State Subtotal	*471,100*	*301,220*	*65,625*	*13.9%*
Local				
Prop. K Sales Tax	123,975	123,975	98,931	79.8%
Local Subtotal	*123,975*	*123,975*	98,931	*79.8%*
Project Total:	**1,578,300**	**643,635**	**317,281**	**20.1%**

F. PROJECT RISK, RISK MANAGEMENT AND RISK MITIGATION

A Risk Mitigation Meeting was held on April 11, 2013, and was attended by the PMOC. Discussions focused on the implementation of the Contract 1300 combined contracting strategy and the new risks associated with changing the location of the North Beach retrieval shaft.

Cost Contingency.
The current Total Project Contingency remains at **$184.9 million**, which is a $24.9 million favorable balance against the current Minimum Contingency level of $160 million. The PMOC is reporting the total contingency remaining at $182.5 million.

See Attachment F for cost contingency drawdown graph.

Schedule Contingency.
Major schedule changes occurred in the September 2012 update of the MPS. The changes were primarily due to the revised contracting strategy of combining the remaining four contracts (UMS-1253, CTS-1254, YBM/MOS-1255, and STS-1256) into one package (Contract 1300). The September 2012 project schedule reflected 5.2 months of buffer float, which was a significant change from the previous month's reported float of 14.8 months. The January 2013 project schedule reflected 5.8 months of buffer float and the recently received February 2013

project schedule reflects 5.2 months of buffer float. The reduction in float from January 2013 to February 2013 was due to the delay in awarding Contract 1300 .CTS and UMS had been planned for NTP in the summer and fall of 2012, respectively, but were delayed significantly to be packaged together with YBM/MOS and STS. **PMOC Concern: In accordance with FTA guidelines, a minimum of 10 months of Schedule Contingency is required at this phase of the project.**

The CSP is planning to submit justification to decrease the minimum schedule contingency based on risk. The PMOC has been requesting justification for the reduction in schedule contingency and/or a Recovery schedule from the CSP since October 2012. **The PMOC, FTA Region IX, and FTA Headquarters are concerned that it has taken the CSP so long to address this serious deficiency.**

See Attachment F for schedule contingency drawdown graph.

G. ACTION ITEMS AND CONCERNS

Action Items are included in Attachment E.

APPENDIX A. THREE-MONTH LOOK-AHEAD (May 2013 to July 2013)

SFMTA Management:

- Prepare Monthly Progress Reports.
- Submit the 2nd quarter MMRP at the end of June 2013.
- Finalize and implement the CMod Task Force recommendations.
- Hire REs, Assistant Engineers, and support staff for the start of Contract 1300 construction before June 2013.
- Develop plans and negotiate contracts for the proposed North Beach retrieval shaft option.
- Submit justification for schedule contingency reduction and/or recovery plan.
- Update RCMP.
- Update PMP.
- Update SSMP.

SFMTA Design and Contracts:

- Evaluate bids and award Contract 1300.
- The Project will continue to respond and comment to the Department of Building Inspections to obtain building permits for the three stations.

SFMTA Construction Activities:

- 1251 UR (UMS). Closeout documentation is being processed.
- 1252 Tunnel. Work continues on construction of the TBM Launch Box. YBM/MOS and UMS headwall construction will continue. Excavation of the Ellis Street shaft continues. North Beach retrieval shaft work is on hold pending decisions on the relocation of this shaft. TBM fabrication will be complete during this quarter and the TBMs will be shipped. Tunnel liner segments will be in full production.
- Issue Contract 1300 NTP.

SFMTA Real Estate Activities:

- The Project will continue to work with property managers, owners, and attorneys to acquire all the needed property agreements. Some properties will proceed through condemnation.

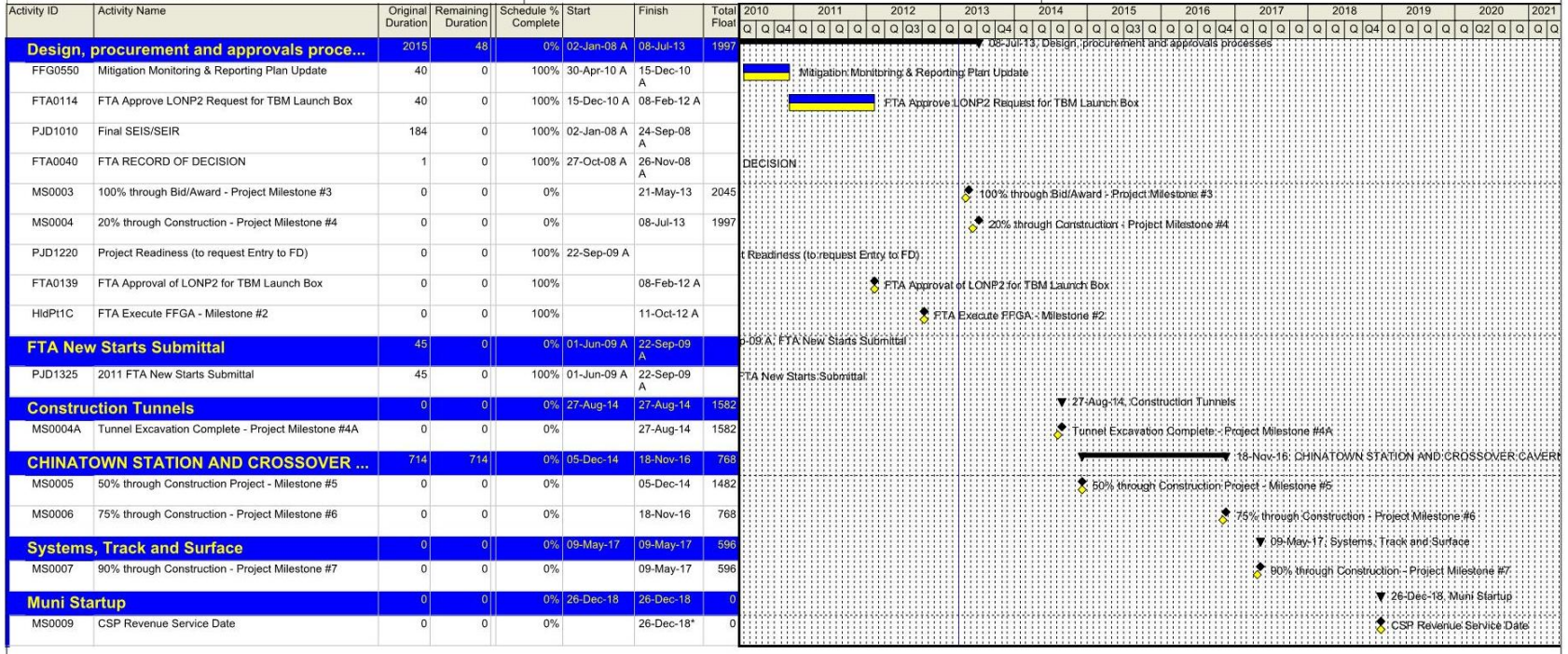
The PMOC expects to attend the following meetings:

- Weekly Management (Monday)
- Weekly CMB (Wednesday)
- Weekly Tunnel Construction (Thursday)
- Real Estate every other week (Tuesday)
- Monthly Risk (second Thursday of the month)
- Monthly SSCC (third Thursday of the month)
- Quarterly FLSC
- Dispute Review Board scheduled for April 30, 2013
- FTA/QPRM scheduled for May 22, 2013

APPENDIX B. CSP SCHEDULE UPDATE

SFMTA Central Subway Project - March 2013 Update | SFMTA Milestone Report_1 | 29-Apr-13 13:40

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
Design, procurement and approvals proce...		2015	48	0%	02-Jan-08 A	08-Jul-13	1997
FFG0550	Mitigation Monitoring & Reporting Plan Update	40	0	100%	30-Apr-10 A	15-Dec-10 A	
FTA0114	FTA Approve LONP2 Request for TBM Launch Box	40	0	100%	15-Dec-10 A	08-Feb-12 A	
PJD1010	Final SEIS/SEIR	184	0	100%	02-Jan-08 A	24-Sep-08 A	
FTA0040	FTA RECORD OF DECISION	1	0	100%	27-Oct-08 A	26-Nov-08 A	
MS0003	100% through Bid/Award - Project Milestone #3	0	0	0%		21-May-13	2045
MS0004	20% through Construction - Project Milestone #4	0	0	0%		08-Jul-13	1997
PJD1220	Project Readiness (to request Entry to FD)	0	0	100%	22-Sep-09 A		
FTA0139	FTA Approval of LONP2 for TBM Launch Box	0	0	100%		08-Feb-12 A	
HldPt1C	FTA Execute FFGA - Milestone #2	0	0	100%		11-Oct-12 A	
FTA New Starts Submittal		45	0	0%	01-Jun-09 A	22-Sep-09 A	
PJD1325	2011 FTA New Starts Submittal	45	0	100%	01-Jun-09 A	22-Sep-09 A	
Construction Tunnels		0	0	0%	27-Aug-14	27-Aug-14	1582
MS0004A	Tunnel Excavation Complete - Project Milestone #4A	0	0	0%		27-Aug-14	1582
CHINATOWN STATION AND CROSSOVER ...		714	714	0%	05-Dec-14	18-Nov-16	768
MS0005	50% through Construction Project - Milestone #5	0	0	0%		05-Dec-14	1482
MS0006	75% through Construction - Project Milestone #6	0	0	0%		18-Nov-16	768
Systems, Track and Surface		0	0	0%	09-May-17	09-May-17	596
MS0007	90% through Construction - Project Milestone #7	0	0	0%		09-May-17	596
Muni Startup		0	0	0%	26-Dec-18	26-Dec-18	0
MS0009	CSP Revenue Service Date	0	0	0%		26-Dec-18*	0



Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone
Summary

Page 1 of 1

SFMTA Central Subway Project

Project Milestones as of March 31, 2013

SFMTA Milestone Comparison

Baseline/Last Month/Current Month 3/31/2013

Activity ID	Activity	Approved Baseline 5/31/09	Update 2/28/2013	Update 3/31/2013
MS0001	FTA Approval to Enter FD	10/19/2009	1/07/2010A	1/07/2010A
MS0002	FTA Execute FFGA	6/13/2011	10/11/2012A	10/11/2012A
MS0003	100% Through Bid/Award	12/28/2011	5/7/2013	5/21/2013
MS0004	20% Through Construction	11/29/2012	6/11/2013	7/8/2013
MS0004A	Tunnel Excavation Complete	2/19/2013	8/8/2014	8/27/2014
MS0005	50% Through Construction	1/8/2014	12/5/2014	12/5/2014
MS0006	75% Through Construction	6/20/2014	11/4/2016	11/18/2016
MS0007	90% Through Construction	7/20/2016	4/25/2017	5/9/2017
MS0008	Construction Complete	1/17/2018	4/30/2018	5/14/2018
MS0009	CSP Revenue Operations	12/26/2018	12/26/2018	12/26/2018
MS0010	CSP Complete	4/27/2022	12/30/2020	12/30/2020

APPENDIX C. LESSONS LEARNED

LL#	Date	Phase	Category	Subject	Lesson Learned
1	09-30-10	FD	Management	Consultant Contracts	The Project must have a full understanding of the agency and other approving governmental authorities to avoid delay of contract approval and consequential delay of the MPS.
2	09-30-10	FD	Cost	Staffing Plan	The project staffing plan needs to be formatted during PE and updated at least quarterly during FD to manage Standard Cost Category 80 costs and monitor design production.
3	09-30-10	FD	Scope	Letter of No Prejudice (LONPs)	A defined scope of grantee and PMOC responsibilities needs to be provided for content and acceptability of LONP requests.
4	09-30-10	FD	Management	SSMP	FD consultants should be trained, shortly after mobilization, in the format and their responsibility regarding the System Safety Consultant.
5	10-30-10	FD	Cost	Baseline Cost Estimate (BCE) Update	The BCE should be updated with current costs as soon as they are known by the Project to allow mitigation of cost contingency usage.
6	02-21-12	FD	Management	Program Controls	Program Controls system/software selected for use for the duration of the project should be in place and functional prior to approval to enter FD. Doing so will avoid a transition during FD that could create a lag in timely reporting of cost and schedule status.
7	02-21-12	FD	Management	Risk Mitigation	Oversight Procedure (OP) 40 needs to be revised to establish minimum requirements for secondary mitigation at different phases of the project, similar to those for cost and schedule contingency. The PMOC recommends 5% of project cost at Entry into FD and 3% at execution of an FFGA.
8	02-21-12	FD	Scope	Third Party Agreements	All third party agreements need to be identified as soon as possible, but no later than 65% design completion. This includes leases, both temporary

LL#	Date	Phase	Category	Subject	Lesson Learned
					and permanent; MOUs; and licenses, specifically for preconstruction property surveys and settlement monitoring instruments (especially important for underground construction). These third party agreements need to be secured no later than the advertisement date of the construction that they affect. Third party agreements need to be tracked by the project continuously, reported monthly, and updated in a third party agreement matrix submitted quarterly to FTA.
9	02-21-12	FD	Cost	Cost Estimating Procedures	During the preliminary design phase, the project should establish the cost estimating procedures, format, and software to be used by all estimating entities for the entire duration of the project.
10	02-21-12	FD	Cost	Allocated Cost Contingency	In the BCE submitted to FTA for Entry into FD, the Project should identify percentages of allocated cost contingency contained in the BCE that are apportioned for design risk, market risk, and construction risk.
11	02-28-12	FD	QA	Design Management Action Log	Design Management should develop a matrix as a tracking tool to document, track, and close out known elements that are missing from design submission packages.
12	08-15-12	FD	Environmental Mitigations	MMRP	Numerous mitigations identified in the MMRP are to be handled by incorporating specific design details and/or statements in the contract drawings and technical specifications. The grantee should note on the MMRP the relevant drawings and/or technical specifications.

LL#	Date	Phase	Category	Subject	Lesson Learned
13	08-31-12	FD	Management	Risk Contingency Levels and Hold Points	It became apparent, during the monitoring of the cost contingency drawdown curve for the project that the contingency levels and hold points no longer represented the current stage of project development and risk reduction/contingency usage related to project development. The project advanced through 100 percent project design; however, the project did not receive credit for the cost contingency usage established by the risk model. The PMOC recognized this deficiency and participated with the grantee in developing a cost contingency drawdown that reflects current project development and reduced risk.

APPENDIX D. CONTRACT STATUS

The following sections provide the status of ongoing contracts associated with the CSP.

Contract No.	**1250**	
Contract Description:	**UR #1 (YBM/MOS)**	
Status:	Completed June 2011.	
Cost:	Original Contract Value	$9,273,939
	Approved Change Orders	$2,694,211
	Current Contract Value	$11,968,150
	Expended to Date	$11,968,150
	% Expended	100
	DBE Participation	
Schedule:	Completed June 2011	
Issues or Concerns:	Final claim by contractor for delays caused by Archaeological discoveries has not been resolved.	

Contract No.	**1251**	
Contract Description:	**UR #2 (UMS)**	
Status:	Work is complete. Project closeout continues	
Cost:	Original Contract Value	$16,832,550
	Approved Change Orders	$3,962,031
	Current Contract Value	$20,794,581
	Expended to Date	$20,794,581
	% Expended	100
	DBE Participation	
Schedule:	Substantial completion in August 2012	
Issues or Concerns:		

Contract No.	**1252**	
Contract Description:	**Tunnels**	
Status:	NTP 1 was January 2012. TBM Launch box is under construction.	
Cost:	Original Contract Value	$233,584,015
	Approved Change Orders	($2,897,916)
	Current Contract Value	$230,686,099
	Expended to Date	$93,774,273
	% Expended	40.1%
	DBE Participation	
Schedule:	Substantial completion expected March 2015. Total contract days are 1,150.	
Issues or Concerns:	UMS headwalls behind schedule	

Contract No.	**1300**	
Contract Description:	**UMS, CTS, YBM/MOS, and STS.**	
Status:	Design is complete. Four contracts have been combined into one. Bids opened April 18, 2013	
Cost:	Original Contract Value	Estimated cost is $720-740 million
	Approved Change Orders	NA
	Current Contract Value	NA
	Expended to Date	NA
	% Expended	NA
	DBE Participation	Contract states 20%
Schedule:	The project was advertised for bid on October 22, 2012. NTP is expected June 7, 2013.	
Issues or Concerns:	NTP continues to slip. Schedule contingency is reduced with each delay	

Contract No.	**CS-155-1**

Contract Description:	**Design Package 1 for contracts 1250, 1251, and 1252. PB/ Telemon**	
Status:	Design is complete. Construction support is ongoing for contract 1252.	
Cost:	Original Contract Value	$5,795,000 (includes exercised options)
	Approved Change Orders	$ 642,886
	Current Contract Value	$6,967,838
	Expended to Date	$6,734,426
	% Expended	96.65%
	DBE Participation	32.75%
Schedule:		
Issues or Concerns:		

Contract No.	**CS-155-2**
Contract Description:	**Design Package 2 for UMS, CTS, and YBM/MOS. CSDG prime**
Status:	Designs are complete for all of the station contracts. Construction support will begin after award of contract 1300.

Cost:	Original Contract Value	$35,059,252 (includes exercised options)
	Approved Change Orders	$1,010,600
	Current Contract Value	$36,069,852
	Expended to Date	$26,255,497
	% Expended	72.8%
	DBE Participation	41.8%
Schedule:		
Issues or Concerns:		

Contract No.	**CS-155-3**	
Contract Description:	**Design Package 3 for STS. HNTB-B&C Prime**	
Status:	Design is complete. Construction support will begin after award of contract 1300.	
Cost:	Original Contract Value	$16,822,238
	Approved Change Orders	$312,814
	Current Contract Value	$17,135,052
	Expended to Date	$11,343,568
	% Expended	66.2%
	DBE Participation	30.2%
Schedule:		
Issues or Concerns:	Unexercised options not included in figures above	

Contract No.	**CS-149**
Contract Description:	**Central Subway Partnership (PM/CM).**
Status:	On-going

Cost:	Original Contract Value	$85,139,092
	Approved Change Orders	0
	Current Contract Value	$85,139,092
	Expended to Date	$33,347,697
	% Expended	38%
	DBE Participation	32%
Schedule:		
Issues or Concerns:		

Contract No.	**CS 156**	
Contract Description:	**Project Controls Consultant.**	
Status:	On-going.	
Cost:	Original Contract Value	$17,112,873
	Approved Change Orders	0
	Current Contract Value	$17,112,873
	Expended to Date	$5,236,011
	% Expended	30.6%
	DBE Participation	22.15%
Schedule:		
Issues or Concerns:	Consultant has not provided sufficient staff to maintain project controls.	

APPENDIX E. LIST OF ACRONYMS

BART	Bay Area Rapid Transit
BCE	Baseline Cost Estimate
CAL	Corrective Action Log
CMB	Configuration Management Board
CMOD	Contract Modification
COR	Change Order Request
CPUC	California Public Utilities Commission
CSP	Central Subway Project
CTS	Chinatown Station
FD	Final Design
FFGA	Full Funding Grant Agreement
FLSC	Fire and Life Safety Committee
FTA	Federal Transit Administration
LONP	Letter of No Prejudice
LRV	Light Rail Vehicle
MMRP	Mitigation Monitoring Reporting Program
MOU	Memorandum of Understanding
MPS	Master Project Schedule
NTP	Notice to Proceed
OP	Oversight Procedure
PE	Preliminary Engineering
PM/CM	Project Manager/Construction Manager
PMOC	Project Management Oversight Contractor
PMP	Project Management Plan
QA/QC	Quality Assurance/Quality Control
QPRM	Quarterly Progress Review Meeting
RCMP	Risk and Contingency Management Plan
RE	Resident Engineer
RSD	Revenue Service Date
SFFD	San Francisco Fire Department
SFMTA	San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SSCC	Safety and Security Certification Committee
SSMP	Safety and Security Management Plan
STS	Surface, Track, and Systems
TBM	Tunnel Boring Machine
TFMP	Transit Fleet Management Plan
UMS	Union Square/Market Street Station
UR	Utility Relocation
YBM/MOS	Yerba Buena/Moscone Station