**MINI-MONTHLY REPORT**

**NOVEMBER 30, 2013**

**Central Subway Project**

San Francisco Municipal Transportation Agency (SFMTA)

San Francisco, CA

Draft Report delivered to FTA on December 9, 2013

Final Report delivered to FTA on December 11, 2013

Final Report, Revision 1, delivered to FTA on December 18, 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

**STV Incorporated, 225 Park Avenue South, New York, NY 10003**

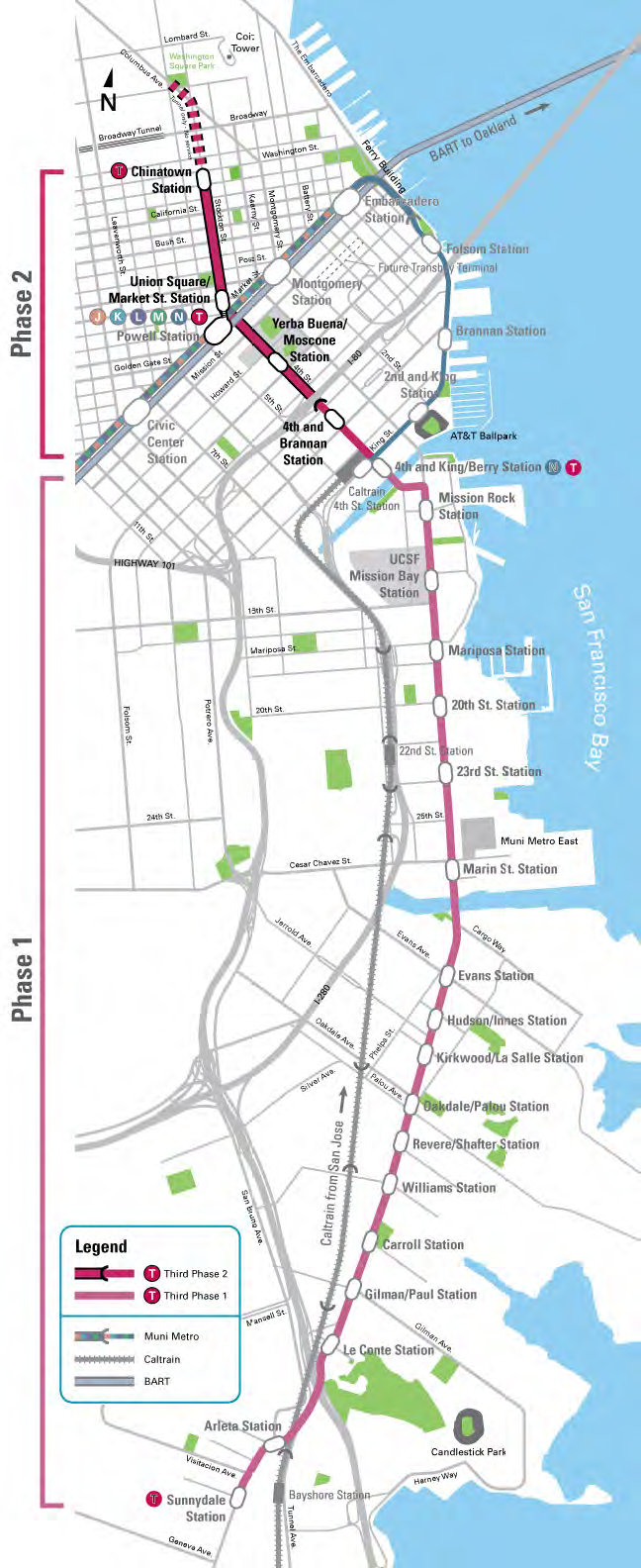
James Sampson, Program Manager

Voice – 303.442.0708; Email – james.sampson@stvinc.com

**EXECUTIVE SUMMARY**

**CENTRAL SUBWAY**

**PROJECT DESCRIPTION**

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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’s (SFMTA) 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 down-town.

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**

Design

* All designs are complete.

Construction

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

* Work is complete. Closeout continues.

Contract 1251 (UR #2).

* Work is complete. Closeout continues.

Contract 1252 Tunnel.

* Work is 66 percent complete, based on Earned Value to date.

Contract 1300 Stations and Systems/Trackwork.

* Notice to Proceed (NTP) was issued on June 17, 2013. Early submittals and pre-construction activities continue. Demolition of the existing structures at both the Chinatown Station (CTS) and Yerba Buena/Moscone Station (YBM) headhouses were completed the end of November 2013.

**Schedule**

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

The October 2013 project schedule reflects 4.8 months of buffer float, which is below the minimum agreed to level of 8.0 months of schedule contingency at this phase of the project.

**Cost**

Cost Estimate: $1.5783 billion

Total Contingency: $69.48 million (minimum contingency is $140 million)

Total net incurred costs: $445.89 million (28 percent of the total project budget)

Current funding level: $785.4 million (50 percent of the total project budget)

**TOP ISSUES AND RECOMMENDATIONS**

* The tunnel boring machine (TBM) in the southbound tunnel had a successful undercrossing of the Bay Area Rapid Transit (BART) tunnels at the end of November. Reported movements of the BART tunnels and surrounding infrastructure were negligible; therefore, no compensation grouting was needed.
* The recent monthly cost reports prepared by the CSP were found to have numerous unexplained changes. SFMTA is having problems with the reporting coming out of the EcoSys Enterprise Planning and Controls (EPC) database, which is affecting the cost reporting for the CSP. The Project Management Oversight Contractor (PMOC) has notified CSP to make corrections and provide details for cost changes. As of December 5, the PMOC had not received the Cost Reporting Summary sheet.
* It is important that the CSP team highlight and identify changes from the previous cost report. This maintains a project cost narrative throughout the term of the project. The Federal Transit Administration (FTA) requires that project monthly cost reports be produced in the FTA standard cost category (SCC) format to allow comparisons to be made to assigned budget amounts and to show changes to these cost codes as the project develops through to completion. This could not be done with the recent changes made to the cost report and the previously stated issues with the EcoSys EPC database.
* At this time, the Contract 1300 Baseline Schedule has only been partially submitted by the contractor. The CSP has incorporated the Contract 1300 Bid Schedule and unapproved station (CSP and YBM) activities into the current Master Project Schedule (MPS).
* In October 2013, the CSP submitted the Draft Contingency Management – Schedule Update, which proposed changes to the schedule contingency minimum levels based on a recent risk assessment performed by the Central Subway team. The team used risk-based software, which employs the Monte Carlo method, to perform a probability analysis on the Project’s Summary Schedule. At this time, the PMOC cannot recommend that FTA accept any modification to schedule contingency minimum levels. The PMOC recommends that the CSP incorporate the Contract 1300 Baseline Schedule as soon as it is approved. At that time, the PMOC recommends that the CSP incorporate the remaining high level schedule risks on the Project Risk Register into a new risk assessment.
* The current project schedule reflects 4.8 months of contingency, which is below the minimum agreed to schedule contingency level of 8.0 months.
* **The Resident Engineer (RE) for Union Square/Market Street Station (UMS) was expected to start in early November, but will not start until January 6, 2014. It is the PMOC’s opinion that the CSP is understaffed in the following positions: Inspectors, Environmental Inspector/Engineer, Office Engineers (OEs), and the UMS RE. While the bulk of work for Contract 1300 will not occur until after the first of the year, there is a significant amount of information with which the newly hired staff will need to become familiar. The PMOC recommends hiring these new employees as soon as possible.**
* FAR 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels requires the use of U.S. flag vessels for at least 50 percent of the cargo from foreign ports. The tunnel contractor, Barnard Impregilo Healy JV (BIH), did not comply with said requirement. BIH has provided documentation, including the ocean carrier’s freighted bills of lading, to the U.S. Maritime Administration (MARAD). MARAD is currently considering imposing some type of corrective action on BIH.

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 | | $1,578,300,000 | $1,578,300,000 |
| **Contingency** | Unallocated Contingency | | $74,722,000 | $3,883,480 |
| Total Contingency  (Allocated plus Unallocated) | | $185,500,000 | $69,483,071 |
| **Schedule** | Revenue Service Date | | 12/26/2018 | 12/26/2018 |
|  | | | | |
| **Total Project Percent Complete** | Based on Expenditures | | 28.2% | |
| Based on Earned Value | | 31.75% | |
|  | | | | |
| **Major Issues** | **Status** | | **Comments/Planned Action** | |
| Schedule Contingency | Project schedule contingency is currently at 4.8 months. | | The minimum schedule contingency agreed to at this stage of the project is eight months. The CSP recently submitted justification to decrease the minimum required, but this has not been accepted. | |
| Cost Reporting | The CSP has agreed to revise the format of the cost summary spreadsheet and provide details for cost changes. The CSP is experiencing problems with the Cost Reporting information coming from the EcoSys EPC database. | | The June summary cost report prepared by the CSP was found to have numerous unexplained changes. In addition, no summary cost report has been provided for several months. | |
| **Date of Next Quarterly Meeting:** | | January 29, 2014 | | |

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**CENTRAL SUBWAY**

**A. GRANTEE’S CAPABILITY AND APPROACH**

1. **Technical capacity and capability to conduct the project**

**Assessment Status.**

An updated staffing plan (October 2013 to March 2014) was provided to the PMOC on October 13. The PMOC provided comments and the CSP submitted a revised version on November 19.

The PMOC is monitoring the staffing needs for Contract 1300 and reviewing resumes of potential new hires.

**PMOC Concern: The RE for UMS was expected to start in early November, but will not start until January 6, 2014. It the PMOC’s opinion that the CSP is understaffed in the following positions: Inspectors, Environmental Inspector/Engineer, OEs, and the UMS RE. While the bulk of work for Contract 1300 will not occur until after the first of the year, there is a significant amount of information with which the newly hired staff will need to become familiar. The PMOC recommends hiring these new employees as soon as possible.**

1. **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.

**PMOC Concern: The CSP is experiencing problems with the Cost Reporting information coming from the EcoSys EPC database. This is affecting the cost reporting and causing the staff to manually input data. At this time, the CSP has abandoned the cost information coming from EcoSys EPC. A complete Cost Report has not been provided by the CSP since May 2013.**

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

1. **Compliance with applicable statutes, regulations, guidance, and FTA agreements**

FAR 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels requires the use of U.S. flag vessels for at least 50 percent of the cargo from foreign ports.

The tunnel contractor, BIH, did not comply with said requirement. BIH has provided documentation, including the ocean carrier’s freighted bills of lading, to MARAD. MARAD is currently considering imposing some type of corrective action on BIH.

**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.

* 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.

* Work is complete.

*Contract 1252 Tunnel.*

* TBM #1 launched on July 22 and reached Sta. 151+86 on October 28, 2013. TBM #2 launched on October 25, 2013 and is currently at Sta. 135.
* YBM headwalls are complete.
* UMS: Street restoration of Stockton Street should be complete by November 26.
* The Ellis Street shaft is complete and numerous compensation grout pipes have been installed.
* Twenty of the 57 North Beach retrieval shaft soil mix wall panels were complete by the end of November.

*Contract 1300 [Combination of UMS, CTS, YBM, and Surface, Track, and Systems (STS)]*

* Bid opening was April 18, 2013. NTP was issued on June 17, 2013.
* Demolition of the building at the CTS location was completed October 31, 2013. Archaeological investigations and environmental soil borings are in progress.
* Demolition of the YBM site (former 76 Gas Station) began on October 14. The underground storage tanks were removed on November 25, 2013.

**Fire and Life Safety/ Safety and Security Issues**.

* The Construction Specification Conformance Checklists have been completed and approved for all construction packages. In September, the California Public Utilities Commission (CPUC) staff began attending monthly as-built meetings to review the completed items.
* The San Francisco Fire Department (SFFD) regularly attends the now combined Fire and Life Safety Committee (FLSC) and Safety and Security Certification Review Committee (SSCRC) meetings. The SFFD will continue to coordinate with the Tunnel and Stations projects to identify issues of importance during construction.
* An updated Safety and Security Management Plan (SSMP) has been pending completion by the SFMTA since March 2013.

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

**BART.**

All of the Tunnel contract instrumentation and monitoring equipment has been installed. BART requested additional testing and monitoring of existing tunnel lining bolts. This equipment installation is now complete.

The Central Subway TBM in the southbound tunnel crossed under the BART tunnels on November 28 and 29, 2013. The TBM passed under BART with very minimal movements detected. The TBM in the northbound tunnel is expected to cross in mid-January 2014. The Independent Review Panel (IRP) has had numerous discussions with BART, CSP, and the Contractor staff regarding the status of tunneling operations and any issues related to the crossings.

**Caltrans.**

No updates to report.

**CPUC Communications.**

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

**San Francisco Public Utilities Commission (SFPUC**)

The CSP has been negotiating with the SFPUC on a Memorandum of Understanding (MOU) regarding additional sewer work to be undertaken south of the 4th Street portal. This additional sewer work will be covered as a Design-Build portion of Contract 1300.

A contractor recently discovered problems with several of the existing sewer lines in North Beach. Auxiliary water lines running directly through the existing sewers prevented slip lining many of the lines prior to tunneling activities, as previously planned. The CSP is in discussions with the SFPUC to determine a solution.

**San Francisco Parks and Recreation Department**  
The MOU for the Union Square Garage with the Parks and Recreation Department has been completed.

**Private Property Owners**

The Project is trying to reach agreement with the owner and homeowners association of 950 Stockton (Mandarin Tower) to monitor and install grout pipes to protect the property. Condemnation was filed on July 8, 2013, and possession is expected in April 2014.

For 1455 Stockton (Bank of America), the Project has negotiated an agreement to construct a compensation grouting shaft. The agreement was received on September 18, 2013.

For 19 Stockton, the owner has been unresponsive. Condemnation was filed in February 2013. Pre-judgment possession granted October 3, 2013. Possession is expected on November 6, 2013. The owner has allowed the CSP onto the site to conduct Pre-construction surveys.

Negotiations continue for all other property agreements required for the project. These agreements will allow SFMTA to install settlement monitoring equipment at sensitive buildings adjacent to the project. There are now 370 total licenses (ten were added to address the potential Pagoda retrieval shaft) and property agreements.

**PMOC Concern: Delays to the possession of these properties could impact construction activities. The PMOC will assess these potential delays based upon the latest schedule update from the project office.**

1. **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 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 into one contract (Contract 1300). This contract was awarded in May 2013.

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

SFMTA issued a Request for Proposals on September 30, 2013, for the procurement of 260 LRVs. This follows a Request for Qualifications, which was issued on March 29, 2013. Three car builders were deemed to be in the competitive range and were requested to submit proposals. Bids are due on December 10, 2013.

1. **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 and CTS stations.

Relocation

All project commercial and residential relocations are complete.

1. **Labor Relations and Policies**

The Small Business Enterprise (SBE) goal for the new Contract 1300 was established at 20 percent. The winning contractor has bid the contract with nearly 25 percent SBE participation.

**C. PROJECT MANAGEMENT PLAN AND SUB-PLANS IMPLEMENTATION**

1. **Project Management Plan (PMP)**

The PMOC received an updated PMP Revision 3 on May 20, 2013, which addressed many of the previous PMP comments. FTA accepted PMP Revision 3, dated May 1, 2013.

1. **Risk and Contingency Management Plan (RCMP)**

An updated RCMP Revision 3 was received by the PMOC on April 30, 2013. The PMOC provided its final Spot Report to FTA on July 19, 2013.

SFMTA submitted a CSP “Contingency Management – Schedule 2012 Update” on May 22, 2013. On October 11, 2013, the CSP provided an updated report with justification in the form of schedule modeling. The PMOC provided a review of this document to FTA on November 21, 2013, and cannot recommend that FTA accept any modification to schedule contingency minimum levels based on the current documentation provided.

1. **SSMP**

The SSMP was projected to be updated by the end of March 2013 but has not yet been completed.

1. **Environmental Assessment / Mitigation Plan/Archaeological Plans**

The PMOC received the Third Quarter 2013 Mitigation Monitoring Reporting Program (MMRP) update from SFMTA on September 27, 2013, and provided a Spot Report to FTA on October 28.

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.

Contract Specifications have been prepared to address construction operations and potential archaeological discoveries. SFMTA and the contractors are required to retain the services of a qualified archaeologist to carry out these provisions.

1. **Real Estate Acquisition Management Plan (RAMP)**

The PMOC received the RAMP, Revision 5, dated September 26, 2013, on November 19, 2013. The PMOC will provide to FTA a review of the Real Estate costs included in the RAMP.

1. **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.

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

1. **Fleet Management Plan and Service Plan**

SFMTA submitted a Rail Systems / Operations Capacity Analysis to test and assess the Phase 1 + Phase 2 CSP Service Integration Plan. The PMOC reviewed the report and provided comments to FTA on June 27, 2013. Additionally, an updated Transit Fleet Management Plan (TFMP) was expected from SFMTA at the end of September**. PMOC Concern: There are several assumptions and simplifications in the model that, if addressed, could potentially change the results of the simulation in a negative way. The magnitude of potential changes cannot be estimated without further analysis, and the PMOC cannot offer a strong opinion on the validity of the simulation results based on the information provided. SFMTA responded to the comments in the PMOC’s report on September 20, 2013. The responses will be reviewed in conjunction with the TFMP, which has not yet been submitted to FTA.**

**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:  (Utility Relocation Contract) | February 9, 2010 |
| RSD: | December 26, 2018 |

Major changes were made to the update as of October 31, 2013. The latest schedule has been revised and interface points have been used to link the tunnel contractor’s detailed schedule to the current MPS.

A number of activities have been added to the project schedule based on the station contractor not having an approved Baseline Schedule. The activities that were added start on November 1, 2013, and run through August 1, 2014. These activities tie to summary activities for the balance of work. Currently, the MPS for Contract 1300 (three stations and systems/trackwork) consists of “unapproved” contractor activities, portions of the Contractor’s Bid schedule, and activities from the older Baseline Schedule. A total of 185 activities were added to the current MPS.

**PMOC Concern: At this time, the Contract 1300 Baseline Schedule has only been partially submitted by the contractor. The CSP is in an awkward position of not knowing what activities are planned in the coming months, which does not allow the Project to properly plan their resources or inform the community or other interested parties.**

The assembly, testing, and commissioning of both TBMs have not progressed as planned. The second TBM (northbound) was expected to launch on October 4 (zero days float), but did not launch until October 25, 2013, which was 15 days behind schedule. The TBM then stopped on November 18 to install the conveyor system and supporting facilities. The stoppage was expected to last two weeks, but will actually be closer to three weeks, further delaying the tunneling operation.

The demolition of the Pagoda Theater to allow for construction of the new TBM retrieval shaft was contracted out to MH Construction, a local small business. The demolition work started on July 16 and was expected to be completed by August 23, but was not finished until September 27, 2013. Due to delay of the Pagoda demolition, the 1252 contractor did not start retrieval shaft construction on September 9, 2013, as originally scheduled.

As of September 30, 2013, the RSD for the project is December 26, 2018, which was the date approved in the Baseline Schedule.

**The critical path summary of the project is:**

* CTS Submittals, Permits & Perform Environmental Soil Borings
* CTS Building Demolition
* CTS Install Guidewalls, Slurry Walls and Install Surface Deck
* CTS Excavate Headhouse & Bracing
* CTS SEM & Install Supports
* CTS Headhouse Structural Concrete/Remove Bracing
* CTS Install M/E/P
* STS Start Up & Testing
* CTS P-1254R Commissioning Complete
* BUF0017 STS Buffer Float
* STS Safety and Security Certification / Pre-Revenue Activities
* BUF0018 Muni Float
* RSD on December 26, 2018

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

**E. PROJECT COST STATUS**

The Project Cost Reporting monthly update for October was received by the PMOC on October 25, 2013. The PMOC and the CSP have had numerous discussions over the past couple of months regarding the cost reporting by the project.

It is important that the CSP team highlight and identify changes from the previous month’s report. This maintains a project cost narrative throughout the term of the project. FTA requires that project monthly cost reports are produced in the FTA SCC format to allow comparisons to be made to assigned budget amounts and to show changes to these cost codes as the project develops through to completion. This could not be done with the recent changes made to the cost report.

**PMOC Concern: The recent monthly cost reports prepared by the CSP were found to have numerous unexplained changes. SFMTA is having problems with the reporting coming out of the EcoSys EPC database, which is affecting the cost reporting for the CSP. The PMOC has notified CSP to make corrections and provide details for cost changes. Numerous discussions have taken place and the CSP has determined that they will revise the format of the Cost Reporting Summary sheet to improve overall reporting. The PMOC understands that the CSP will provide two new spreadsheets to report on costs, changes, and contingencies as required by FTA. As of December 5, the PMOC had not received the Cost Reporting Summary sheet.**

The Current Cost Estimate for the CSP is $1.5783 billionin 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 $445.89 million. This figure reflects expenditures through FAMIS 786 Report ($391.03 million) plus the utilities joint trench Form B reimbursement payment ($8.28 million) and estimates of outstanding pay requests ($46.58 million). This incurred amount equals 28.24 percent of the total project budget of $1.5783 billion.

The current funding level to date is $785.41 million, which represents 50 percent of the total project budget. The total funding includes the previously funded amount of $643.635 million plus $141.77 million from the FY2013 New Starts Grant approved by FTA at the end of September 2013.

**Change Order Control.**

The Contract 1252 RE Trend Log dated November 20, 2013, had the following activities:

* One-hundred-thirty-two (nine added this past quarter): Total identified changes including both contractor and owner-generated changes.
* No Contract Modifications (CMods) have been processed since August 2013.
* The average number of days from Change Order Request submission by the contractor to CMod execution is 126.
* The average number of days from Configuration Management Board (CMB) approval to CMod execution is more than 53.8.

**PMOC Concern: The execution of CMods 19-24 have been delayed pending legal approval of CMod 19. The PMOC has requested that CMods are not assigned a number until legal approval is established. The Project made a change to Procedure CM 1103 so that this situation does not occur in the future.**

**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 | 319,185 | 176,187 | 18.7% |
| Congestion Mitigation | 41,025 | 41,025 | 41,025 | 100% |
| *Federal Subtotal* | *983,225* | *360,210* | *217,212* | *22.1%* |
| **State** |  |  |  |  |
| Traffic Congestion Relief Program | 14,000 | 14,000 | 14,000 | 100% |
| State Transportation Improvement Program | 88,000 | 0 | 0 | 0.0% |
| Prop. 1B / PTMISEA | 307,792 | 225,912 | 88,413 | 28.7% |
| Prop. 1A / High Speed Rail | 61,308 | 61,308 | 17,744 | 28.9% |
| *State Subtotal* | *471,100* | *301,220* | *120,157* | *25.5%* |
| **Local** |  |  |  |  |
| Prop. K Sales Tax | 123,975 | 123,975 | 100,230 | 78.4% |
| *Local Subtotal* | *123,975* | *123,975* | 100,230 | *78.4%* |
| **Project Total:** | **1,578,300** | **785,405** | **437,600** | **27.7%** |

**Earned Value Analysis.**

May 2013 was the first monthly report in which the CSP has provided Appendix B, Earned Value Analysis. The project baseline for the MPS is set as the current schedule, which computes the planned values based on the budget at completion multiplied by the schedule percentage complete (baseline). Once the baseline is established, following the efforts to detail soft costs and accept the baseline for Contract 1300, the planned values will be reestablished. Contract 1252 is using the original approved Baseline Schedule to calculate Earned Value.

As of the end of September, the following information is reported:

**September Earned Value Analysis:**

* Overall Budgeted Cost: $1,578,300,000
* Planned Value: $ 490,267,966
* Earned Value: $ 479,111,454
* Actual Cost: $ 445,886,809
* Schedule Performance Index (SPI): 0.98
* Cost Performance Index (CPI): 1.07
* Percent Complete: 31.75

**F. PROJECT RISK, RISK MANAGEMENT AND RISK MITIGATION**

The monthly Risk Mitigation Meeting was held on November 12, 2013. The PMOC attended the meeting.

**Cost Contingency.**

On June 17, 2013, Cost Contingency Hold Point 2, Commence UMS/CTS was obtained with the NTP for Contract 1300. This reduced the recommended cost contingency from $160 to $140 million. The current Total Project Contingency is $69.48 million, a reduction of $3.31 million over the previous month. This is a $70.52 million unfavorable balance against the current FTA recommended minimum contingency level of $140 million.

**PMOC Concern: The award of Contract 1300 reduced project cost contingency by approximately $120 million, to a level significantly below the FTA recommendation.**

On April 26, 2011, SFMTA obtained a commitment from the San Francisco County Transportation Authority for $150 million of (State) Regional Improvement Program funds to the project to be accessed in the event project costs increase above $1.5783 billion.

The CSP did not provide a cost contingency drawdown graph for this month.

**Schedule Contingency.**

Schedule Contingency Management criteria were developed from the FTA Risk Assessment prior to entry into FD. Minimum schedule contingency levels at various project milestones or “Hold Points” were agreed to with SFMTA at Risk Workshop #4, held on February 24 through 27, 2009.

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. Float was reduced due to delays in awarding Contract 1300.

In October 2012, the PMOC requested justification for the reduction in schedule contingency and/or a recovery schedule from the CSP.

On June 17, 2013, Schedule Contingency Hold Point 2, Commence UMS/CTS was obtained with the NTP for Contract 1300. This reduced the FTA recommended schedule contingency from ten to eight months. The current schedule reflects 4.8 months of buffer float.

In October 2013, the CSP submitted the Draft Contingency Management – Schedule Update, which proposed changes to the schedule contingency minimum levels based on a recent risk assessment performed by the Central Subway team. The team used risk-based software, which employs the Monte Carlo method, to perform a probability analysis on the Project’s Summary Schedule.

At this time, the PMOC cannot recommend that FTA accept any modification to schedule contingency minimum levels. The PMOC recommends that the CSP incorporate the Contract 1300 Baseline Schedule as soon as it is approved. At that time, the PMOC recommends that the CSP incorporate the remaining high level schedule risks on the Project Risk Register into a new risk assessment. **PMOC** **Concern: In accordance with FTA guidelines, a minimum of eight months of schedule contingency is recommended at this phase of the project.**

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** (December 2013 to February 2014)

SFMTA Management:

* Prepare Monthly Progress Reports.
* Hire REs, Inspectors, and support staff for Contract 1300 construction.
* Update SSMP.
* Complete approved MPS.

SFMTA Construction Activities:

* 1252 Tunnel. Both TBMs should continue to mine. The construction of the newly located North Beach retrieval shaft and the Green Street shaft has begun. Tunnel liner segments will continue to be shipped and production will continue.
* 1300 Stations Trackwork and Systems. Process early submittals and prepare for the beginning stages of construction. Prepare and start station box construction at all three stations. Potholing of existing utilities will continue.
* The San Francisco Holiday Moratorium between Thanksgiving and New Year’s Day will halt most street level construction activities.

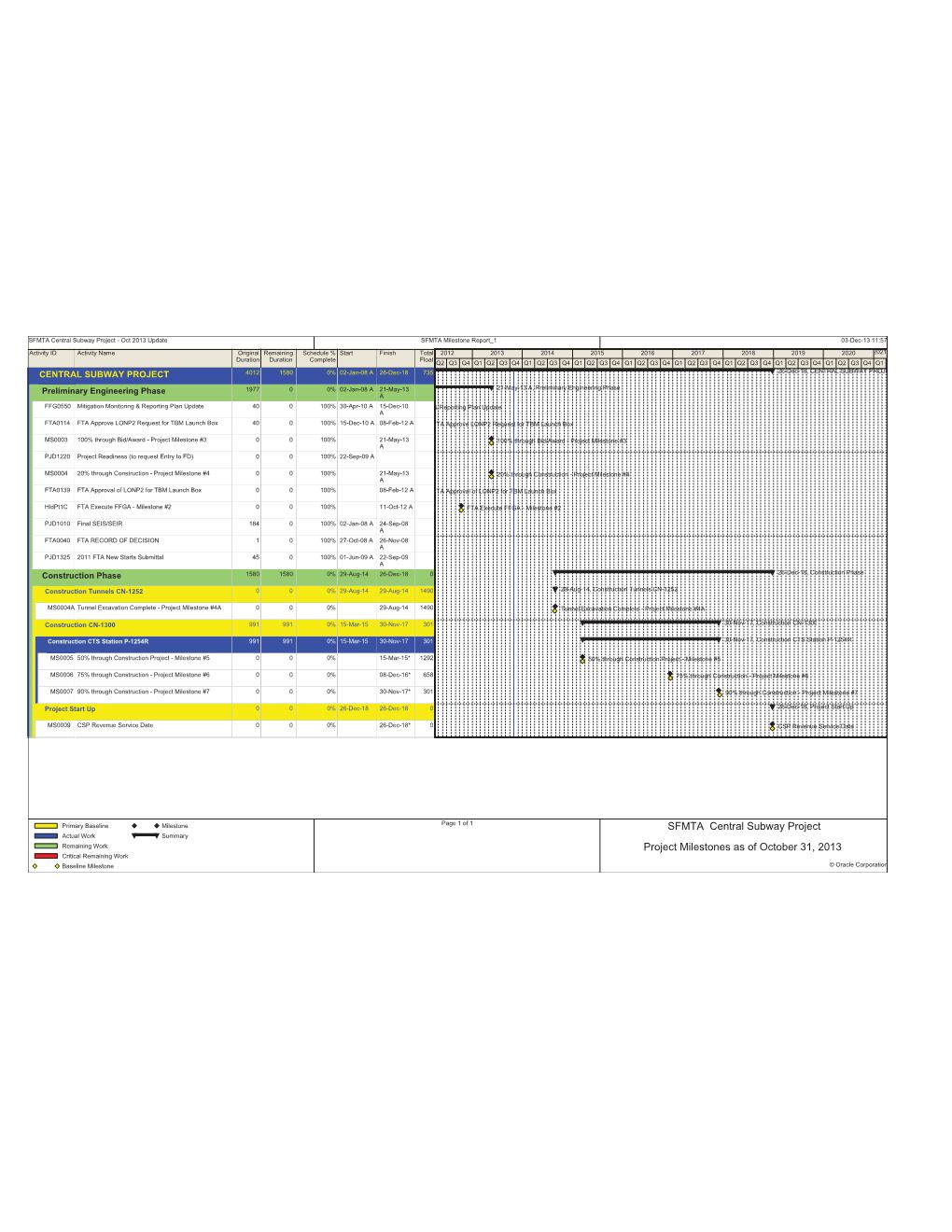
SFMTA Real Estate Activities:

* 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 Progress (Thursday)
* Weekly Contract 1300 Construction Progress (Tuesday)
* Real Estate every other week (Tuesday)
* Monthly Risk (second Tuesday of the month)
* Monthly SSCRC (third Thursday of the month)
* Quarterly FLSC (third Thursday of the month)
* The next PMOC End of the Month Meeting with Grantee is December 3, 2013.
* IRP for BART undercrossing of northbound tunnel TBM late December or early January.
* FTA/QPRM scheduled for January 29, 2014.

**APPENDIX B. CSP SCHEDULE UPDATE**





**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 SCC 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 five percent of project cost at Entry into FD and three percent 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 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. |
| 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. |
| 14 | 06-30-13 | Const. | Management | Change Order Process | Perform an audit of the Project’s procedures related to Change Orders and processing. The Project should train staff and inform contractor of their obligations in the process. |

**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)** | |
| **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:** | Final claim by contractor has not been resolved. | |

|  |  |  |
| --- | --- | --- |
| **Contract No.** | **1252** | |
| **Contract Description:** | **Tunnels** | |
| **Status:** | NTP 1 was January 2012. TBM #1 and TBM #2 currently tunneling. | |
| **Cost:** | Original Contract Value | $233,584,015 |
|  | Approved Change Orders | ($2,323,819) |
|  | Current Contract Value | $230,952,335 |
|  | Expended to Date | $151,835,412 |
|  | % Expended | 65% |
|  | DBE Participation |  |
| **Schedule:** | Substantial completion expected April 2015. Total contract days are 1,150. | |
| **Issues or Concerns:** |  | |
| **Contract No.** | **1300** | |
| **Contract Description:** | **Three subway stations (YBM, UMS, and CTS) and STS.** | |
| **Status:** | Contract awarded. Four contracts have been combined into one. | |
| **Cost:** | Original Contract Value | $839,376,400 |
|  | Approved Change Orders | $90,000 |
|  | Current Contract Value | $839,466,400 |
|  | Expended to Date | $30,109,819 |
|  | % Expended | 35.8% |
|  | DBE Participation | Contract states 20%. Low bidder at 25% |
| **Schedule:** | NTP issued June 17, 2013. | |
| **Issues or Concerns:** |  | |

|  |  |  |
| --- | --- | --- |
| **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 | $ 1,697,245 |
|  | Current Contract Value | $7,492,245 |
|  | Expended to Date | $7,072,142 (est.) |
|  | % Expended | 94.39% |
|  | DBE Participation | 32.85% |
| **Schedule:** |  | |
| **Issues or Concerns:** |  | |
|  |  | |
| **Contract No.** | **CS-155-2** | |
| **Contract Description:** | **Design Package 2 for UMS, CTS, and YBM. CSDG prime** | |
| **Status:** | Designs are complete for all of the station contracts. Construction support of Contract 1300 is underway. | |
| **Cost:** | Original Contract Value | $35,059,252 (includes exercised options) |
|  | Approved Change Orders | $1,460,360 |
|  | Current Contract Value | $36,519,612 |
|  | Expended to Date | $26,450,685 |
|  | % Expended | 72.43% |
|  | DBE Participation | 43.4% |
| **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 of Contract 1300 is underway. | |
| **Cost:** | Original Contract Value | $16,822,238 |
|  | Approved Change Orders | $312,814 |
|  | Current Contract Value | $17,177,252 |
|  | Expended to Date | $11,565,749 |
|  | % Expended | 67.33% |
|  | DBE Participation | 30.2% |
| **Schedule:** |  | |
| **Issues or Concerns:** |  | |

|  |  |  |
| --- | --- | --- |
| **Contract No.** | **CS-149** | |
| **Contract Description:** | **Central Subway Partnership (Project Manager/Construction Manager).** | |
| **Status:** | On-going | |
| **Cost:** | Original Contract Value | $85,139,092 |
|  | Approved Change Orders | 0 |
|  | Current Contract Value | $85,139,092 |
|  | Expended to Date | $37,000,000 (est.) |
|  | % Expended | 43% |
|  | DBE Participation | 37.1% |
| **Schedule:** |  | |
| **Issues or Concerns:** | Expended to date figure is only an estimate. | |

|  |  |  |
| --- | --- | --- |
| **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 | $6,448,481 (est.) |
|  | % Expended | 37.68% |
|  | DBE Participation | 24.31% |
| **Schedule:** |  | |
| **Issues or Concerns:** | Expended to date figure is only an estimate. | |

**APPENDIX E. LIST OF ACRONYMS**

BART Bay Area Rapid Transit

BCE Baseline Cost Estimate

BIH Barnard Impregilo Healy JV

CMB Configuration Management Board

CMod Contract Modification

CPUC California Public Utilities Commission

CSP Central Subway Project

CTS Chinatown Station

EPC Enterprise Planning and Controls

FD Final Design

FFGA Full Funding Grant Agreement

FLSC Fire and Life Safety Committee

FTA Federal Transit Administration

IRP Independent Review Panel

LONP Letter of No Prejudice

LRV Light Rail Vehicle

MARAD U.S. Maritime Administration

MMRP Mitigation Monitoring Reporting Program

MOU Memorandum of Understanding

MPS Master Project Schedule

NTP Notice to Proceed

OE Office Engineer

OP Oversight Procedure

PE Preliminary Engineering

PMOC Project Management Oversight Contractor

PMP Project Management Plan

QA/QC Quality Assurance/Quality Control

QPRM Quarterly Progress Review Meeting

RAMP Real Estate Acquisition Management Plan

RCMP Risk and Contingency Management Plan

RE Resident Engineer

RSD Revenue Service Date

SBE Small Business Enterprise

SCC Standard Cost Category

SFFD San Francisco Fire Department

SFMTA San Francisco Municipal Transportation Agency

SFPUC San Francisco Public Utilities Commission

SSCRC Safety and Security Certification Review 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 Yerba Buena/Moscone Station