

REVIEW OF CONTINGENCY MANAGEMENT – SCHEDULE 2012 UPDATE

Central Subway Project

San Francisco Municipal Transportation Agency (SFMTA)
San Francisco, California

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EXECUTIVE SUMMARY

The San Francisco Municipal Transportation Agency (SFMTA) has produced a Critical Path Method Schedule that consolidates the work of design, real estate, administrative, construction, and other elements into a work plan that indicates a Revenue Service Date (RSD) for the Central Subway Project (CSP) of December 26, 2018. That Schedule also includes strategically placed quantities of "reserve time" referred to as contingency or buffer float. The intent of the buffer float is to isolate risk events and provide for a mitigating contingency so that subsequent work activities are minimally affected.

The Federal Transit Administration (FTA)'s Oversight Procedure (OP) 40 – Risk and Contingency Review states that the Project Management Oversight Contractor (PMOC) shall develop and recommend a minimum total schedule contingency to be available for the project at each major milestone. Premature use of significant amounts of schedule contingency reduces the ability of the project to withstand schedule change. These milestones and minimum schedule contingency amounts at agreed to hold points are used to protect the Project from inappropriately early draw down of contingency durations. Hold Points and minimum levels of schedule contingency were developed during four risk workshops in which FTA and SFMTA participated from June 2008 to February 2009. As an outcome of the Risk Workshops, graphs showing the minimum contingency requirements for schedule were agreed to, developed, and documented in the "Risk Assessment Report Workshop #4," March 31, 2009. Additionally, the hold points and minimum levels were again discussed and agreed to at the Risk Refresh Workshop in May 2011.

In September 2012, schedule contingency for the CSP dropped below the minimum agreed to level of 10 months and is currently at 4.7 months. The PMOC has been requesting justification for the reduction in schedule contingency and/or a recovery schedule from the CSP. This update for Contingency Management – Schedule, dated May 2013, was received by the PMOC on May 22, 2013, and is the subject of this report.

SFMTA has proposed changes to the schedule contingency based on elements of the 2011 Risk Refresh schedule review.

The Risk and Contingency Management Plan (RCMP), Revision 3, states, "The Program is currently implementing strategies to return the subject float to agreed upon levels while initiating efforts to develop and implement a recovery plan should current strategies prove ineffective."

The information provided in the Contingency Management – Schedule 2012 Update does not state any strategies to return float and does not provide a recovery plan, but instead attempts to justify the reduction in minimum float levels.

The PMOC cannot recommend that FTA accept any modification to schedule contingency minimum levels based on the documentation provided in the Contingency Management – Schedule 2012 Update. The PMOC recommends that the CSP provide justification in the form of schedule modeling that incorporates new and current risks.

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I. INTRODUCTION

A. PROJECT DESCRIPTION

The CSP, Phase 2 of the Third Street Light Rail Project, consists of the design and construction of a 1.7-mile extension of Phase 1 of the Third Street light rail line from the Caltrain regional rail terminus at Fourth and King Streets to Chinatown. Three subway stations [Yerba Buena/Moscone Station (YBM/MOS), Union Square Market Street Station (UMS), and Chinatown Station (CTS)] and one surface station in the South of Market area will be constructed. With the addition of the CSP, the Third Street Light Rail Line will stretch 6.8 miles from the southeastern San Francisco neighborhoods of Visitation Valley and the Bayview to the dense urban core of the City, including the convention and museum districts, the Union Square retail and theater district, and Chinatown, bordered by the North Beach neighborhood and the Financial District.

The Project will operate as a surface double-track light rail in a primarily semi-exclusive median on Fourth Street between King and Bryant Streets. The rail line will transition to subway operation at a portal under the I-80 Freeway, between Bryant and Harrison Streets, and continue underground along Fourth Street in a twin-tunnel configuration, passing under the Bay Area Rapid Transit (BART)/Muni Market Street tube and continuing north under Stockton Street to the CTS.

B. RISK AND CONTINGENCY MANAGEMENT PLAN DEVELOPMENT

FTA OP 40 – Risk and Contingency Review states that the PMOC shall develop and recommend a minimum total schedule contingency to be available for the project at each major milestone. Premature use of significant amounts of schedule contingency reduces the ability of the project to withstand schedule change. These milestones and minimum schedule contingency amounts at agreed to hold points are used to protect the Project from inappropriately early draw down of contingency durations. Hold Points and minimum levels of schedule contingency were developed during four risk workshops in which FTA and SFMTA participated from June 2008 to February 2009. As an outcome of the Risk Workshops, graphs showing the minimum contingency requirements for schedule were agreed to, developed, and documented in the “Risk Assessment Report Workshop #4,” March 31, 2009. A Risk Refresh was also performed in May 2011 prior to entering into a Full Funding Grant Agreement (FFGA); however, no changes were made to the original milestones, hold points, or minimum contingency levels.

In September 2012, schedule contingency dropped below the minimum agreed to level of 10 months and is currently at 4.7 months. This update for Contingency Management, dated May 2013, was received by the PMOC on May 22, 2013 and is the Project’s document to justify a reduction in minimum schedule contingency for the CSP.

SFMTA has proposed changes to the schedule contingency based on elements of the 2011 Risk Refresh schedule review.

II. REFERENCES

FTA Circular 5010.1D.

FTA Circular 5200.1A.

Grant Master Agreement

FTA Circular 9030.1D

FTA OP-40, May 2010.

Project Execution Plan (PEP), Revision 0, July 8, 2009

SFMTA Proposed Secondary Mitigations, January 11, 2011

SFMTA Project Management Plan, Revision 1, March 10, 2011

SFMTA Risk and Contingency Management Plan, Revision 1, April 01, 2011

SFMTA Risk and Contingency Management Plan, Revision 2, October 05, 2011

SFMTA Contingency Management (Cost) – 2012 Update, May 2012

SFMTA Report on Construction Savings for Primary Mitigations to Union Square/Market Street, Chinatown, and Moscone Stations, January 31, 2013

SFMTA Risk and Contingency Management Plan, Revision 3, April 1, 2013

SFMTA Contingency Management – Schedule 2012 Update, May 2013

III. PMOC'S REVIEW AND ANALYSIS

The document provided to the PMOC was titled "Contingency Management – Schedule 2012 Update" but was dated May 2013.

The CSP Draft Contingency Management – Schedule 2012 Update received by the PMOC on May 22, 2013, contains no justification to support revision of the minimum schedule contingency levels.

The CSP has not analyzed the high level risks (36) identified in the Schedule Risk Refresh model to justify reduction of those risk impacts on the schedule.

The CSP has not identified or evaluated/analyzed the impact of new schedule risks since the 2011 Risk Refresh.

Table 1 on page 4 of the Contingency Management – Schedule 2012 Update shows Hold Point 4 as "CTS/UMS Bid, October 2012." The bids for these two stations were not opened until May 2013.

The Contingency Management – Schedule 2012 Update, page 6, states, "The bid evaluation allows the bidder to insert number of bid days, not to exceed 1700 days, as part of the competitive bidding process." The Program has added this component as an additional mitigation measure to preserve schedule contingency. **Note: There was potential to gain back some schedule contingency; however, none of the three bidders for Contract 1300 bid on the option to reduce the schedule duration.** Follow-up discussion identified that the bidders believe they will require the full number of days identified in the RFP.

The RCMP states in Section 9, "The CSP will develop a Secondary Mitigation Plan that provides the ability (where feasible) to slow the use of contingency reserve." At the present time, opportunities for Secondary Mitigation savings are no longer available. The Project may consider opening up discussions for Value Engineering savings with the contractor of Contract 1300.

The RCMP Section 8.4 states, "Schedule contingency dropped below the minimum required in September 2012... The Program is currently implementing strategies to return the subject float to agreed upon levels while initiating efforts to develop and implement a recovery plan should current strategies prove ineffective." **Information provided in the Contingency Management – Schedule 2012 Update does not state any strategies to return float, but attempts to justify the reduction in minimum float levels.**

The Contingency Management – Schedule 2012 Update, page 6, states, "The Program will develop a revised histogram to validate the proposed changes to ensure that the new risk profile falls within acceptable limits of time and cost. The Program will analyze activity durations and determine the optimistic, pessimistic, and realistic durations that may be expected, based on real discrete risks surviving on the Risk Register to form a comprehensive look at the risk profile and

schedule performance.” The revised histogram was not provided in the Contingency Management – Schedule 2012 Update.

SCHEDULE CONTINGENCY

Hold Points and minimum levels of schedule contingency were developed during four risk workshops in which FTA and SFMTA participated from June 2008 to February 2009. As an outcome of the Risk Workshops, graphs showing the minimum contingency requirements for schedule were agreed to, developed, and documented in the “Risk Assessment Report Workshop #4,” March 31, 2009.

Table 1: CSP Schedule Hold Points, 02/27/2009

	AT HOLD POINTS	QTR	Minimum Contingency Levels
1A	Hold Point 1a - Tunnels 100% designed May 2010	2Q10	14
1B	Hold Point 1b - UMS 100% Designed June 2011	2Q11	13
1C	Hold Point 1c - FFGA / Tunnels Oct 2011	4Q11	12
2	Hold Point 2 - CTS / UMS commence October 2012	4Q12	10
3	Hold Point 3 - Demobilize Tunnels October 2013	4Q13	8
4	Hold Point 4 - Stations to platform levels Oct 2015 (UMS)	4Q15	6
5	Hold Point 5 - Complete CTS / Tunnels systems inst June 2017	2Q17	4
ROD	PMOC / FTA ROD	2Q19	
TOTAL CONTINGENCY 19 Months			

Section 8.4 of the CSP RCMP, Revision 3 states, “In the event that any of the schedule contingency requirement are not met, CSP shall immediately implement appropriate strategies to bring subject float to the agreed upon levels prior to the next FTA Milestone Review Point. Should the implementation of these strategies fail, CSP will revise its schedule to reflect the changes to the critical path and provide an impact assessment within 90 calendar days. Should this impact assessment indicate that the project schedule contingency will fall below the “Minimum” Float, CSP shall initiate efforts to develop and implement a recovery plan in conformance with the FFGA requirements”.

IV. CONCLUSIONS

SFMTA has produced a Critical Path Method Schedule that consolidates the work of design, real estate, administrative, construction, and other elements into a work plan that indicates an RSD for the CSP of December 26, 2018. That Schedule also includes strategically placed quantities of “reserve time” referred to as contingency or buffer float. The intent of the buffer float is to isolate risk events and provide for a mitigating contingency so that subsequent work activities are minimally affected.

FTA OP 40 – Risk and Contingency Review states that the PMOC shall develop and recommend a minimum total schedule contingency to be available for the project at each major milestone. Premature use of significant amounts of schedule contingency reduces the ability of the project to withstand schedule change. These milestones and minimum schedule contingency amounts at agreed to hold points are used to protect the Project from inappropriately early draw down of contingency durations. Hold Points and minimum levels of schedule contingency were developed during four risk workshops in which FTA and SFMTA participated from June 2008 to February 2009. As an outcome of the Risk Workshops, graphs showing the minimum contingency requirements for schedule were agreed to, developed, and documented in the “Risk Assessment Report Workshop #4,” March 31, 2009. Additionally, the hold points and minimum levels were again discussed and agreed to at the Risk Refresh Workshop in May 2011.

In September 2012, schedule contingency for the CSP dropped below the minimum agreed to level of 10 months and is currently at 4.7 months. The CSP provided documentation to FTA/the PMOC in May 2013 suggesting justification for the reduction in schedule contingency.

The PMOC cannot recommend that FTA accept any modification to schedule contingency minimum levels based on the documentation provided in the Contingency Management – Schedule 2012 Update. The PMOC recommends that the CSP provide additional justification in the form of schedule modeling that incorporates new and current risks.

FINDINGS AND RECOMMENDATIONS

Following are specific findings and recommendations from the PMOC’s review:

1. The document provided to the PMOC was titled “Contingency Management – Schedule 2012 Update” but was dated May 2013.
2. In September 2012, schedule contingency dropped below the minimum agreed to level of 10 months and is currently at 4.7 months.

SFMTA should explain what strategies are being implemented to return schedule float to previously agreed upon levels.

3. The CSP Draft Contingency Management – Schedule 2012 Update received by the PMOC on May 22, 2013, contains no justification to support revision of the minimum schedule contingency levels.

4. The CSP has not analyzed the high level risks (36) identified in the Schedule Risk Refresh model to justify reduction of those risk impacts on the schedule.
5. The CSP has not identified or evaluated/analyzed the impact of new schedule risks since the 2011 Risk Refresh.
6. The RCMP states in Section 9, "The CSP will develop a Secondary Mitigation Plan that provides the ability (where feasible) to slow the use of contingency reserve." At the present time, opportunities for Secondary Mitigation savings are no longer available. The Project may consider opening up discussions for Value Engineering savings with the contractor of Contract 1300.
7. The Contingency Management – Schedule 2012 Update, page 6, states, "The Program will develop a revised histogram to validate the proposed changes to ensure that the new risk profile falls within acceptable limits of time and cost. The Program will analyze activity durations and determine the optimistic, pessimistic, and realistic durations that may be expected, based on real discrete risks surviving on the Risk Register to form a comprehensive look at the risk profile and schedule performance." **A revised histogram was not provided in the Contingency Management – Schedule 2012 Update.**

APPENDIX A:

SFMTA CONTINGENCY MANAGEMENT – SCHEDULE 2012 UPDATE, MAY 2013

Contingency
Management - Sched

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APPENDIX B: LIST OF ACRONYMS

CSP	Central Subway Project
CTS	Chinatown Station
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
MUNI	Municipal Railway Department of the Municipal Transportation Agency of the City & County of San Francisco
OP	Oversight Procedure
PEP	Project Execution Plan
PMOC	Project Management Oversight Contractor
RCMP	Risk and Contingency Management Plan
RSD	Revenue Service Date
SFMTA	San Francisco Municipal Transportation Agency
UMS	Union Square Market Street Station
YBM/MOS	Yerba Buena/Moscone Station