

Risk Mitigation Meeting Minutes #76

DATE: January 5, 2016

MEETING DATE: **November 05, 2015**

LOCATION: 821 Howard Street, 2nd Floor – Main Conference Room

TIME: 2:00pm

ATTENDEES: John Funghi, Albert Hoe, Eric Stassevitch, Beverly Ward, John Lackey

COPIES TO: Attendees: Roger Nguyen, Alex Clifford, Mark Latch, Bill Byrne
Jane Wang, Sanford Pong, Luis Zurinaga, Jeffrey Davis
File: M544.1.5.0820

REFERENCE: Program/Construction Management

SUBJECT: **Risk Management – Risk Mitigation Meeting
Risk Mitigation Report No. 76**

RECORD OF MEETING

ITEM #	DISCUSSION	ACTION BY DUE DATE
1 -	Report on Red Risk and – (Risk rating ≥ 6)	
	<p>Risk 222: ARGUS Monitoring Software - Sharing Instrumentation for CN1252 and CN1300 <u>Discussion:</u> CN1252 submittal documentation related to the monitoring instrumentation work was completed. Confirmation that all supporting video documentation was transferred to TPC’s FTP site is pending. This item will remain open until confirmation is received. Risk Rating 6</p> <p>Risk 226: 4th and King Street - Potential time for planned work shutdown - Contractor not able to perform the work in the manner prescribed <u>Discussion:</u> A final coordination meeting took place today November 5, for the planned second phase shutdown at 4th and King Streets, which is scheduled to take place beginning November 06 through Saturday, November 14, to coincide with the Veterans Day holiday. Risk Rating 9</p> <p>Risk 232: Behind Schedule - Unable to Recover from Delay to 1300 Contract <u>Discussion:</u> The Contractor submitted a schedule update that includes extended shifts. Mitigation measures in the tunnel include a planned pour of two at once of the invert slab placement. There are 5 completed already. Risk Rating 12</p> <p>Risk 233: Acceptance of Shotcrete Substitution - leads to final product being inferior in performance <u>Discussion:</u> SFMTA has yet to receive the complete submittal from the Contractor SFMTA is concern with the Contractor submitting piecemeal work which could give the</p>	

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	<p>false impression of acceptance as a whole. SFMTA is rejecting the concept of this type of submission. Risk Rating 9</p> <p>Risk 234: Sequential Excavation Method at CTS - Contractor's propose method will induce subsidence <u>Discussion:</u> The Sequential Excavation Method being performed by the Contractor is the approved prescribed sequence. The Contractor has yet to provide the wet stamp drawings for review. Risk Rating 7</p> <p>Risk 238: Quality Program is ineffective in processing the nonconformance items causing schedule impacts <u>Discussion:</u> TPC QC, with support from TPC's Project Executive, is no longer allowing impediment of the generation of CNCRs. The final review process still needs to be work on, due to not having all of the info required. Risk Rating 6</p> <p>Risk 240: Unresolved Assignment of Schedule Delay Responsibility (may lead to increase cost for the Program) <u>Discussion:</u> SFMTA continues to work with TPC towards a resolution of the delay issues. A CSP Schedule Workshop will take place between SFMTA, FTA and the PMOC on November 18 and 19, 2015 to discuss the schedule delays and additional ways to mitigate the issue. Risk Rating 7</p>	
2 -	Report on Remaining Requirement Risks (Risk rating ≤ 6)	
	<p>Risk 79: Delay in obtaining tunnel easements (3 #) (goes to condemnation) -Costs of ROW may cost more than expected <u>Discussion:</u> This risk has been mitigated. By unanimous decision, the Committee has voted to retire this risk. For a complete history of the monthly status of the risk, refer to the Risk Mitigation Status sheet #79. This risk will be retired Risk Rating 0</p> <p>Risk 104: CPUC approval at Grade Crossing for G0164d takes longer to negotiate / obtain than schedule allows. <u>Discussion:</u> CSP extension for CPUC at-grade crossing will expire on 3/11/16, the request for another extension will need to be submitted by 2/11/16. The Committee suggested the risk item as identified had been mitigated and could be closed. The subsequent outstanding issues yet to be resolved between SFMTA and CPUC regarding the standardization of the light rail signal should be elevated to the appropriate SFMTA Division Manager. Additionally a meeting should be setup with CPUC to discuss the outstanding issue, to see if they can be persuaded in the direction of SFMTA's system design using the red "X" (crossbuck) along 4th Street. Risk Rating 5</p>	
3-	Active Construction Risk	
	<p>Risk 72: Interface new Signaling and Train Control system to existing at Fourth and King <u>Discussion:</u> During the second phase shutdown at 4th and King Streets scheduled on Monday, November 9th, the Contractor will be putting in the infrastructure so that interim signaling solution will be operational. Future work will involve cutover work to cut in the certifiable permanent system. Risk Rating 5</p>	

ITEM #	DISCUSSION	ACTION BY DUE DATE
	<p>Risk 204: Relocation of AT&T Vault and other utilities delays Work south of Bryant <u>Discussion:</u> AT&T is committed to perform the cutover work by November 19, 2015. Risk Rating 3</p> <p>Risk 205: Prolong period of CMod's creates additional cost/causes bad blood between Resident Engineer and Contractor <u>Discussion:</u> Weekly change order meeting are ongoing. Progress continues to be slow. One of the issues is the physical sign off the change order. Ten change orders have been processed for contract 1300 modifications. This number has not change from last month. Risk Rating 3</p>	
4	Reassessment of Low Rated Risk Active	
	<p>The Committee performed a quarterly review of risk items which have a previously been assessed and categorized as being a low risk. The purpose of this review is to evaluate the current disposition of the risk to determine if the risk rating continues to be accurate or requires reassessment. Listed below are risk items which received a risk ratings reclassification after the review.</p> <p>Risk 36: Damage to buildings or utilities as a result of heave from jet grouting. <u>Discussion:</u> This risk occurrence did take place in the Macy's basement. In partial, the jet grouting issues is due to corrupt basement. Reassessment of the risk probability is significant warranting the risk rating to be increased. The new rating is now a 5. Risk Rating 5</p> <p>Risk U: Proximity at junction of head house boundary wall and school playground may result in relocation of school yard during wall construction <u>Discussion:</u> The wall was relocated by the school as a result of the school performing a seismic program. By unanimous decision, the Committee has voted to retire this risk. For a complete history of the monthly status of the risk, refer to the Risk Mitigation Status sheet #U. This risk will be retired Risk Rating 0</p> <p>Risk 66: Archeological/Cultural findings during construction increases schedule and/or cost.(Moscone) AROUND 10% <u>Discussion:</u> Archeological activities have been completed in this area. Assessment by the Risk Committee voted unanimously to retire this risk. For a complete history of the monthly status of the risk, refer to the Risk Mitigation Status sheet 66. This risk will be retired Risk Rating 0</p>	
	New Risk:	
	<p>Risk 243: Contractor becomes complacent in third party insurance claims - could increase cost to the project <u>Discussion:</u> Risk rating TBD</p>	

ACTION ITEMS –

ITEM #	MTG DATE	DESCRIPTION	BIC	DUE DATE	STATUS
3	05/07/15	Risk 72 – 4 th & King - Develop a test plan checklist for recertifying	S. Pong	12/10/15	Open

ITEM #	DISCUSSION	ACTION BY DUE DATE
	Risk 204: Relocation of AT&T Vault and other utilities delays Work south of Bryant <u>Discussion:</u> The RE is working with PG&E to obtain a more reliable schedule. The work currently being performed is pre work and not the fiber connection. PG&E has made the commitment to be done by the end of the year. Risk Rating 3	
	New Risk:	
	No new risk was added to the Risk Register this month.	

ACTION ITEMS –

ITEM #	MTG DATE	DESCRIPTION	BIC	DUE DATE	STATUS
3	05/07/15	Risk 72 – 4th & King - Develop a test plan checklist for recertifying	S. Pong	01/05/16	Open

Meeting adjourned at 4:00pm

These meeting minutes have been prepared by B. Ward and reviewed by A Hoe, and are the preparer's interpretation of discussions that took place. If the reader's interpretation differs, please contact the author in writing within four (4) days of receipt of these minutes.

Signed:  [initials of preparer & reviewer] Date: 1/15/2016 [Date review completed].

Meeting Agenda

Project No. M544.1, Contract No. CS-149
Program/Construction Management
Risk Mitigation Management Meeting No. 76
November 5, 2015

2:00pm– 4:00pm

Central Subway Project Office
 821 Howard St. 2nd Floor
 Main Conference Room

Attendees:

William Byrne		Mark Latch		Beverly Ward	
John Funghi		Roger Nguyen		Luis Zurinaga	
Albert Hoe		Eric Stassevitch			

1. Report on Red Risks (Risk Rating 6 and above)

- Construction Risks (**222**, 226, **232**, 233, 234, 238, 240)

2. Remaining Requirement and Design Risks

- Requirement Risks (79, **104**)

3. Active Risks

- Construction Risks (72, 204, **205**)

4. Reassessment of Low Rated Green Risk

Note: **Bolded** numerals indicate that risk is recommended to be retired.

Meeting Attendance Sheet

Project No. M544.1, Contract No. CS-149

Program/Construction Management

Risk Management Meeting No. 76

November 5, 2015


2:00 p.m. – 4:00 p.m.

Central Subway Project Office

821 Howard Street, 2nd Floor

Main Conference Room

Deliver Meeting Attendance Sheet with original signatures/initials to Document Control.

NAME	AFFILIATION	PHONE	E-MAIL (for minutes)	INITIALS
Bill Byrne	DEA/PMOC	720-225-4669	BByrne@deainc.com	
Jeffrey Davis	FTA	415-744-2594	Jeffrey.s.davis@dot.gov	
* John Funghi	SFMTA	415-701-4299	John.funghi@sfmta.com	
* Albert Hoe	SFMTA	415-701-4289	Albert.hoe@sfmta.com	
* John Lackey	DEA/PMOC	503-499-0596	jal@deainc.com	
Mark Latch	CSP	415-701-5294	Mark.latch@sfmta.com	
Roger Nguyen	SFMTA	415-701-4312	Roger.Nguyen@sfmta.com	
* Eric Stassevitch	CSP	415-660-5407	Eric.stassevitch@sfmta.com	
Beverly Ward	CSP	415-701-5291	Beverly.ward@sfmta.com	
Lyn Wylder	DEA/PMOC	503-499-0273	cdw@deainc.com	
Luis Zurinaga	SFCTA	415-716-6956	luis@sfcta.org	
<p><i>During the meeting the sign in sheet was not available, but J. Funghi, A. Hoe, J. Lackey and E. Stassevitch were in attendance.</i></p>				

Risk Register

	A	H	I	J	K	L	M	N	O	P	Q	R	S
1	PROJECT RISK REGISTER					Low (1)	Medium (2)	High (3)	Very High (4)	Significant (5)	Legend		
2	Central Subway Project San Francisco				Probability	< 10%	<> 10-50%	> 50%	<> 75% & 90%	>90%	<3 Low	RISK RATING = PROBABILITY X (COST IMPACT + SCHEDULE IMPACT)	
3	REV : 49				Cost Impact	< \$250K	<> \$250K - \$1M	<> \$1M - \$3M	<> \$3M - \$10M	>\$10M	3-9 Medium	2	
4	DATE ISSUED: 11/05/15				Schedule Impact	< 1 Month	<> 1 - 3 Months	<> 3-6 Months	<> 6 - 12 Months	> 12 Months	>10 High	SCORE = PROBABILITY X (COST IMPACT + SCHEDULE IMPACT)	
5	Final Risk ID	Risk Description	Mitigation Description	Risk Category	Probability %	Cost Impact	Schedule Impact	Calc Impact	Calc %	Risk Rating	Score	Status	Must Complete by Date
12	Underground Tunnel												
45	115	Jet grouted station end walls are installed by Tunnel contractor. Station Contractor assumes risk of possibly leakage problems due to insufficiently qualify of end walls.	1. In the 1252 contract, have tunnel contractor set aside a pre-determined amount of money in escrow that can be used to repair any leaks encountered by the station contractors after the in the jet grout end walls are excavated. 2. Alternatively, place an allowance in the station contracts for end wall leakage repair.	C	3	1	1	1	50%	3			5/26/15 UMS1295
52	Track Embedded												
55	Track: Special												
58	MOS Station												
60	21	Incomplete cutoff of groundwater at MOS	1. Require additional grouting to limit leakage to permissible level. 2. Include probable grouting work in cost & schedule estimates.	C	1	1	-	1	10%	1	1	Mitigation measure to be made part of the contract documents	4/28/15 MOS1150
63	22	Public complaints result in unanticipated restrictions on construction at UMS	1. Public outreach. 2. Maintain regular and open communications so Public knows construction plans and progress at all times. 3. Require Contractor to assist Public Outreach efforts, maintain access to businesses and assist with deliveries and pick-ups, control noise and vibration, continuously cleanup site, and provide pedestrian and vehicle traffic and protection plans, informational signage, ADA ramps and minimum sidewalk widths. 4. Work with MOED to increase cleanup of the area and assist pedestrians across streets, as needed. 5. Monitor and enforce noise, vibration, ADA, traffic, and cleanup requirements. 6. Quickly process and resolve damage and accident claims from the Public. 7. Assumed this work in cost & schedule estimates.	C	1	1	-	1	10%	1	1	Implementation of mitigation measures part of Communication/Outreach plan and certain aspects to be included in the contract documents.	9/16/16 MOS1230
67	F	Underground obstructions Stations (MOS)	1. Provide adequate allowance for differing site conditions to address unknown underground obstructions. 2. Show field verified obstructions discovered during previous contracts on contract drawings. 3. Make as-built drawings of structures adjacent to the work available to the contractor as reference drawings.	C	4	2	2	2	80%	8	16	Mitigation measures have been implemented.	4/28/15 MOS1150

Risk Register

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1	PROJECT RISK REGISTER					Low (1)	Medium (2)	High (3)	Very High (4)	Significant (5)	Legend		
2	Central Subway Project San Francisco				Probability	< 10%	<> 10-50%	> 50%	<> 75% & 90%	>90%	<3 Low	RISK RATING = PROBABILITY X (COST IMPACT + SCHEDULE IMPACT)	
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5	Final Risk ID	Risk Description	Mitigation Description	Risk Category	Probability %	Cost Impact	Schedule Impact	Calc Impact	Calc %	Risk Rating	Score	Status	Must Complete by Date
98	F	Underground obstructions Stations (UMS)	1. Provide adequate allowance for differing site conditions to address unknown underground obstructions. 2. Show field verified obstructions discovered during previous contracts on contract drawings. 3. Make as-built drawings of structures adjacent to the work available to the contractor as reference drawings.	C	4	2	2	2	80%	8	16	Mitigation measures have been implemented.	8/12/15 UMS 1320
99	28	Incomplete cutoff of groundwater at UMS	1. If needed, perform grouting to mitigate the intrusion of groundwater. 2. Include in cost & schedule estimates.	C	1	2	1	2	10%	2	3	Mitigation measures in the form of consolidation grouting to be included in contract documents	8/12/15 UMS1320
107	33	Damage to utilities at UMS causes delay to construction and/or consequential cost. (very close to walls adjacent to relocated utility trenches)	1. Intensive utility coordination and investigation. 2. Relocate utilities out of the way of construction wherever possible. 3. Show utilities on reference plans. 4. Have utility contact information and procedure on plans. 5. Have contingency repair/restoration plans. 6. Include probable impacts to schedule & cost in estimates.	C	2	1	1	1	35%	2	4	Although mitigation measure have been fully implemented, Increased probability due to proximity of new pile design to existing relocated utilities.	7/19/16 UMS1410
108	34	Loss of business results in unanticipated restrictions on construction at UMS	1. Public outreach. 2. Work closely with Merchant's Association. 3. Maintain regular and open communications so Merchants know construction plans and progress at all times. 4. Advertise that Stockton Street Merchants are Open for Business. 5. Require Contractor to coordinate with merchants, maintain access to businesses and assist with deliveries and pick-ups, continuously cleanup site, and provide pedestrian and vehicle traffic and protection plans, informational signage, and minimum sidewalk widths. 6. Require barriers to protect pedestrians and shield them from noise and dirt from construction. 7. Work with the Union Square BID or MOED to increase cleanup of the area and assist pedestrians across streets. 8. Include this work in cost & schedule estimates.	C	2	3	2	3	35%	5	10	Mitigation measures to be implemented and to the extent possible requirements will be written into contract documents to minimize disruptions to businesses.	9/7/16 UMS1430
111	35	Ground support structure causes groundwater table to rise which results in leakage into adjacent structures.(new structure might create a dam that results into leaks into new and existing structures)	1. Perform detailed hydrogeologic modeling and analysis. 2. Monitor groundwater table at multiple locations and passive measures as necessary to mitigate. 3. Reference the Tech memo in contract documents. 4. Include probable costs in estimate.	C	1	2	-	1	10%	1	2	Mitigation measures incorporated in design based on updated Hydrogeologic analysis and report	9/7/16 UMS1430
112	36	Damage to buildings or utilities as a result of heave from jet grouting at UMS.	Utilize tangent piles combined with surface jet grouting.	C	5	1	1	1	90%	5	10	Mitigation measures implemented in contract documents to reduce risk	4/14/15 UMS1310

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5	Final Risk ID	Risk Description	Mitigation Description	Risk Category	Probability %	Cost Impact	Schedule Impact	Calc Impact	Calc %	Risk Rating	Score	Status	Must Complete by Date
113	37	Damage to adjacent buildings at UMS due to surface construction activities.	1. Require protective barriers. 2. Have an emergency and rapid response customer focused task force to fix damaged facilities. 3. Quickly repair and reimburse resulting costs. 4. Include probable cost in estimate.	C	1	2	-	1	10%	1	2	Mitigation measures implemented in contract documents to reduce risk	9/7/16 UMS1430
160	Q	As-built drawings and UMS construction drawings do not contain enough information to produce shop drawings without significant surveying effort delaying construction north entrance.	1. Investigate if electronic files of design can be given to the contractor. 2. Clearly define shop drawing criteria in the technical specifications. 3. Make as-built drawings available as reference drawings to the contractor	C	3	1	1	1	50%	3	6	Specifications require contractor to survey USG in order to develop shop drawings for structural steel.	3/24/12 UMS1280
161	CTS Station												
163	46	Public complaints result in unanticipated restrictions on construction at CTS. (schedule and estimate for underground work assumes 6 day work week and 2 shifts per day)	1. Public outreach. 2. Maintain regular and open communications so Public knows construction plans and progress at all times. 3. Require Contractor to assist Public Outreach efforts, maintain access to businesses and assist with deliveries and pick-ups, control noise and vibration, continuously cleanup site, and provide pedestrian and vehicle traffic and protection plans, informational signage, ADA ramps and minimum sidewalk widths. 4. Require barriers to protect pedestrians and shield them from noise and dirt from construction. 5. Work with MOED to increase cleanup of the area and assist pedestrians across streets, as needed. 6. Monitor and enforce noise, vibration, ADA, traffic, and cleanup requirements. 7. Quickly process and resolve damage and accident claims from the Public. 8. Include this work in cost & schedule estimates.	C	2	5	1	3	35%	6	12	Implementation of mitigation measures part of Communication/Outreach plan and certain aspects to be included in the contract documents.	10/9/17 CTS1500

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167	48	Incomplete drawdown of groundwater. (inside of box and inside of caverns)	1. Require additional grouting to limit leakage to permissible level. 2. Include probable grouting work in cost & schedule estimates. 3. Include allowance for dewatering within cavern during construction.	C	2	2	1	2	35%	3	6	Mitigation measures have been included in contract documents	5/1/16 CTS1140
175	52	Unacceptable settlement and impact on major utilities at CTS. (OLD SEWERS AND OTHERS WITHIN 20FT SPACE BETWEEN TOP OF CAVERN AND STREET LEVEL)	1. Evaluate effect of potential settlement on utilities. 2. Slip-line sewer by TBM contractor. 3. Reinforce other utilities as needed, monitored during construction, and repair / replace, as needed. 4. Have contingency repair/restoration plan. 5. Utility contact information and procedure will be on plans. 6. Develop an allowance for utility repair. 7. Include probable cost in estimate. 8. Need to identify the new SFPUC contact	C	3	3	1	2	50%	6	12	Project configuration change, lowered station 25 ft. reducing the probability of this risk. Risk rating lowered.	4/22/16 N-CTS9730
183	F	Underground obstructions stations (CTS)	1. Provide adequate allowance for differing site conditions to address unknown underground obstructions. 2. Make as-built drawings of structures adjacent to the work available to the contractor as reference drawings	C	4	2	2	2	80%	8	16	Mitigation measures have been implemented.	10/9/17 CTS1500
216	General												
218	Demolition, Clearing , Earthwork												
220	Site Utilities, Utility relocations												
230	Hazmat, Contaminated Material												
234	Environmental Mitigations												

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237	67	Archeological/Cultural findings during construction increases schedule and/or cost. (UMS)...LESS THAN 1%	1. Provide on-call Archeologist. 2. Provide allowance and procedure in contract for Archeological/Cultural discoveries.	C	3	1	2	2	50%	5	9	Mitigation measures to be implemented in contract documents	8/12/15 UMS1320
238	68	Archeological/Cultural findings during construction increases schedule and/or cost. (CHINA TOWN) ...AROUND 10%	1. Provide on-call Archeologist. 2. Provide allowance and procedure in contract for Archeological/Cultural discoveries.	C	3	1	2	2	50%	5	9	Mitigation measures to be implemented in contract documents	10/9/17 CTS1500
240	Site Structure incl. sound walls												
242	Auto/bus/van access ways, roads												
247	Train Control and Signals												
249	72	Interface new Signaling and Train Control system to existing at Fourth and King	Connect new system in parallel with existing system until the new system has been tested and safety certified for operation.	C	2	2	3	3	35%	5	10	Awaiting approval of contract plans by Muni Operations.	3/4/16 STS1045
258	PR78	Delays or complication by other SFMTA projects delays CSP: radio, fare collection, C3/TMC	1. Monitor other projects' developments. 2. Develop contingency plans as needed to avoid 1256 delay of revenue service.	C	2	1	1	1	35%	2	4		7/27/12 FDS 1940
260	Traffic signals & Crossing Protn.												
262	Fare Collections Systems												
265	Purchase or lease of Real Estate												
273	Reloc. of Household or Business												
275	Vehicles												
278	Preliminary Engineering												
291	95	Contractor default during construction impacts schedule. (key sub-contractor)	Assist Bonding company in transition and to maintain schedule.	C	1	2	2	2	10%	2	4		11/17/17 STS 1500
297	99	Breakdown in relationships between SFMTA and Contractors during construction results in increased claims and delays to the overall construction schedule.	1. Executive partnering and alternate dispute resolution. 2. Provide incentives in construction contracts in addition to penalties	C	2	4	1	3	35%	5	10	Mitigation measures being implemented	7/27/12 FDS 1940
299	100	Procurement of long lead items delays work. (fans, rails and special track work, TPSS, Escalators, elevators, TBM)	1. Include schedule milestones for procurement of and substantial payment for stored long lead items in contract to encourage early procurement. 2. Monitor procurement of critical items.	C	1	2	2	2	10%	2	4	Not considered a project risk.	11/17/17 STS 1500
305	PR37	Temporary construction power and ability to provide permanent power feed - PGE ability to provide power requirements to the program together with their other commitment	1. Identify temporary power requirements for station construction. 2. Investigate the timing of the permanent feed.	C	2	1	2	2	35%	3	6	Cost for First and Redundant electrical services need to be included in Cost Estimate.	5/3/18 STS1080
306	Insurance, permits etc.												

Risk Register

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5	Final Risk ID	Risk Description	Mitigation Description	Risk Category	Probability %	Cost Impact	Schedule Impact	Calc Impact	Calc %	Risk Rating	Score	Status	Must Complete by Date
307	103	Difficulty in getting required permits.	1. Coordinate with permit officials and request permits as early as possible. 2. Obtain assistance obtaining permits from PM/CM & FD Consultants.	C	1	2	1	2	10%	2	3		12/18/12 FDS 1275
308	104	CPUC approval at Grade Crossing for G0164d takes longer to negotiate / obtain than schedule allows	1. Obtain Grade Crossing approvals at final CPUC inspection at the completion of construction. 2. Coordinate closely with CPUC until approval is received.	R	2	3	2	3	35%	5	10	CPUC Resolution (TED-253) for extension of our at grade crossing was granted.	7/27/12 FDS 1940
309	105	Electrical service delays startup and testing.	1. Submit applications for new service as early as possible. 2. Coordinate closely with PG&E to ensure timely delivery of electrical service.	C	1	2	1	2	10%	2	3	Applications for new service have been submitted to PG&E.	11/17/17 STS 1500
310	106	Risk of Labor dispute delaying the work.	Enforce designated gate for employees of the contract in dispute so that the rest of the work is not delayed.	C	2	1	1	1	35%	2	4		11/17/17 STS 1500
312	Unallocated Contingency												
317	111	Major Earthquake stops work	Include Force Majeure clause in contracts.	C	1	5	3	4	10%	4	8	Force Majeure clause included in contract.	12/30/20 MS 0010
318	112	Major safety event halts work	1. Require contractor Safety plan to address this risk. 2. CM inspections to ensure that safety plan and procedures are implemented.	C	1	5	3	4	10%	4	8	Health and Safety provisions included in contracts. CS Program provides full-time Safety Manager.	12/30/20 MS 0010
320													
329	204	AT&T Vault - New Sewer Work south of Bryant	1. Continue negotiations/coordination with utility owners. 2. Schedule analysis to confirm coordination	C	1	2	4	3	10%	3	6		
330	205	Prolong period of CMod's creates additional cost/causes bad blood between Resident Engineer and Contractor	1. CMod Task Force - 5 Areas of Improvement 2. Implement 3. Delegation of Authority	C	3	1	1	1	50%	3	6		
339	214	Micro Piles at UMS interfere with Tube-a-manchette installation (60' deep micropiles)	1. Provide micro-pile as-built information to contractor 2. Realign tube-a-manchettes clear of micro-piles	C	3	1	1	1	50%	3	6		
341	216	Olivet building potential construction impact	1. Reach out to building owner and keep him abreast of CS construction activities.	C	1	1	2	2	10%	2	3		
342	217	Delays or complications construction by others – SF Dept. Of Technology, 3rd party utilities	1. Early engagement and coordination for agreements and plan development to avoid construction delays.	C	2	1	1	1	35%	2	4	DTIS MOU has been signed.	
347	222	ARGUS Monitoring Software - Sharing Instrumentation for CN1252 and CN1300	1. Outline responsibilities for each contractor (1252 & 1300)	C	3	3	1	2	50%	6	12		
348	223	Contamination during dewatering (CTS)	1. Review contract requirements .	C	2	3	1	2	35%	4	8		

Risk Register

	A	H	I	J	K	L	M	N	O	P	Q	R	S
1	PROJECT RISK REGISTER					Low (1)	Medium (2)	High (3)	Very High (4)	Significant (5)	Legend		
2	Central Subway Project San Francisco				Probability	< 10%	<> 10-50%	> 50%	<> 75% & 90%	>90%	<3 Low	RISK RATING = PROBABILITY X (COST IMPACT + SCHEDULE IMPACT)	
3	REV : 49				Cost Impact	< \$250K	<> \$250K - \$1M	<> \$1M - \$3M	<> \$3M - \$10M	>\$10M	3-9 Medium	2	
4	DATE ISSUED: 11/05/15				Schedule Impact	< 1 Month	<> 1 - 3 Months	<> 3-6 Months	<> 6 - 12 Months	> 12 Months	>10 High	SCORE = PROBABILITY X (COST IMPACT + SCHEDULE IMPACT)	
5	Final Risk ID	Risk Description	Mitigation Description	Risk Category	Probability %	Cost Impact	Schedule Impact	Calc Impact	Calc %	Risk Rating	Score	Status	Must Complete by Date
349	224	CTS AWSS/Ductbank Interface - AWSS system is old and requires replacement	1. Look at alternatives to address 2. Turn off system while CSP work is being done, and then turn on later (find a bypass).	C	5	1	2	2	90%	8	15		
351	226	4th and King Street - Potential time for planned work shutdown - Contractor not able to perform the work in the manner prescribed	1. Identify schedule of potential time for planned work shutdown 2. Identify better traffic patterns 3. Pursue 4th & King option to achieve additional 3-6mos on the schedule 4. Review Giants and Warriors schedule for home games	C	3	3	3	3	50%	9	18		
352	227	LRV Training - having enough trained operators (surplus)	1. Ramp up trained operators a year ahead of time 2. Ensure testing is finished 3. Completion of work at storage track location (Bryant & King)	C	1	2	1	2	10%	2	3		
353	228	Muni union workers - barn signup (preferred runs)	1. Try to get six months advance notice for annual in addition to barn sign up.	C	1	1	1	1	10%	1	2		
354	229	Pre Revenue Testing		C									
355	230	Post Revenue Testing		C									
357	232	Behind Schedule - Unable to Recover from Delay to 1300 Contract	1. Schedule analysis of number of days behind 2.	C	4	3	3	3	80%	12	24		
358	233	Shotcrete Substitution - Final Finish Concrete Lining is Inferior	1. Meet and discuss with TPC's senior management what the issues are and the status for clarification.	C	3	3	3	3	50%	9	18		
359	234	Sequential Excavation Method at CTS - Contractor's propose method will induce subsidence	1. Designers concurrence on variation of options 2. Presented four options to the Contractor for going forward	C	2	4	3	4	35%	7	14		
360	235	Sewer work running up and down Stockton Street		C	1	3	1	2	10%	2	4		
362	237	Non-Conforming work is not identified by TPC's Quality Control Program	1. Correction Action Plan from Contractor 2. Stand down Meeting with Contractor 3. Augmentation of Management Staff 4. Higher Cross Standards 5. QA (greater surveillances) 6. Bring on additional personnel within the Smith-Emery organization	C	2	3	2	3	35%	5	10		
363	238	Quality Program is ineffective in processing the nonconformance items causing schedule impacts	1. Review the CNCR log on a biweekly basis at the joint TPC /SFMTA meeting. 2. Greater Clairity in the Log on what CNCR's are open	C	3	2	2	2	50%	6	12		
364	239	Revenue Service Delay		C				-	0%	-	-		

Risk Register

	A	H	I	J	K	L	M	N	O	P	Q	R	S
1	PROJECT RISK REGISTER					Low (1)	Medium (2)	High (3)	Very High (4)	Significant (5)	Legend		
2	Central Subway Project San Francisco				Probability	< 10%	<> 10-50%	> 50%	<> 75% & 90%	>90%	<3 Low	RISK RATING = PROBABILITY X (COST IMPACT + SCHEDULE IMPACT)	
3	REV : 49				Cost Impact	< \$250K	<> \$250K - \$1M	<> \$1M - \$3M	<> \$3M - \$10M	>\$10M	3-9 Medium	2	
4	DATE ISSUED: 11/05/15				Schedule Impact	< 1 Month	<> 1 - 3 Months	<> 3-6 Months	<> 6 - 12 Months	> 12 Months	>10 High	SCORE = PROBABILITY X (COST IMPACT + SCHEDULE IMPACT)	
5	Final Risk ID	Risk Description	Mitigation Description	Risk Category	Probability %	Cost Impact	Schedule Impact	Calc Impact	Calc %	Risk Rating	Score	Status	Must Complete by Date
365	240	Unresolved Assignment of Schedule Delay Responsibility (may lead to increase cost)	1. Ask the Contractor for TIA's 2. As built schedule (Program analysis) 3. Perform a more refined analysis	C	2	4	4	4	35%	8	16		
366	241	Potential Winter Impacts (Preparation for El Niño)	1. Allowing planning for future activities during rainy days 2. Have a large capacity pump on standby	C	3	2	2	2	50%	6	12		
367	242	Request received during the super bowl event (February 2016) - could potentially impact the schedule for 2 - 3 weeks.	1. Work closely with the Mayor's Office	C	1	2	1	2	10%	2	3		
368	243	Contractor becomes complacent in third party insurance claims - could increase cost to the project	1. Clear communication with outreach staff of the Programs position.	C				-	0%	-	-		

Risk Mitigation Status

Risk Reference: 36

Risk	Mitigation Strategy
Damage to buildings or utilities as a result of heave from jet grouting.	Tangent piles combined with surface jet grouting will be utilized.

Initial Assessment: 1, 1.5, 2

Risk Owner: S. Wilson

Current Assessment: Risk Rating 1 – Construction Risk

Status Log:

April 2012:

1. Mitigation strategy change to reflect “tangent piles” rather than “secant piles”.
2. Protection of Existing Property spec requires contractor to repair damage caused by their actions.

November 2015:

1. As part of an overall evaluation of the remaining requirement and design risk, as well as the low rated active construction risk. The committee preformed a reassessment of this risk to determine if its current Risk rating is still valid.
2. . The current construction Risk rating is now a **5**.
3. Heave potentially resulting from the jet grouting was observed in the Macy's basement

Risk Mitigation Status**Risk Reference: 66**

Risk	Mitigation Strategy
Archeological/Cultural findings during construction increases schedule and/or cost.(Moscone) AROUND 10%	<ol style="list-style-type: none"> 1. Provide on-call Archeologist 2. Provide allowance and procedure in contract for Archeological/Cultural discoveries.

Initial Assessment: 1, 1.5, 2**Current Assessment:** Risk Rating 0 – Construction Risk**Risk Owner:** M. Vilcheck**Status Log:**

February 2012 Meeting:

1. Allowance for archeological discoveries included in contract.
2. Procedure for addressing archeological discoveries is included in contract.
3. Current exposure is only to those amounts above those currently identified.
4. Recommend to reduce the risk rating.

March 2013:

1. Allowance for archaeological discoveries included in CN 1300 YBM-AL-6
2. Discuss reducing this risk rating (current schedule impact > 12months), and transferring risk ownership to CM team
3. It was discussed that the cost impact should be reduced from 2 (\$250k to \$1m) to 1, <\$250k, the risk rating revised to 3

January 2015:

1. Allowance for archaeological discoveries activated related to multiple midden layers and human remains.
2. Possible impacts/costs associated with roof slab excavation and placement.

February 2015:

1. No status change to this risk from last month's update. Roof slab has been delayed due to not being ready to pass the preparatory meeting. Several open issues were discussed to be resolved prior to the surface slab concrete placement, as noted in CN1300 Letter No. 0518.

March 2015:

1. We are within the allowance for the archaeological discoveries. A review of the budget needs to take place as a status update.

November 2015:

1. As part of an overall evaluation of the remaining requirement and design risk, as well as the low rated active construction risk. The committee preformed a reassessment of this risk to determine if its current Risk rating is still valid.
2. Construction in this area is complete.
3. Assessment by the Risk Committee voted unanimously to retire this risk.

Risk Mitigation Status
Risk Reference: 72

Risk	Mitigation Strategy
Interface new Signaling and Train Control system to existing at Fourth and King	<ol style="list-style-type: none"> 1. New system will be connected in parallel with existing system until the new system has been tested and safety certified for operation.

Initial Assessment: 2, 3, 5
Current Assessment: Risk Rating 5 – Design Risk

Risk Owner: S. Pong

Status Log:

October 2011 Meeting:

1. Recommend to retire this risk from the project.
2. Risk not retired. Systems contract drawings need approval of Muni Operations.

November 2011:

1. Functional requirements for the interface have been approved by Muni Operations.
2. 90% design drawings for Systems contract will be forwarded to Muni Operations for their review and comment.

January 2012 Meeting:

1. Concept design with SFMTA Operations recommended safety enhancements have been approved.
2. ECP for recommended safety enhancements prepared and will be submitted to CMB for approval.

February 2012:

1. CMB approved ECP for Operational & Safety Upgrades.
2. SFMTA Muni Operations signed off on ECP.
3. ECP being implemented by design team.
4. Recommend to reduce this risk rating.

September 2012 Meeting:

1. Update to be provided next meeting.
2. New plan to be advised, mitigation strategy to be revised.

October 2012 Meeting:

1. Central Subway have sent a letter to Ops including contract specifications, temporary and permanent requirements seeking concurrence
2. Ross/Carlos to provide a briefing next meeting regarding how signaling interface design has ensured functionality at the end of each weekend shutdown.

November 2012 Meeting:

1. Technical specifications now approved.

Risk Mitigation Status
Risk Reference: 72

Risk	Mitigation Strategy
Interface new Signaling and Train Control system to existing at Fourth and King	<ol style="list-style-type: none"> 1. New system will be connected in parallel with existing system until the new system has been tested and safety certified for operation.

2. A presentation is to be given at the December Risk meeting to demonstrate that the signaling design has confirmed functionality can be maintained where required, and reinstated following the 6 weekend shutdowns.

December 2012 Meeting:

1. Clarification system will not be parallel
2. System train control will not be done during track and OCS construction
3. New switch machine have similar controls as the old machine.
4. Expansion of the Site Specific Work Plan will be established for review by the Risk Committee.

July 2013 Meeting:

1. SFMTA to begin discussions with CN 1300 Contractor – Tutor Perini to develop site specific work plans and identify weekend work windows.

October 2014:

1. Review of the designs constructability needs additional evaluation.
2. A swat team to include Program Management, RE and ARE will be created to address the interface issues between trackwork, signaling and train control system.

February 2015:

1. S. Pong to setup a meeting with the Designer (HNTB) to respond to outstanding questions related to signal and train control.

March 2015:

1. The meeting with HNTB (DP3) has yet to take place. S. Pong is still working on coordination.

April 2015:

1. Meeting took place between SFMTA and HNTB (DP3). A solution is still pending. The Designer needs to demonstrate their signaling phasing design similar to the track design.

May 2015:

1. The Contractor will submit a master plan to address the question of how they plan to recertify the 4th and Street intersection for revenue service.
2. TPC needs to fill the liaisons positions of a System Integrator.

June 2015:

1. SFMTA received contractor's master workplan on 5/18 and is under review.

Risk Mitigation Status
Risk Reference: 72

Risk	Mitigation Strategy
Interface new Signaling and Train Control system to existing at Fourth and King	<ol style="list-style-type: none"> 1. New system will be connected in parallel with existing system until the new system has been tested and safety certified for operation.

July 2015:

1. Approval of the H&K track switch machine submittal has been rescinded. See SFMTA Ltr 0765, dated June 17, 2015.
2. SFMTA has offered an alternative, to use the enhanced Irwin switch for train control. PCC 060 was issued to the Contractor to obtain a price quote to procure four track switches.

August 2015:

1. Revised PCC 060 was issued to the contractor for the enhanced Irwin switch for 4th and King and Bluxome intersections, modifications of the switch machine from gauge side to field side, and modifications of the train signal controller and cabinet to accommodate the new Irwin switch machines.
2. The overall shutdown has been reduced to three to minimize the signal work and to defer the actual signal work to the last shutdown after the civil work is completed.

September 2015:

1. Irwin switches for train control system been procured. The Current 4th and King Street, phase 1 and 2 work will not include work to Installation of the train control system; will take place during the third occurrence of the 4th and King planned shutdown.

October 2015:

1. Irwin switches for the train control systems have been received and housed on site. Two of the switches were installed during phase 1 of the shutdowns.
2. The next plan work is schedule to take place on Monday, November 9th.

November 2015:

1. The Contractor will be putting in the infrastructure so that interim signaling solution will be operational, during the second phase shutdown at 4th and King Streets scheduled on Monday, November 9th
2. Future work will involve cutover work to cut in the certifiable permanent system

Risk Mitigation Status**Risk Reference: 79**

Risk	Mitigation Strategy
Delay in obtaining tunnel easements (3 #) (goes to condemnation) - Costs of ROW may cost more than expected	<ol style="list-style-type: none"> 1. Engage Owners in negotiations as soon as possible. 2. PM/CM will provide real estate specialists to facilitate.

Initial Assessment: 2, 3, 6**Current Assessment:** Risk Rating 1 – Requirement Risk**Risk Owner:** A. Clifford**Status Log:**

October 2011 Meeting:

1. All Tunnel easements have been acquired.
2. Recommend to retire this risk from the project.
3. This risk will be revisited next month since not all easements have been obtained

November 2011 Meeting:

1. Right of entry received for properties requiring easement.
2. Costs have been identified through appraisals of properties.
3. Actual value of easements needs to be negotiated with property owners.
4. Added mention of battered piles at UMS headwalls to the risk description as they will cross property lines.

December 2011:

1. Right of possession for each of the three required parcels has been obtained.

January 2012 Meeting:

1. City Attorney's Office is finalizing final easement deed language and price for all three easements.
2. To date owners of 801 Market and 1455 Stockton have agreed to purchase price of easement.
3. Awaiting cost agreement with 790 Market.
4. Recommend to reduce the risk rating.
5. Risk rating reduced to 1, 1, 1.

February 2012 Meeting:

1. SFMTA is working with City Attorneys Office to finalized easement deed indemnity language for the 790 Market easement.

March 2012 Meeting:

1. SFMTA has provided the City Attorney's Office with additional information regarding tunnel and station related settlement at 790 Market. This information will be shared with the property owner at 790 Market in order to address their concerns of settlement and requests to include certain indemnity language in the tunnel easement. Current draft of the tunnel and station grouting licenses contain the requested indemnity language; CCSF Risk Manager, SFMTA and City Attorney do not feel owner's request for indemnity is appropriate in the easement deed.

Risk Mitigation Status**Risk Reference: 79**

Risk	Mitigation Strategy
Delay in obtaining tunnel easements (3 #) (goes to condemnation) - Costs of ROW may cost more than expected	1. Engage Owners in negotiations as soon as possible. 2. PM/CM will provide real estate specialists to facilitate.

April 2012 Meeting:

1. No update from the March report-out.

May 2012 Meeting:

1. No update from the March report-out.

June 2012 Meeting:

1. No update from the March report-out.

July 2012 Meeting:

1. No update from the March report-out.

August 2012 Meeting:

1. The SFMTA has agreed to a final purchase price for the 801 Market and 1455 Stockton easements. 801 Market will transfer title (of the easement) through a purchase and sale agreement and 1455 Stockton will transfer title through a stipulated agreement. Final purchase price negotiations for easement under 790 Market are ongoing.

September 2012 Meeting:

1. Central subway has pre-possession for all 3 easements.
2. Negotiations continue on terms and conditions for 801 Market and 1455 Stockton.
3. Negotiations continue on final purchase price for 790 Market easement.

October 2012 Meeting:

1. Central subway has pre-possession for all 3 easements.
2. The SFMTA has executed a final stipulation agreement for possession of the easement under 1455 Stockton and all remaining funds have been transferred to the property owner.
3. Negotiations continue on terms and conditions for 801 Market.
4. Negotiations continue on final purchase price for 790 Market easement.

November 2012 Meeting:

1. Central subway has pre-possession for all 3 easements.
2. The SFMTA has executed a final stipulation agreement for possession of the easement under 1455 Stockton, final transfer of funds is pending signature of the easement deed from the property owner.
3. Negotiations continue on terms and conditions for 801 and 790 Market.

December 2012 Meeting:

1. Central subway has pre-possession for all 3 easements.

Risk Mitigation Status**Risk Reference: 79**

Risk	Mitigation Strategy
Delay in obtaining tunnel easements (3 #) (goes to condemnation) - Costs of ROW may cost more than expected	<ol style="list-style-type: none"> 1. Engage Owners in negotiations as soon as possible. 2. PM/CM will provide real estate specialists to facilitate.

2. Final transfer of funds for 1455 Stockton easement is pending signature of the easement deed from the property owner.
3. Negotiations continue on final purchase price, terms and conditions for 801 Market and 790 Market Easement Agreements.

February 2013 Meeting:

1. Central subway has pre-possession for all 3 easements.
2. Purchase and Sale Agreements for the 1455 Stockton easement and the 801 Market have been finalized. Final execution is pending the receipt of stamped and signed legal descriptions and plat maps from the San Francisco County Surveyor.
3. Negotiations continue on final purchase price, terms and conditions for the 790 Market Easement Agreement.

March 2013:

1. 1455 Stockton and 801 Market easement deeds executed by SFMTA Director.
2. 790 Market price and terms are still being negotiated.

April 2013:

1. Risk owner changed from G. Hollins to A. Clifford
2. 790 Market Street - The current difference between the Central Subway offer and the owners valuation + severance damages is \$280,000

October 2013:

1. Owners appraised easement value has been included in RAMP update 5

November 2013:

1. Program Director and building owner discussing path to resolution of the 790 Market easement negotiation

December 2013:

1. 790 Market St - A counter offer (for settlement) is expected from the property during December

January 2014:

1. 790 Market St - A counter offer (for settlement) from the owner is still outstanding

February 2014:

1. 790 Market St - A counter offer from the owner is still outstanding

March 2014

1. 790 Market Street - counter offer is still outstanding from owner.

Risk Mitigation Status**Risk Reference: 79**

Risk	Mitigation Strategy
Delay in obtaining tunnel easements (3 #) (goes to condemnation) - Costs of ROW may cost more than expected	<ol style="list-style-type: none"> 1. Engage Owners in negotiations as soon as possible. 2. PM/CM will provide real estate specialists to facilitate.

April 2014

1. Counter offer is still outstanding.
2. The project team spoke with the owner 4/10 and is expecting feedback on the offer in the next two weeks.
3. The project team will follow up with the owner on a weekly basis to move toward resolution.

May 2014:

1. The property owner has advised the project team of outstanding concerns, some of which are issues that have previously been responded to.
2. The project team will attempt to resolve these issues with the property owner and continue toward trial in parallel as required.

March 2015:

1. A condemnation trial date for the 790 Market Street Easement has been set for July 2015.
2. The Project team is holding bi-weekly calls with the owners' representative to attempt to reach resolution before trial.
3. The Project team is compiling documents and responses to respond to enquiries received from the owners' representatives.

August 2015:

1. Condemnation trial date for the 790 Market Easement has been changed to October 2015.
2. The project team in maintaining communication with the owners representative to attempt to reach resolution before trial.
3. The City Attorney's office received a redline markup of the proposed easement deed from the property owner in July.
4. The project team and the City Attorney's office are preparing to exchange valuations with the property owner in August.
5. No change to the status of this risk.

November 2015:

1. As part of an overall evaluation of the remaining requirement and design risk, as well as the low rated active construction risk. The committee preformed a reassessment of this risk to determine if its current Risk rating is still valid.
2. The Risk Committee voted unanimously to retire this risk.

Risk Mitigation Status
Risk Reference: 100

Risk	Mitigation Strategy
Procurement of long lead items delays work. (fans, rails and special track work, TPSS, Escalators, elevators, TBM)	<ol style="list-style-type: none"> 1. Include schedule milestones for procurement of and substantial payment for stored long lead items in contract to encourage early procurement. 2. Monitor procurement of critical items.

Initial Assessment: 2, 2, 2
Current Assessment: Risk Rating 2 – Construction Risk

Risk Owner: E. Stassevitch

Status Log:

February 2012:

1. Contract provisions SP-13 include provisions for storage of materials in bonded warehouse.
2. Contract milestones include adequate time to procure long lead time materials.

May 2013:

1. The first TBM has been delivered to site. Testing of the second TBM was complete May 3rd.
2. Payment for long lead items shown in GP's or SP's
3. Recommend transferring this risk to Construction Risk to monitor procurement or critical items

July 2013:

1. Risk changed from Market Risk to Construction Risk.
2. Risk owner changed from R. Edwards to R. Redmond.
3. CN 1300 Contractor - Tutor Perini has been requested to include long lead items in baseline schedule.
4. Revisit following review of baseline schedule submittal (expected mid July).

October 2015:

1. Long Lead items are in Baseline schedule, and being monitored.
2. Need to verify status of TPSS, Escalators and Elevators.
3. Track work items currently in storage in nearby yards.
4. Sanford Pong will go to witness a fabrication of the Traction Power Substation (TPSS) on October 19, 2015 in the Utah.

November 2015:

1. As part of an overall evaluation of the remaining requirement and design risk, as well as the low rated active construction risk. The committee performed a reassessment of this risk to determine if its current Risk rating is still valid.
2. The construction Risk rating will remain a 2.

Risk Mitigation Status
Risk Reference: 104

Risk	Mitigation Strategy
CPUC approval at Grade Crossing for G0164d takes longer to negotiate / obtain than schedule allows	<ol style="list-style-type: none"> 1. Grade Crossing approvals are not received until final CPUC inspection at the completion of construction. 2. Close coordination with CPUC will continue until approval is received. 3. Signal standardization issue will be elevated to the appropriate SFMTA Division

Initial Assessment: 2, 3.5, 7
Current Assessment: Risk Rating 5 – Construction Risk

Risk Owner: S. Pong

Status Log:

September 2011:

1. Providing preview of 90% submittal to CPUC and will resolve comments/issues from PE before finalizing design documents.

January 2012 Meeting:

1. Design team conducted informal review meeting with CPUC on 12/6/11 in preparation for 1256 pre-final submittal. CPUC provided 5 comments at the meeting that will be incorporated by the designers:
 - Evaluate curb extension at Portal
 - Evaluate curb tapering or end treatments
 - Evaluate train coming sign at 4th/Bryant and 4th/Brannan
 - Evaluate black out/no left turn sign
 - Evaluate guide stripping
2. CPUC issued Resolution SX-92 granting SFMTA approval to construct the new and modified grade crossings in March 11, 2010. This approval is good for 3 years.
3. SFMTA will need to file for an extension of SX-92 at least 30 days before March 11, 2013.
4. SFMTA will need to file CPUC Form G within 30 days after the completion of construction.
5. Recommend to reduce this risk rating.
6. Risk rating reduced to 2, 2.5, 5.

April 2012 Meeting:

1. CPUC review comments are being incorporated into the 100% contract documents.

May 2012 Meeting:

No update.

July 2012 Meeting:

1. CPUC reviewed and approved 11 of 12 comments noted on RCF-066. RCF-66 Comment 49 remains open with no CPUC concurrence or Verification. Comment 49 states the Muni standard Red X “Crossbuck” signal is not consistent with MUTCD standards and is strongly discouraged by the CPUC for new construction. Comment 49 will be resolved with CPUC to assure successful application of SX-92 for new and modified grade crossings due February 11, 2013.

Risk Mitigation Status**Risk Reference: 104**

Risk	Mitigation Strategy
CPUC approval at Grade Crossing for G0164d takes longer to negotiate / obtain than schedule allows	<ol style="list-style-type: none"> 1. Grade Crossing approvals are not received until final CPUC inspection at the completion of construction. 2. Close coordination with CPUC will continue until approval is received. 3. Signal standardization issue will be elevated to the appropriate SFMTA Division

August 2012 Meeting:

1. Mitigation measures to be discussed with CPUC at the August 16, 2012 Safety and Security Meeting.
2. State PUC to review documents, validate and sign off.

September 2012 Meeting:

1. Meeting held with CPUC.
2. Document review ongoing.

October 2012 Meeting:

1. Requirements have been incorporated into the design documents
2. Letter to be sent to CPUC for concurrence

November 2012 Meeting:

1. Confirmation of concurrence is being sought from PUC and is expected to be received by February 2013

December 2012:

1. Approval by the CPUC is given for a specific window of time, and if need another approval will need to be requested.
2. Follow up on letter sent to CPUC for concurrence

January 2013 Meeting:

1. A request for a continuance from CPUC will be sent.

February 2013 Meeting:

1. A letter requesting an extension (continuance) was sent to CPUC February 8th 2013 and is now being processed.
2. The letter was vetted with CPUC for comments prior to being sent.

March 2013:

1. Extension of the timeframe to complete the construction of at grade crossings by 3 years was received from CPUC March 6th 2013
2. Discuss transferring this risk to CM team

April 2013:

1. Construction, testing, and safety requirements need to be met to enable CPUC signoff at completion.

Risk Mitigation Status**Risk Reference: 104**

Risk	Mitigation Strategy
CPUC approval at Grade Crossing for G0164d takes longer to negotiate / obtain than schedule allows	<ol style="list-style-type: none"> 1. Grade Crossing approvals are not received until final CPUC inspection at the completion of construction. 2. Close coordination with CPUC will continue until approval is received. 3. Signal standardization issue will be elevated to the appropriate SFMTA Division

2. Another request for extension will need to be submitted if construction and approval is not received by January 1st 2016.

May 2013:

1. Discuss transferring to Construction Risk and maintain current risk owner.
2. Risk has been transferred to a Construction category, Risk owner remains as Sanford Pon
3. Final form approval from CPUC will be given after construction completion.

July 2013

1. Confirmed design issues have been resolved and agreed to with CPUC, schedule extension granted. Schedule Extensions are for a maximum of three years, another request will need to be generated in 2016.

September 2013:

1. One comment remains open regarding the 'crossbuck' on. Resolution is still pending.

November 2013:

1. CPUC Resolution (TED-253) for extension of at grade crossing was granted. Need to reapply for extension in 2016 as well as resolve outstanding comment related to Red Cross Buck.

October 2014:

1. The Red X cross buck issue remains open. This is an agency wide issue which will require resolution between SFMTA and CPUC.

November 2015:

1. A meeting will be setup with CPUC to discuss the outstanding issue of signal design to be used.
2. CSP will request an extension of the CPUC Resolution (TED-253). The current extension will expire on 3/11/16.

Risk Mitigation Status
Risk Reference: 204

Risk	Mitigation Strategy
Relocation of AT&T Vault and other utilities delays Work south of Bryant	<ol style="list-style-type: none"> 1. Continue negotiations/ coordination with utility owners. 2. Contract 1300 is required to coordinate with utility companies for relocations 3. SWAT team established to address utilities south of Bryant Street 4. Initiate utility coordination meetings 5. Proactively schedule AT&T resources

Initial Assessment: 2, 2, 4
Current Assessment: Risk Rating 3 – Construction Risk

Risk Owner: M. Acosta

Status Log:

December 2012:

1. Identified Risk and refined risk statement together with development of mitigation strategies.

January 2013:

1. Need to setup a meeting with AT&T and a representative from the Design side to walk them through what will be done in the 1300 contract.

February 2013:

1. Risk description refined.
2. AT&T were made aware of the potential need for relocation of the vault and duct bank in November 2012.
3. A meeting has been arranged between CSP and AT&T for Tuesday 2/19/13 to follow up on the November meeting and confirm that the vault and duct bank will need to be relocated.
4. Relocation of the vault has been included in the D&B element of the 1300 contract and is the responsibility of the contractor.
5. The 1300 contract requires the contractor to allow 12 months for AT&T to cut over new services from the existing duct bank into a new duct bank proposed within the eastern sidewalk of 4th Street between Bryant and Brannan Streets.

March 2013:

1. Increase scope of this risk to include other utilities; Level 3, PG&E, MRY, ASB, SFWD, SFDT, Comcast.
2. Contractual execution of the trench installation to be discussed.
3. AT&T have not been contacted during 1300 bid.
4. It was discussed that the schedule impact of this risk rating should be increased to 4 (6-12 months), this increased the risk rating to 6

April 2013:

1. Utility relocations may require a joint trench under the Contract 1300 design build scope.
2. If a joint trench is required under the contract the 1300 contractor would manage the implementation of the joint trench, SFMTA would manage the Form B process for reimbursement of the joint trench costs.

Risk Mitigation Status
Risk Reference: 204

Risk	Mitigation Strategy
Relocation of AT&T Vault and other utilities delays Work south of Bryant	<ol style="list-style-type: none"> 1. Continue negotiations/ coordination with utility owners. 2. Contract 1300 is required to coordinate with utility companies for relocations 3. SWAT team established to address utilities south of Bryant Street 4. Initiate utility coordination meetings 5. Proactively schedule AT&T resources

3. Mitigation strategy added that the 1300 contractor is required to coordinate with private utility companies.
4. A SWAT team has been established comprising DP-3 and the Design Oversight manager who are meeting weekly to address utilities south of Bryant. DP3 are preparing Notice of Intent letters for utilities to relocate.

May 2013:

1. Final Notice of Intent letters were sent to private utilities Friday 5/3/13.
2. Final Notice of Intent letters will be sent to AT&T and PG&E the week commencing 5/6/13.

July 2013:

1. Revisit following Tutor baseline submittal.
2. It is noted that the Tutor schedule submitted 5 days following bid closure allowed a 12 month period to cutover to the new AT&T duct but did not appear to allow adequate time for construction of the AT&T duct along 4th Street.
3. Utility coordination meeting will be held to ensure the contract requirements are understood by the contractor.

October 2013:

1. DP-3 Tech memo being finalized
2. Relocation design and construction schedule to be developed

November 2013:

1. Coordination meetings with utility owners to occur on a regular basis, Tutor Perini are to be invited
 - a. AT&T plan for resource allocation, confirmation of assets and scheduling of work is to be confirmed as AT&T have very few resources who can complete cutover work
2. SFMTA are currently working with AT&T to establish a feasible location to relocate Vault 2081
3. The importance of this work is to be discussed at the next executive partnering meeting with Tutor

December 2013:

1. Letter was sent notifying the contractor of the criticality of this work and requesting a completion schedule
2. Potential vault location has been identified with AT&T. Feasibility is being confirmed via potholing

January 2014:

1. Potholing to confirm locations of utilities to commence the week of January 20th
2. AT&T are to be put on notice of the expected installation and cut over dates.

Risk Mitigation Status**Risk Reference: 204**

Risk	Mitigation Strategy
Relocation of AT&T Vault and other utilities delays Work south of Bryant	<ol style="list-style-type: none"> 1. Continue negotiations/ coordination with utility owners. 2. Contract 1300 is required to coordinate with utility companies for relocations 3. SWAT team established to address utilities south of Bryant Street 4. Initiate utility coordination meetings 5. Proactively schedule AT&T resources

3. Proactively requesting and scheduling AT&T resources added to mitigation strategy.

February 2014:

1. Potholing of utilities has commenced.
2. At the last executive partnering meeting Tutor Perini were tasked with commencing utility coordination meetings.
3. 1/31/14 Letter (CN 1300 Misc. Letter No. 0023) a letter was sent to AT&T notifying them of key dates from Tutor Perini's baseline schedule and requesting AT&T schedule it's resources to meet Tutor Perini's dates.

March 2014:

1. Potholing of utilities is 99% complete. Potholing work at 4th and Townsend remains.
2. Current AT&T ductbank relocation design is constructible but will include relocation of a 20' segment of 12" waterline and shifting of existing AT&T cables.
3. Tutor Perini is projected to start installation of AT&T ductbank by early April 2014 pending completion of soil profile work.

April 2014:

1. Potholing of utilities is 100% complete.
2. There seem to be enough space for a new AT&T manhole and a 36" sewer force main without having to relocate a 20' segment of 12" waterline. Shifting of existing AT&T cables is still necessary at 4th/Bryant; the project team including AT&T Engineer have finalized the workplan to safely accomplish this task.
3. Tutor Perini's subcontractor, Abbett Electric started installation of AT&T ductbank. Abbett decided to temporarily stockpile excavated soils to its yard to be re-used as backfill. Surplus materials to be off hauled pending completion of soil profiling.
4. Risk probability has been reduced to a 1.

May 2014:

1. Installation of AT&T ductbank work continues. Surplus materials to be off hauled pending completion of soil profiling.
2. Expected completion of ductbank and vault installation is July 2014.

June 2014:

1. Installation of AT&T ductbank work continues. Surplus materials to be off hauled pending completion of soil profiling.
2. Expected completion of ductbank and vault installation is September 2014.

Risk Mitigation Status
Risk Reference: 204

Risk	Mitigation Strategy
Relocation of AT&T Vault and other utilities delays Work south of Bryant	<ol style="list-style-type: none"> 1. Continue negotiations/ coordination with utility owners. 2. Contract 1300 is required to coordinate with utility companies for relocations 3. SWAT team established to address utilities south of Bryant Street 4. Initiate utility coordination meetings 5. Proactively schedule AT&T resources

October 2014:

1. Installation of AT&T ductbank work continues. Surplus materials to be off hauled pending completion of soil profiling.
2. Expected completion of ductbank and vault installation is October 31, 2014 for the main trunk. At this time, AT&T can start cut-over process. Note that AT&T had recently requested to install six 4" conduits across Bryant Street. This request does not delay the cut-over start or extend the cut-over duration.

November 2014:

1. Installation of AT&T ductbank work continues. Surplus materials to be off hauled pending completion of soil profiling.
2. Expected completion of ductbank and vault installation is November 26, 2014 for the main trunk.
3. RE sent Miscellaneous City Letter #37 to put AT&T on notice of completion of main ductbank and start of cut-over work. AT&T had requested to install six 4" conduits across Bryant Street; PCC 23 was issued to Tutor. This request does not delay the cut-over start or extend the cut-over duration.

December 2014:

1. Installation of AT&T ductbank work continues. Surplus materials to be off hauled pending completion of soil profiling.
2. Expected completion of ductbank and vault installation is January 30, 2015 for the main trunk.
3. RE sent Miscellaneous City Letter #37 to put AT&T on notice of completion of main ductbank and start of cut-over work. AT&T had requested to install six 4" conduits across Bryant Street; PCC 23 was issued to Tutor. This request does not delay the cut-over start or extend the cut-over duration. RE has not received Tutor's cost proposal

January 2015:

1. No new update from December's report out.

February 2015:

1. Provide a price for BKF Design
2. Set up meeting with PUC

March 2015:

1. Completion of the ductbank work is almost done.
2. Discussions are taking place with AT&T requesting them to meet the original cut-over date. 12months form the date which was prior to any contract changes.

Risk Mitigation Status**Risk Reference: 204**

Risk	Mitigation Strategy
Relocation of AT&T Vault and other utilities delays Work south of Bryant	<ol style="list-style-type: none"> 1. Continue negotiations/ coordination with utility owners. 2. Contract 1300 is required to coordinate with utility companies for relocations 3. SWAT team established to address utilities south of Bryant Street 4. Initiate utility coordination meetings 5. Proactively schedule AT&T resources

April 2015:

1. Completion of the ductbank work by April 10, 2015.
2. Discussions are taking place with AT&T requesting them to meet the original cut-over date. 12months from the date which was prior to any contract changes.

May 2015:

1. Duct bank and vault work by the Contractor is now complete. AT&T has taken possession of the site.

June 2015:

1. Ductbank was signed over by TPC. Substantial completion of AT&T ductbank work occurred on April 16, 2015. This is the date in which the final mandrel report was made.
2. AT&T is in the process of ordering the cable.

July 2015:

1. All cable materials have arrived. AT&T cutover crew will mobilize as early as the week of 7/13/2015 and no later than the week of 7/20/15.

August 2015:

1. AT&T crew completed pulling cables. Cut-over crew will mobilize within 2 weeks for splicing. AT&T's goal is to complete cutover by end of 2015.

September 2015:

1. AT&T cutover crew has not started work yet. The utility crew is awaiting receipt of the splicers.
2. AT&T still believes they can put everything in before the end of the year.

October 2015:

1. AT&T crew has yet to begin cutover work. The utility crew is awaiting receipt of the splicers.
2. AT&T has until April 2016 to put everything in.

November 2015

1. AT&T has made commitment to perform the cutover work by November 19th, 2015.

Risk Mitigation Status**Risk Reference: 204**

Risk	Mitigation Strategy
Relocation of AT&T Vault and other utilities delays Work south of Bryant	<ol style="list-style-type: none">1. Continue negotiations/ coordination with utility owners.2. Contract 1300 is required to coordinate with utility companies for relocations3. SWAT team established to address utilities south of Bryant Street4. Initiate utility coordination meetings5. Proactively schedule AT&T resources

Risk Mitigation Status
Risk Reference: 205

Risk		Mitigation Strategy
Prolong period of CMod's creates additional cost/causes bad blood between Resident Engineer and Contractor	<ul style="list-style-type: none"> √ √ 	<ul style="list-style-type: none"> 1. Cmod Task Force - 5 Areas of Improvement identified 2. Implement areas of improvement 3. Increase Delegation of Authority

Initial Assessment: 1, 1, 3
Current Assessment: Risk Rating 3 – Construction Risk

Risk Owner: E. Stassevitch

Status Log:

December Meeting 2012:

- 1. Identified Risk and refined risk statement together with development of mitigation strategies.

January 2013:

- 1. CMod Task force continues to demonstrate the process is working.
- 2. Task force process has slowed down submission of changes from Contractor

February 2013 Meeting:

- 1. Initial risk rating established
- 2. CMod task force improvements are working
- 3. The combined 1300 contract has effectively resulted in a \$5m Board threshold for the entire 1300 contract (previously \$5m threshold for each of the 4 contracts) – Central Subway to investigate increasing the CMod authority above \$5m.

March 2013:

- 1. Process to increase delegation of authority to be discussed

April 2013:

- 1. Risk owner changed from M. Benson to R. Redmond
- 2. A formal recommendation to increase the delegation of authority will be prepared and presented to the CMB on 4/17.
- 3. A detailed White Paper will be developed for the Project Director outlining the rationale for increasing the delegation of authority.

May 2013:

- 1. A request to the SFMTA board to increase the Director of Transportation authority to approve changes orders of up to \$5 million for each of the Contract 1300 packages (a total of \$20 million) has been included in the calendar item requesting the SFMTA board to award Contract 1300.
- 2. The target SFMTA board meeting for this calendar item is May 21st 2013.

October 2013:

- 1. SFMTA board approved increase in Directors authority with award of Contract 1300 in May 2013.

Risk Mitigation Status
Risk Reference: 205

Risk		Mitigation Strategy
Prolong period of CMod's creates additional cost/causes bad blood between Resident Engineer and Contractor	<ul style="list-style-type: none"> √ √ 	<ul style="list-style-type: none"> 1. Cmod Task Force - 5 Areas of Improvement identified 2. Implement areas of improvement 3. Increase Delegation of Authority

May 2014:

- 1. Progress in the CMod process are continuing to be made.

July 2014:

- 1. Contract 1300 Partnering efforts have expanded to include the RE level, Designers, Utility companies and Department of Traffic.

December 2014:

- 1. No change to the status of this risk.

September 2015:

- 1. Executive partnering meeting on August 27, 2015 established goal to lower number of outstanding merited changes. Focused attention on completing outstanding merit evaluations, and effectively utilizing the regular weekly meeting to move changes thru the process. Program Manager and Contractor Project Manager to attend weekly change meeting to prioritize work and to meet more often if required expediting processing of changes. Progress to be monitored weekly to measure effectiveness and implement mitigations as required.

October 2015:

- 1. Weekly Change Management meetings are beginning to produce results; agreed to list of changes, prioritization of items to be addressed, and scheduling of change negotiations. Progress is still extremely slow in the processing of agreed to changes, but moving forward.
- 2. Outstanding merit determination items are being reduced.

November 2015:

- 1. Progress continues to be extremely slow, but still moving forward.

Risk Mitigation Status
Risk Reference: 222

Risk	Mitigation Strategy
ARGUS Monitoring Software - Sharing Instrumentation for CN1252 and CN1300	1. Outline responsibilities for each contractor (1252 & 1300)

Initial Assessment: 3 (3,1,2)

Risk Owner: E. Stassevitch

Current Assessment: Risk Rating 6 - Construction Risk

Status Log:

February 2014:

1. A delineation of responsibility needs to be established for each Contractor to avoid a potential liability issue.

March 2014:

1. Risk has been assessed. Current risk rating is at a 6.

October 2014:

1. Contract responsibility of instrumentation sharing has been established.
2. Recommendation to retire risk.
3. A letter will be sent to the Contractor, outlining TPC's responsibility for the monitoring software. Risk will remain active until pending action is resolved.

November 2014:

1. CN1300 RFI #807 response identifies for the Contractor the areas of instrumentation required to be monitoring, instrumentation which will be removed, instrumentation installed within public property that will remain in place and instrumentation installed within public property which shall remain in place.

December 2014:

1. A letter will be sent to Tutor Perini by 12/19/14 summarizing the instruments being handed over to CN1300 from CN1252, and the dates that CN1300 work commenced in zones that were still being actively monitored under the 1252 Contract.
2. No change to the status of this risk.

May 2015:

1. Transfer of 1252 Monitoring to TPC (Contract 1300), Letter No. 347 was sent on 12/23/14. Identifying which instruments are to be transferred to TPC.
2. The next-step will be to determine how TPC is to physically receive the instrumentation information since they do not have access to the 1252 version of CM13.

Risk Mitigation Status
Risk Reference: 222

Risk	Mitigation Strategy
ARGUS Monitoring Software - Sharing Instrumentation for CN1252 and CN1300	1. Outline responsibilities for each contractor (1252 & 1300)

June 2015:

1. Instrumentation information will be transferred to TPC by way of downloading all relevant Contract Number 1252 submittals from CM13, compiled via a CD/DVD/Flash Drive and transmit to TPC via a letter or a transmittal.
2. Document Control is in the process of downloading/compiling these nearly 200 submittals, which is expected to be wrapped up by 06/12, referencing SFMTA Letter #347.

July 2015:

1. Continuing to work on gathering all Contract 1252 related submittals for transmission to Contract 1300.

August 2015:

1. Work related to the transmission of nearly 200 submittal is almost complete. Document Control still needs to retrieve the remaining 8 submittal packages which are currently housed at the SFMTA archival facility for the tunnels contract.

September 2015:

1. Transmission of all related submittals complete.
2. Recommend this risk be retired at the next Risk meeting.

October 2015:

1. New information was received involving the possibility additional pending items are to be forwarded to the Contractor as part of the nearly 200 submittal. E. Stassevitch will inquire with M. Kroncke, to confirm what items, if anything remains outstanding.
2. This risk will remain open until confirmation is received, all documentation has been forwarded.

November 2015:

1. Need to confirm with Document Control if the additional 365GB of video files were transferred to TPC's FTP site. If this cannot be done then a backup plan to transfer the files via a external terabyte drive will be implemented.

Risk Mitigation Status
Risk Reference: 226

Risk	Mitigation Strategy
4th and King Street - Potential time for planned work shutdown - Contractor not able to perform the work in the manner prescribed	<ol style="list-style-type: none"> 1. Identify schedule of potential time for planned work shutdown 2. Identify better traffic patterns 3. Pursue 4th & King option to achieve additional 3-6mos on the schedule 4. Review Giants and Warriors schedule for home games

Initial Assessment: 3, 3, 3
Current Assessment: Risk Rating 9 – Construction Risk

Risk Owner: M. Acosta

Status Log:

November 2014:

1. Contractor has yet to submit a proposal for the 4th and King planned shutdown.

December 2014:

1. Contractor has yet to submit a complete proposal for the traffic system. SFMTA Operations is willing to discuss (internally) alternative shutdown periods.
2. A dedicated team needs to be establish to focus on this 8wk sequence of shutdown activity.
3. Item to be elevated for discussion at Partnering session.

January 2015:

1. Letter will be sent to the Contractor rejecting their incomplete proposal.

February 2015:

1. The RE reported the Contractor has already planned the 8-week shutdown in the schedule. However, the Contractor has yet to provide a master work plan. The RE will a send a letter to the Contractor requesting information:
 - a. Provide the status of the site specific work plans for the proposed 10-day shutdown.
 - b. Per spec sect requirement 34 11 00 3.04. Contractor is required to provide a detail of the schedule showing activities with a planned duration.
 - c. Identify the location for where the portable cross-over will go.
 - d. Provide the name (contact person) of the Contractor's System Integration Manger.

March 2015:

1. The Contractor schedule demonstrates they are already behind in activities involving the three full weekend shutdowns.
2. A letter was sent to TPC reminding them they are required by contract to provide SFMTA their schedule 90 days in advance of the work.

April 2015:

1. In latest correspondence, TPC proposed 2 shutdowns in May 2015 (a 3 day and a 6 day shutdowns).
2. The May 2015 proposed shutdown does not meet contract requirements, including the 90 day advance notice, therefore, will be rejected.

Risk Mitigation Status**Risk Reference: 226**

Risk	Mitigation Strategy
4th and King Street - Potential time for planned work shutdown - Contractor not able to perform the work in the manner prescribed	<ol style="list-style-type: none"> 1. Identify schedule of potential time for planned work shutdown 2. Identify better traffic patterns 3. Pursue 4th & King option to achieve additional 3-6mos on the schedule 4. Review Giants and Warriors schedule for home games

May 2015:

1. The Contractor's pending 4th and King Streets Master Plan should address the impact of the freeway off ramp closure, and the propose shutdown days.

June 2015:

1. Contractor's Master Work Plan for 4th and King Streets was received. A review will be done with SFMTA Operations on 05/29. After which a meeting will be scheduled with SFMTA and the Contractor to review the comments made by Operations.
2. The Program's key concerns are to ensure operability to maintain revenue service.

July 2015:

1. A meeting was held with SFMTA Operations on 07/09/15, to discuss the specific requirements of the 1st weekend shutdown
 - Need to install a temporary platform north of the double crossover on King Street.
 - The need to identify that the existing switches will operate in reverse the mode from 4th Street onto King to accommodate for the pull out of trains from MME.
 - The need to have one inspector each, located at the temporary platform and the N-Judah platform to control the single tracking between the double crossover and the N-Judah platform.
 - Also to include an identical street inspection operation at the 4th and Berry station and the channel single crossover as required to provide T-Line service on southern end.
 - A PowerPoint presentation showing the operations of N-Judah line, the T-Line pullout, and then the diesel bus service along Embarcadero station, because the T-Line will not be served from 4th and Berry to the Embarcadero station.
 - A PowerPoint slide presentation on the pedestrian movements
2. Operations requested the Contractor provided and status update twice a week and as we get closer to the Labor day shutdown a update should be provided each day.

August 2015:

1. Update to the specific requirements made by SFMTA Operations as follows:
 - The first shutdown is scheduled for Labor Day Weekend (9/4 to 9/8).
 - Conquest started installing platform on August 5th and to be completed on August 7th.
 - SFMTA Maintenance of Way (Terry Fahey's group) will conduct a trial run for this maneuver prior to Labor Day shutdown.
 - There is no update regarding the requested PowerPoint presentations
2. RE is having separate meetings with Maintenance of Way and Muni Operations once a week.

Risk Mitigation Status**Risk Reference: 226**

Risk	Mitigation Strategy
4th and King Street - Potential time for planned work shutdown - Contractor not able to perform the work in the manner prescribed	<ol style="list-style-type: none">1. Identify schedule of potential time for planned work shutdown2. Identify better traffic patterns3. Pursue 4th & King option to achieve additional 3-6mos on the schedule4. Review Giants and Warriors schedule for home games

September 2015:

1. Night prep work was started on Wednesday 09/02/15
2. Inbound traffic will be shut down during the Labor Day weekend, beginning at 10am on Friday.
3. SFMTA held a press event today, 09/03 at 11am to notify the public of the upcoming transit temporary service interruption involving BART's Transbay tube shutdown and MTA's 4th and King Street track work affecting the normal operation of the Muni T and N lines.
4. The Contractor has completed the installation of a temporary platform to transfer passengers during the shutdown.

October 2015:

1. Current schedule for the next shutdown will begin on Friday November 6th through Saturday, November 14.
2. Contractor's 7 day work schedule was received and approved. SFMTA is working through the logistics in coordination with Operations, Planning, Traffic and Cal Trans permit.
3. SFMTA will perform the certification on Friday, October 16.

November 2015:

1. The final coordination meeting took place today 11/05/15. Logistics with the other agency have been resolved.
2. Everything is on track to perform the second shutdown.

Risk Mitigation Status
Risk Reference: 232

Risk	Mitigation Strategy
Behind Schedule - Unable to Recover from Delay to 1300 Contract	<ol style="list-style-type: none"> 1. Contractor implemented Schedule Recovery 2. Acceleration 3. Scope Reduction

Initial Assessment: 4, 3, 3
Current Assessment: Risk Rating 12 – Construction Risk

Risk Owner: E. Stassevitch

Status Log:

January 2015:

1. Contractor’s schedule update has not been submitted.

February 2015:

1. Contractor has submitted their schedule update on February 04, 2015. The update shows an approximate six month delay. A time impact analysis has not been submitted to justify this claim.
2. To pick up time, the Contractor should be put on notice that activities on the schedule which the Contractor can work two shifts, they should do so.
3. SFMTA needs to perform an in-house analysis on the schedule.

March 2015:

1. SFMTA will perform an in-house analysis of the Contractor’s time impacts submitted to validate the actual durations.
2. SFMTA will meet with the PMOC to discuss activities on the Contractor’s schedule for ways to gain recovery.

April 2015:

1. A draft analysis was done to compare the Contractor’s baseline activities against actual work which occurred in January update.
2. Additional analyses will be ran to demonstrate a side by side comparison for each delay the Contractor is claiming.
3. A standardize document will be created for reporting the Contractor’s work progress versus what is shown in the baseline schedule activity.

May 2015

1. The Program will initiate a schedule containment workshop, to better define the risk to the project, and address issues and ways to mitigate potential delays.

June 2015:

1. A schedule analysis being generated to determine the number of days the contractor is behind schedule.

July 2015:

1. Schedule analysis continues to be generated to determine precise number of days the contractor is behind
2. Partnering workshop held – mini milestones identified to increase confidence that team can attain schedule recovery.

Risk Mitigation Status
Risk Reference: 232

Risk	Mitigation Strategy
Behind Schedule - Unable to Recover from Delay to 1300 Contract	<ol style="list-style-type: none">1. Contractor implemented Schedule Recovery2. Acceleration3. Scope Reduction

August 2015:

1. Schedule updates are being received from the Contractor. Once all updates are received and approved, the Program can proceed with making a determination of the amount of time the Contractor is behind schedule and begin to work on ways to mitigate the delay.

September 2015:

1. Executive Partnering meeting held August 27, 2015, established initial recovery efforts to double shift roof placement activities at UMS to recover lost time from jet grouting operations; also identify any and all work to could be performed now, and implement plan to proceed with that work. Initial ideas identified work in the tunnel. Tunnel walk thru by Contractor took place on September 2, 2015, with effected subcontractors, to develop plan for placing as much tunnel invert as possible prior to break-ins.

October 2015:

1. Work is proceeding with the extended shifts for the roof placements; goal is to complete all but two of them by the moratorium.
2. Work in the tunnel is progressing with removal of the fan line (ducts) and preparation for invert placement. Goal is to complete all invert and rail placement by April 2016 working from North to South.

November 2015:

1. Continuing with efforts to complete roof placements, will not achieve goal of all but two. Need to develop plan for after moratorium to make up lost time on roof placement efforts.
2. Work in the tunnels continues, all fan line removed. Still on track to complete goal by April 2016. Response required for shrinkage crack RFI

Risk Mitigation Status
Risk Reference: 233

Risk	Mitigation Strategy
Acceptance of Shotcrete Substitution - leads to final product being inferior in performance	1. Meet and discuss with TPC's senior management what the issues are and the status for clarification.

Initial Assessment: 3, 3, 3
Current Assessment: Risk Rating 9 -

Risk Owner: M. Kobler

Status Log:

December 2014:

1. SFMTA and TPC have a different interpretation of the contract specification language for where shotcrete may be used for the final lining of the Cross Cut, Platform and Crossover Covers at CTS in the tunnel lining.

January 2015:

1. The Program received a resubmittal of the shotcrete plan. The new submittal deletes the phrase "in lieu of". Allowing the content of the submittal to be reviewed as a mix design for shotcrete.

February 2015:

1. CSDG has been authorize to review the shotcrete resubmittal.

March 2015:

1. Receipt of the Contractor's response to SFMTA letter CS CN 1300 No. 0556 requesting the Contractor demonstrate in his submittal how the performance specifications will be met for concrete by using the shotcrete is still pending.

April 2015:

1. The Contractor has yet to respond to SFMTA's request to demonstrate performance criteria will be met.

May 2015

1. The contractor has yet to respond .

June 2015

1. Contractor has yet to submit.
2. Risk title was reevaluated for accuracy of the risk. The Risk Committee agreed the title should be changed during the June 2015 meeting.

July 2015:

1. TPC announced at the Partnering meeting they are working on the submittal demonstrating the performance requirement.

Risk Mitigation Status
Risk Reference: 233

Risk	Mitigation Strategy
Acceptance of Shotcrete Substitution - leads to final product being inferior in performance	1. Meet and discuss with TPC's senior management what the issues are and the status for clarification.

August 2015:

1. No submittal received, TPC has informed us that they will submit two separate submittals. One for the head house and one for the underground station, crossover and cross cut. The use of shotcrete as a final lining is over a year off

September 2015:

1. Nothing submitted yet.
2. The Contractor indicated during the Partnering meeting on 08/27/15, they are working on it.

October 2015:

1. We have not received the submittal. The issue is thought to be concerning the Contractor proposing sacrificing the waterproofing membrane in front.

November 2015:

1. The Program has expressed concern with the Contractor wanting to piecemeal approach of submitting information related to shotcreting work, which gives the false impression the Program is accepting their proposal of shotcrete in lieu of. SFMTA will send a letter to the Contractor rejecting their submittals ideals (Shotcrete in lieu of). Requesting a more comprehensive submittal package demonstrating they are meeting all of the performance requirements.

December 2015:

- 1.

Risk Mitigation Status
Risk Reference: 234

Risk	Mitigation Strategy
Sequential Excavation Method at CTS - Contractor's propose method will induce subsidence	<ol style="list-style-type: none"> 1. Designers concurrence on variation of options 2. Presented four options to the Contractor for going forward

Initial Assessment: 2, 4, 3
Current Assessment: Risk Rating 7 – Construction Risk

Risk Owner: M. Kobler

Status Log:

January 2015:

1. The Program is awaiting the Contractor's SEM re-submittal. Anticipating their response to SFMTA's letter providing them with 4 options to choose from to perform the work.

February 2015:

1. No new update on this risk.

March 2015:

1. Contractor has yet to submit a response to SFMTA letter providing them with alternatives for the excavation sequences.

April 2015:

1. Contractor has not responded to SFMTA's letter with alternatives
2. The Designer of record will be contracted to review the Contractor's submittal for (scope and delivery) to determine if the proposed is viable.

May 2015:

1. The designer has proposed 4 different sequences for the contractor to evaluate. Contractor is evaluating.
2. DOR was compensated to review the SEM Geometry change and offered suggestions for TPC's evaluation.

June 2015:

1. Contractor has yet to submit.
2. Risk title was reevaluated for accuracy of the risk. The Risk Committee agreed the title should be changed during the June 2015 meeting.

July 2015:

1. Contractor has yet to submit.

Risk Mitigation Status

Risk Reference: 234

Risk	Mitigation Strategy
Sequential Excavation Method at CTS - Contractor's propose method will induce subsidence	1. Designers concurrence on variation of options 2. Presented four options to the Contractor for going forward

August 2015:

1. Contractor has yet to submit.

September 2015:

1. The Contractor has submitted the proposed method. The submittal was forwarded to the designer of record on July 29 and is now being reviewed by CSDG.

October 2015:

1. The submittal was returned revise and resubmit. The designer did not have an issue with the proposed sequences but wanted to see the stamped calculations.

November 2015:

1. The Contractor is performing the work in the approved prescribed sequence. Stamp calculations have yet to be submitted.

December 2015:

- 1.

Risk Mitigation Status
Risk Reference: 238

Risk	Mitigation Strategy
Quality Program is ineffective in processing the nonconformance items causing schedule impacts	<ol style="list-style-type: none"> 1. Review CNCR log on a biweekly basis. 2. Greater clarity in the Log on what CNCR's are open

Initial Assessment: 3, 2,2
Current Assessment: Construction Risk Rating 6

Risk Owner: M. Latch

Status Log:

July 2015:

1. Discussion required regarding condemning the "Quality Program" VS TPC/TPC QC's inability to; accurately log and or expedite the determination of the disposition of a CNCR, provide timely suggested repair procedures, determine root cause, provide acceptable steps to prevent recurrence, correctly close or accurately update the CNCR Log .
2. TPC QC has begun using the CM13 module for Noncompliance Notices for CNCRs. This should provide for timely submittal of CNCRs and timely/accurate updates of the CNCR Log. More to follow.

August 2015:

1. Assessment of the risk was done and values were assigned.
2. **Recommended risk rating 6 (3 2 2)**
 - a. Probability (3), >50%
 - b. Cost impact (2), <>\$250K - \$1M
 - c. Schedule impacts (2), <> 1 - 3 Months

September 2015:

1. SFMTA Construction team diligently working to make sure the CNCR log is accurate and nonconformance items are being clearly addressed

October 2015:

1. As mentioned in the 6Oct2015 C1300 Progress Meeting - TPC QC has made significant progress in providing a more complete, accurate and timely CNCR Log.
2. New mitigation item added.

November 2015:

1. TPC QC, with support from TPC's Project Executive, is no longer allowing commercial issues to impede the generation of CNCRs.
 - a. Additionally, at the bi-weekly Quality Task Force Meeting it was agreed that TPC's CQM and the CSP PQM will discuss CNCRs that are of a particularly contemptuous or controversial nature and in particular to make sure that each CNCR is timely and accurate and describes non-conforming work; not contractual matters. CNCRs are now identified on the CNCR Log and at each Additional Initial Phase Concrete Pre-Placement Meeting, to preclude work that is the subject of a CNCR from being inadvertently

Risk Mitigation Status**Risk Reference: 238**

Risk	Mitigation Strategy
Quality Program is ineffective in processing the nonconformance items causing schedule impacts	<ol style="list-style-type: none">1. Review CNCR log on a biweekly basis.2. Greater clarity in the Log on what CNCR's are open

incorporated in to the work. TPC in general, is providing a timelier but still in need of improvement (including ensuring that sufficient information is provided to the Engineer to allow an efficient review of each CNCR) disposition of CNCRs. TPC QCM is now signing off on each CNCR form, prior to the submittal to the Engineer, attesting to the fact that the CNCR contains a reasonable/plausible root cause, suggested repair, reason for accepting a USE-AS-IS dispositioned CNCR and steps to preclude recurrence.

- b. Posting all CNCRs to CM13 eliminates issues associated with the lack of CNCR file naming convention or human error. Through the use of CM13, the Initial issuances and subsequent processing of CNCRs are now timelier and much easier to retrieve for review/approval/informational purposes. Each of the four stages/phases of each CNCR are documented by posting (attaching) a separate file for (1) Initial, (2) Dispositioned, (3) Approved by SFMTA (REPAIR and USE-AS-IS dispositions) and (4) Closed CNCRs, to the associated CNCR number within CM13.

December 2015

1.

Risk Mitigation Status

Risk Reference: 240

Risk	Mitigation Strategy
Unresolved Assignment of Schedule Delay Responsibility (may lead to increase cost for the Program)	1. Ask for TIA's 2. As Built Schedule (Program Analysis) 3. Perform a more refined analysis

Initial Assessment: 2, 4, 4

Risk Owner: E. Stassevitch

Current Assessment: Risk Rating 8 – Construction Risk

Status Log:

October 2015:

1. Risk was assessed, risk rating was applied and mitigation strategy added.
2. SFMTA requested the Contractor to submit a recover schedule to demonstrate the method to which they intend to capture the time loss. If the Contractor elects not to produce a recovery schedule. The Program should formally document the Contractor is not adhering to the contract.

November 2015:

1. SFMTA is working with Contractor to produce recovery Schedule.
2. SFMTA together with FTA PMOC have planned a schedule workshop for mid Nov. to focus on identifying recovery plans and addressing several issues with the schedule update process.