

Risk Mitigation Status
Risk Reference: 83

Risk	Mitigation Strategy
Cost of vehicles are more than estimated	1. Time the procurement of the vehicles to be part of the procurement of the SFMTA LRV procurement contract.

Initial Assessment: 1, 1.5, 2

Current Assessment: Risk Rating 8 – Requirement Risk

Risk Owner: L. Ames

Status Log:

April 2012 Meeting:

1. Fleet procurement plan needs to be checked with Fleet agency.
2. Lewis Ames is working at a program level with Operations to look at alternatives and options for procurement.

May 2012 Meeting:

1. An RFP is being developed by CH2M Hill for high-floor vehicles.
2. SFMTA will attempt to attach the procurement of the four CS vehicles to a procurement contract of another transit property that is currently pursuing procurement of vehicles.

June 2012 Meeting:

1. No status update.

September 2012 Meeting:

1. CH2M Hill is now preparing an update of the LRV Procurement Plan. CH2M Hill is working under for SFMTA Transit and led by John Haley’s staff under an on-call contract to support the update and help integrate the RFP vehicle specification process led by Elson Hao
2. Julie Kirschbaum, Manager of Service Planning/TEP is leading an effort to produce a new city-wide travel forecast as the means to support the capacity need for LRV fleet plan requirements in 2025.

The Plan is expected to be circulated, presented, approved; in 2012 etc. specific next steps in the 3rd and 4th quarters of 2012 will be provided in the next report.

3. The Procurement Plan is expected to include assessing the feasibility for SFMTA to attach the procurement of the four CS vehicles to a procurement contract of another transit property that is pursuing procurement of vehicles.

October 2012 Meeting:

1. Risk increased from (1,2, 2) to risk rating (4,4,16)
2. There is a possibility that the cost of the LRV significantly exceed the budget

Risk Mitigation Status
Risk Reference: 83

Risk	Mitigation Strategy
Cost of vehicles are more than estimated	1. Time the procurement of the vehicles to be part of the procurement of the SFMTA LRV procurement contract.

February 2013 Meeting:

1. Most procurement actions are still tracking for February
2. FTA/PMO report was received early February 2013
3. Central Subway is preparing a memorandum of understanding to track funds, FTA comments are being incorporated into the memorandum

March 2013:

1. Central Subway completed a Memorandum of Agreement with SFMTA transit division to establish the phases, costs, scope and timing of initial LRV procurement activities resulting in an LRV procurement RFP in May 2013, and vendor selection early 2014.

April 2013:

1. The RFP Package due May 2013 is expected to be complete on time.

May 2013:

1. Request for Qualifications for new LRV's was released in March
2. Responses were due April 22
3. The review process is now underway with the results of the review due late June
4. Procurement of 175 cars
5. Award expected in 2014
6. First cars expected in 2016

June 2013:

1. APTA meetings were held. One on one interviews with individuals who responded to the RFQ
2. Feedback comments on specification are being incorporated into the RFP to be released in June
3. Schedule impact has been lowered to a risk rating of (1).
4. Current assessment is an 8

July 2013

1. RFP now scheduled for SFMTA Board approval in August prior to release.
2. Currently routing and vetting internal approvals for submission to Board

September 2013

1. Due to the purchase of the vehicles no long being a sole source order the risk description will be revised to reflect the current purchase status.

Risk Mitigation Status
Risk Reference: 83

Risk	Mitigation Strategy
Cost of vehicles are more than estimated	1. Time the procurement of the vehicles to be part of the procurement of the SFMTA LRV procurement contract.

October 2013:

1. RFQ released March 29, 2013 identified three qualified bidders to participate in procurement for Light Rail Vehicles (LRV4).
Statement of Qualifications received April 22nd, 2013.
Four car builders, AnsaldoBreda, CAF USA Inc, Kawasaki Rail Car Inc, Siemens Industry Inc, are requested to submit proposals in response to RFP.
2. SFMTA Board approved the issuance of the RFP September 3, 2013 to procure up to 260 LRV4s.
 - a. Base order will be 175 – 24 expansion +151 replacement LRV4s.
 - b. Option for 85
3. The Notice of Advertisement, the RFP and specifications are now on the CCSF Office of Contracts web site:
<http://mission.sfgov.org/OCABidPublication/BidDetail.aspx?K=7262>
The scope covers design, manufacture, test, parts, special tools, manuals and training.
4. Pre-bid Conference: 10/29/2013 10am at SFMTA Muni Metro East Facility 601 25th St., 2nd Fl., Rm. 235
Bids Due: 2 pm 12/10/2013
5. Project Management Plan will be drafted and be in place prior to NTP.
6. Challenges: Extended procurement includes time gap between delivery of first 24 cars and 151 cars that requires FTA approval; funding and financing sources not clear

November 2013:

1. Await bid opening 12/10/13

December 2013:

1. Bid opening delayed until February 2014
2. Need to monitor and confirm that procurement milestones will meet Central Subway testing and commissioning timelines

January 2014:

1. Still awaiting bid opening, 18th February

Risk Mitigation Status**Risk Reference: 52**

Risk	Mitigation Strategy
Unacceptable settlement and impact on major utilities at CTS. (OLD SEWERS AND OTHERS WITHIN 20FT SPACE BETWEEN TOP OF CAVERN AND STREET LEVEL)	<ol style="list-style-type: none"> 1. Evaluate effect of potential settlement on utilities. 2. Slip-lined sewer by CTS contractor. 3. Other utilities will be reinforced as needed, monitored during construction, and repaired / replaced as needed. 4. Contractor to correct impact of settlements by repair. 5. Have contingency repair/restoration plan. 6. Utility contact information and procedure will be on plans. 7. Develop an allowance for utility repair. 8. Include probable costs in estimate.

Initial Assessment: 4, 2, 8**Current Assessment:** Risk Rating 6 – Construction Risk**Risk Owner:** J. Wang**Status Log:**

December 8, 2009 Meeting:

1. R. Edwards was identified as risk owner.
2. A. Hoe will status the mitigation strategy.
3. Mitigation strategy needs to establish metrics for acceptable settlement criteria.
4. Eliminated Mitigation Strategy Item 6: "Cistern at Washington St. will be repaired at the completion of construction and damaged pavements replaced" from this risk and will make a new Risk 52a to address the risk to the cistern.(Done)

January 21, 2010 Meeting:

1. An action from the last risk mitigation meeting to "move Mitigation Strategy Item No. 6 to a new Risk 52a" was not done. R. Rocco will update the register accordingly.

November 2011:

1. Revised mitigation strategy 1 to indicate slip-lining of sewer by CTS contractor, not TBM contractor.
2. Removed mitigation strategy 2 "will pre-install tubamachettes for compensation grouting".
3. Revised mitigation strategy 4 to eliminate use of compensation grouting to correct impact of settlement.
4. Sewers will be slip-lined prior to cavern construction.
5. Affected utilities requiring monitoring are listed in BP drawings.
6. Technical specifications address requirement for leak detection and mitigation plans to repair leaks.

January 2012 Meeting:

1. SFPUC submitted comments on the Effects of Settlement on Utilities report.
2. SFMTA will respond to comments.

February 2012:

1. Mitigation strategy added to "Develop an allowance bid item for utility repair".
2. SFMTA responded to comments. None of the responses change the mitigation strategy for this risk.

Risk Mitigation Status

Risk Reference: 52

Risk	Mitigation Strategy
Unacceptable settlement and impact on major utilities at CTS. (OLD SEWERS AND OTHERS WITHIN 20FT SPACE BETWEEN TOP OF CAVERN AND STREET LEVEL)	<ol style="list-style-type: none">1. Evaluate effect of potential settlement on utilities.2. Slip-lined sewer by CTS contractor.3. Other utilities will be reinforced as needed, monitored during construction, and repaired / replaced as needed.4. Contractor to correct impact of settlements by repair.5. Have contingency repair/restoration plan.6. Utility contact information and procedure will be on plans.7. Develop an allowance for utility repair.8. Include probable costs in estimate.

3. Leak detection requirements added to contract.
4. Allowance for utility repair included in contract.

September 2012 Meeting:

1. CTS has been resolved

October 2012 Meeting:

1. UMS & YBM yet to be closed out

May 2012:

1. **Recommend reducing this risk rating to 3 (2, 2, 1)** (reduce probability and cost impact)
 - a. Current probability (3), >50%, recommend reduce probability to (2), 10-50%
 - b. Current cost impact (3), \$1m - \$3m, recommend reduce cost impact to (2), \$250k - \$1m (CN 1300 CTS AL-8 = \$250k)
 - c. Current schedule impacts (1), <1 month, maintain schedule impact
2. Risk rating to remain at 6

January 2014:

1. Comments regarding UMS and YBM are still to be closed out with SFPUC.
2. A letter responding to the outstanding comments will be sent to SFPUC the week of January 13th

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 6 – Construction Risk

Risk Owner: R. Redmond /M. Benson

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 relocations3. SWAT team established to address utilities south of Bryant Street4. Initiate utility coordination meetings5. Proactively schedule AT&T resources

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

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	<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 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	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

Risk Mitigation Status
Risk Reference: T

Risk	Mitigation Strategy
Delay to final design submittal due to delay of emergency ventilation approval by SFFD.	<ol style="list-style-type: none"> 1. Work with SFFD to develop a plan acceptable to each party. 2. Incorporate SFFD comments into the construction documents.

Initial Assessment: 2, 2, 4
Current Assessment: Risk Rating 0 – Requirement Risk

Risk Owner: A. Hoe

Status Log:

- December 2011:
1. A meeting was held on 12/15/11 with SFFD and SFMTA to discuss emergency ventilation. SFFD agreed to the proposed plan by SFMTA as long as additional signage and lighting were provided in the stations to increase the safety of emergency responders in event of an emergency.
- March 2012 Meeting:
1. Required emergency ventilation requirements will be incorporated into the construction documents.
 2. Recommend to retire this risk from the risk register.
 3. This risk is not retired. Final approval by SFFD on 100% construction documents still needed.
- May 2012 Meeting:
1. SFFD requirements are being implemented in the construction documents.
 2. A variance for the under stair requirement will be sought from SFFD.
- June 2012 Meeting:
1. SFFD has conditionally approved the 3-fan configuration in the stations.
 2. SFFD has conditionally approved the CFD analysis for each station based on the approval of one-hour tenability using illuminated platform edge, and access/egress route signage/demarcation.
 3. Final approval by SFFD will occur during the DBI pre-application review for each station.
- September 2012 Meeting:
1. SES review comments addressed, revised report submitted.
- October 2012 Meeting:
1. Follow up required with SES to close out remaining comments and confirm concurrence
- November 2012 Meeting:
1. Central Subway continue to work with SFFD to close out the remaining comments
- December 2012 Meeting:
1. Comments received by SFFD, submittal will be revised.

Risk Mitigation Status
Risk Reference: T

Risk	Mitigation Strategy
Delay to final design submittal due to delay of emergency ventilation approval by SFFD.	<ol style="list-style-type: none"> 1. Work with SFFD to develop a plan acceptable to each party. 2. Incorporate SFFD comments into the construction documents.

January 2013:

1. SES will be forwarded to Fire Life Safety Committee for approval.

February 2013 Meeting:

1. The Tunnel Ventilation SES resubmittal was sent for verification 1/18/13 (verification is expected early March 2013).

March 2013:

1. No new update to this risk.

April 2013:

2. A conference call was held between HNTB and SFFD on 3/21/13 to review open comments.
3. SFFD were satisfied with the responses given.
4. HNTB are preparing a revised Tech Memo for verification prior to formal submission.

May 2013:

1. Concurrence was received from SFFD for the revision 2 of the SES technical memo
2. The tech memo will be routed internally for signature prior to sending to FLSC (Fire Life Safety Committee) for signoff.
3. The completed and signed tech memo is expected to be completed and signed by the FLSC by the end of May 2013.

July 2013:

1. SES report has been approved by SFFD, being routed internally for signature.
2. Review comments to be addressed prior to retirement of risk.

November 2013:

1. Review comments have been closed out.
2. Risk to remain open until Tunnel Lowering and Chinatown station head house changes are resolved.

December 2013:

1. Letter sent to Designer for their agreement to finalize scope of work.

January 2014:

1. Concurrence letter received from SFFD
2. Risk retired by unanimous consent of the Risk Assessment Committee 1/14/14

Risk Mitigation Status	
Risk Reference: 89	
Risk	Mitigation Strategy
3rd Party reviews of Design documents delays completion of Final Design.	Provide assistance to 3rd Parties to facilitate their reviews and obtain concurrent partial approval for underground work.

Initial Assessment: 2, 2, 2

Risk Owner: J. Wang

Current Assessment: Risk Rating 2 – Design Risk

Status Log:

January 2012 Meeting:

1. Meetings with Third Party reviewers have been and continue to be held with Muni Operations, DBI, SFFD, BART, etc.
2. Late review comments will be handled as addendum.

May 2012 Meeting:

1. A peer review panel was convened to assist in DBI reviews.
2. SFFD has been paid to assist in review and approval of Central Subway contract documents.
3. Meetings with other third party reviewers are ongoing.

June 2012 Meeting:

1. Coordination with 3rd Party reviewers continues.

August 2012 Meeting:

1. Majority of third party reviews have been closed. Remaining reviews are in process of going through closure phase (requiring concurrence and verification of comments). Responses have been provided to each 3rd party comment. Priority was given to 3rd party reviewers with permit approval authority such as SFFD, SFPUC and DBI. Note that the design phase has been closed.

September 2012 Meeting:

1. Process of closing out PUC and DBI comments is ongoing.
2. PUC requirements as per draft MOU scope are being incorporated into 1256 by addendum.

October 2012 Meeting:

1. Process of closing out PUC and DBI comments is ongoing.
2. PUC requirements as per draft MOU have been incorporated into combined contract.

November 2012 Meeting:

1. Central Subway continue to work with PUC and DBI to close out remaining comments

December 2012 Meeting:

1. The process of closing out all comments from PUC and DBI to is ongoing.

Risk Mitigation Status	
Risk Reference: 89	
Risk	Mitigation Strategy
3rd Party reviews of Design documents delays completion of Final Design.	Provide assistance to 3rd Parties to facilitate their reviews and obtain concurrent partial approval for underground work.

February 2013 Meeting:

1. Meeting scheduled with PUC early March to address remaining comments
2. Status of close out of DBI electrical and mechanical to be confirmed.

March 2013 Meeting:

1. Not a delay.
2. Verification by reviewers of comment incorporation task is remaining.

April 2013:

1. Verification by reviewers of comment incorporation task is ongoing.

May 2013:

1. The status of close out of the DBI comments is as follows:
 - a. CTS – complete
 - b. UMS – complete
 - c. YBM – 95% complete (only mechanical comments require close out)

June 2013:

1. YBM – 100% complete
2. Verification of 90% comments from reviewers are still being closed out.

July 2013:

1. DBI approved the design of all three stations.
2. Verification of 90% comments from reviewers still being closed out.

December 2013:

1. Verification of 90% comments are still being closed out.

January 2014:

1. Outstanding verification comments are still being closed out.
2. The risk owner is working with DBI to close out the remaining comments

Risk Mitigation Status**Risk Reference: 2a**

Risk	Mitigation Strategy
42"/48" sewer line relocated as part Utility 1 package is damaged by subsequent construction of the launch box.	<ol style="list-style-type: none"> 1. Follow on contractor responsible for repairs to any existing utility lines. 2. Also included an option in Utility 1 package to delete this work and have it installed by Contract 3. 3. Properly as built actual location as part of Utility 1 package and provide to Contract 3 Contractor

Initial Assessment: 1, 2, 2**Current Assessment:** Risk Rating 0 – Construction Risk**Risk Owner:** S. Wilson**Status Log:**

September 2011:

1. Sewer Installation complete. Awaiting as built drawing.
2. Sewer installed according to contract drawings.
3. Sewer backfilled in cement sand slurry to protect it during launch box wall construction.

December 2012:

1. Risk owner changed from J. Caulfield to S. Wilson
2. 1252 Contractor is responsible for repairs to existing utility lines
3. As-built drawings have been provided to the 1252 contractor
4. Video survey of the sewer is required following construction
5. The sewer location was confirmed by the 1252 contractor during construction of the guide-walls

April 2013:

1. The launch box has been constructed down to invert level with no damage to the sewer line detected to date
2. Maintain risk rating until tunnel boring has been completed in this area

January 2014:

1. Both TBMs have passed this area with no damage to the sewer
2. Risk retired by unanimous consent of the Risk Assessment Committee 1/14/14

Risk Mitigation Status**Risk Reference: 5**

Risk	Mitigation Strategy
Possibility that lowest level of tie-backs extending out from Moscone Center could be within the tunnel alignment.	<ol style="list-style-type: none"> 1. Lowered tunnel alignment 5' below the lowest expected tieback. 2. Including obstruction clause and allowance in contract documents.

Initial Assessment: 1, 1, 1**Current Assessment:** Risk Rating 0 – Construction Risk**Risk Owner:** S. Wilson**Status Log:**

September 2011:

1. Tunnel contract has been awarded
2. Contract documents contain location of tiebacks from as built drawings.
3. Tunnel alignment was lowered to avoid the lowest expected tie back at Moscone Center.
4. Differing site conditions clause is included in Tunnel contract.
5. Recommend to retire this risk from the risk register.

December 2012:

1. Risk owner changed from J. Caulfield to S. Wilson.
2. Maintain risk rating as there is still a possibility that tiebacks are deeper than expected.

January 2014:

1. Both TBMs have passed the Moscone Center and have not encountered tie backs
2. Risk retired by unanimous consent of the Risk Assessment Committee 1/14/14

Risk Mitigation Status
Risk Reference: 13

Risk	Mitigation Strategy
Damage / settlement 3x 5' to old brick sewer running parallel to tunnel alignment	Slip Line 3'x5' brick sewer before TBM reaches CTS.

Initial Assessment: 1, 1, 1
Current Assessment: Risk Rating 1 – Requirements Risk

Risk Owner: M. Benson

Status Log:

September 2011:

1. Tunnel profile has been lowered 25 ft.
2. Sewers will be video taped prior to and after tunnel drive.
3. Contract documents include allowance for repair of utilities damaged during tunnel drive.

May 2013:

1. 3x5 sewer at CTS does not require slip lining prior to tunnel construction.
2. Settlement impact was mitigated by lowering the tunnel 25'.
3. Recommend retiring this risk.

October 2013:

1. Expand risk description to include 3x5' sewer at the corner of Stockton Street and Columbus Avenue.
 - a. PUC AWSS is preventing slip lining work from commencing
 - b. Central Subway staff are working with PUC to develop a plan for resolution

December 2013:

1. A meeting was held with PUC 12/3/13 to discuss the sewer issues in north beach
 - a. A plan has been developed for implementation
 - b. The timing of installation activities are to be monitored to ensure they are complete prior to the TBM passing through the area
 - c. Central Subway will seek reimbursement of additional costs from SFPUC
2. Risk owner changed to M. Benson

January 2014:

1. The tunneling contractor has priced the proposed scope of work in the Green Street area.
2. Informal feedback has been received from SFPUC that they will not be paying the delta cost difference
3. Central Subway will advise SFPUC that spray mortaring is the best technical solution, but is an improvement to their aging assets. As such, if SFPUC will not agree to pay the additional delta costs Central Subway sees no option but to survey, increase monitoring of the assets, and make any repairs required following completion of tunneling.

Risk Mitigation Status
Risk Reference: 15

Risk	Mitigation Strategy
Major TBM machine failure	1. Closely monitor condition and maintenance of the machines.

Initial Assessment: 1, 2, 2

Risk Owner: S. Wilson

Current Assessment: Risk Rating 2 – Construction Risk

Status Log:

October 2011:

1. Risk remains active.
2. Contractor has indicated that they plan to use a newly manufactured TBM for this project.

October 2013:

1. TBMS have been designed specifically for Central Subway conditions
2. Update on preventative maintenance to be provided
3. Confirm number of spare main bearings available per specification

December 2013:

1. Specification section 31 71 19
 - a. One spear main bearing assembly and seals, one spare main drive gear available for replacement of the corresponding parts to be provided with each TBM
 - b. Spares shall be identified and available for the duration of TBM excavation and be deliverable to the site within 1 week

January 2014:

1. Both TBMs have experienced thrust ram failure in the last month
 - a. The Southbound TBM was stopped for approximately 2 weeks
 - b. The Northbound TBM was stopped for approximately 1 week
2. The tunneling contractor is assessing options to rectify the issue which can be implemented during the regular maintenance periods for the machines. Option 1) replace seals with a different seal 2) install an additional seal
3. A summary of the ongoing maintenance on the TBMs will be provided next meeting

Risk Mitigation Status	
Risk Reference: 50	
Risk	Mitigation Strategy
Station contractor delayed by tunnel contractor since station contractor cannot break in to the tunnels until the tunnels have been finished.	1. Include Milestone dates in Tunnel Contract when the turnover of tunnels to CTS contractor has to occur. 2. Actively monitor progress towards schedule milestones. 3. Add constraints in CTS contract specification.

Initial Assessment: 3, 4, 11

Risk Owner: M. Benson

Current Assessment: Risk Rating 3 – Construction Risk

Status Log:

September 24, 2009 Meeting:

- Attendees agreed that an LONP is one item that would alleviate this risk.
- A request for an LONP is presently being prepared. It appears at this time that an LONP has a good chance of being granted.

February 2012:

- Constraints on CTS contractor added to specification sections Work Sequence and Contract Interface.
- LONP was granted by FTA for construction of the launch box.

March 2013:

- Contract 1300 Specification section 01 12 17, 4 a) – tunneling equipment to be removed from CTS 450days following NTP (timeframe approved through CMB and included in CN 1300 addendum 3).

April 2013:

- Discuss revising this risk description to ‘break into tunnel delayed by 1252 contractor’ as applicable to the 1300 contract.
- Specification timing for tunneling equipment to be removed from UMS and YBM to be checked
- Current 1252 cross passage completion dates and 1300 tunnel break in dates (if NTP June 20, 2013):

Contract 1252			Contract 1300		
Milestone (complete)	Contract constraint (days following NTP)	Current Milestone date	Milestone	Contract Constraint (days following NTP)	Milestone Date (if NTP June 20, 2013)
CP1	851	6/4/14	Break into tunnel CTS	450	9/13/14
CP2, CP3 & 4	851, 915	6/4/14, 8/6/14	Break into tunnel UMS	620	3/2/15
CP5	Not a milestone	8/8/14	Break into tunnel YBM	620	3/2/15
Tunnel Substantial completion	1157	4/10/15	Tunnel Portal Access	830	9/28/15

May 2013:

- PMCM will continue to monitor the interface between the 1252 and 1300 contracts.
- No change to report.

Risk Mitigation Status	
Risk Reference: 50	
Risk	Mitigation Strategy
Station contractor delayed by tunnel contractor since station contractor cannot break in to the tunnels until the tunnels have been finished.	<ol style="list-style-type: none"> 1. Include Milestone dates in Tunnel Contract when the turnover of tunnels to CTS contractor has to occur. 2. Actively monitor progress towards schedule milestones. 3. Add constraints in CTS contract specification.

June 2013:

1. PMCM continue to monitor the interface between the 1252 and 1300 contracts.

Nov 2013:

1. Contract 1252 milestones were delayed in October because of delays to the Northbound TBM assembly and testing.
2. Concurrent delays to the Retrieval Shaft are also having an impact to 1252 Milestones 1 & 2.
3. Future forecast trend to be developed considering progress to date, and expected progress for the remaining work and geological conditions (i.e. boring through rock)
4. Central Subway team to check that BIH recovery schedule uses reasonable assumptions based on expected progress

	CN1252 Contract Requirement**	CN1252 Oct Finish	CN1300 Requirement	1252 Oct & 1300 Variance	
YBM Headwalls Complete	N/A	20-Sep-14 A	31-Jul-13	(51)	CD
UMS Headwalls Complete	N/A	8-Nov-13	14-Sep-13	(55)	CD
CTS Tunnel Interface Complete 1252 MS 1 - Complete Cross Passages 1&2 (CTS)	10-Jun-14	9-Jul-14	9-Sep-14	62	CD
UMS Tunnel Interface Complete 1252 MS2 - Complete Cross Passages 3&4 (UMS)	13-Aug-14	29-Aug-14	26-Feb-15	181	CD
YBM Tunnel Interface Complete	N/A	30-Sep-14	26-Feb-15	149	CD
1252 Tunnel Substantial Completion	12-Apr-15	11-May-15			
Tunnel Portal Completion 1252 Tunnel Final Completion	12-May-15	8-Jun-15	24-Sep-15	108	CD

** Includes PCC10 & COR8

December 2013:

1. Analysis of expected TBM progress not yet complete
 - a. (see analysis chart)
2. Await submittal of Recovery Schedule 5 from contractor

Risk Mitigation Status	
Risk Reference: 50	
Risk	Mitigation Strategy
Station contractor delayed by tunnel contractor since station contractor cannot break in to the tunnels until the tunnels have been finished.	<ol style="list-style-type: none"> 1. Include Milestone dates in Tunnel Contract when the turnover of tunnels to CTS contractor has to occur. 2. Actively monitor progress towards schedule milestones. 3. Add constraints in CTS contract specification.

January 2014:

1. No current impact at interface points.
2. The Tunnel Contractor's Recovery schedule 5 is still to be assessed against the Station contractors schedule to determine if a conflict between the two contracts is expected.
3. The recovery schedule will not be approved unless the Program believes the dates to be realistic.

Risk Mitigation Status
Risk Reference: 196

Risk	Mitigation Strategy
The process of acquiring station licenses: acquisition/condemnation could significantly delay schedule and cost more than that presently planned.	1. Continue to negotiate with building owners 2. Required Notices and Appraisals to be completed 3. Commence condemnation process with City Attorneys

Initial Assessment: new risk

Risk Owner: A. Clifford

Current Assessment: Risk Rating 4 – Construction Risk

Status Log:

September 2012 Meeting:

1. Risk 57 retired August 2012. New Risk 196 opened.
2. To date 9/27 required Station Licenses have been signed by the respective property owners.
3. 5/27 have reached verbal agreement or have been sent to the owner for signature.
4. 13/27 Licenses are outstanding
 - a. 7 of the 13 outstanding Licenses are progressing toward agreement
 - b. The Program team is currently preparing for condemnation on the following 6 Licenses should
 - 1 Stockton (Apple) & 212 Stockton (Bulgari) (same property manager)
 - 216 Stockton (Dior)
 - 39 Stockton (Disney)
 - 19 Stockton (Armani) – unresponsive owner
 - 250 Fourth Street (Olivet University)
5. Targeting Board of Supervisors 10/23/12
 - a. remaining Notice of Intent to Appraise mailed 8/30/12
 - b. finalize list of condemnation properties by 9/14/12
 - c. remaining appraisals to be completed by 9/20/12
 - d. meeting with board clerk 9/21/12
 - e. government code offer letters to be sent by 9/27/12

November 2012 Meeting:

1. To date;
 - a. 11/27 required station licenses have been signed by the respective property owners.
 - b. 4/27 have reached verbal agreement or final drafts have been sent to the owner to sign.
 - c. 12/27 Station licenses remain outstanding, 3 of which are being negotiated with the a single property owner (Macy's) and are expected to reach agreement.
2. 9/27 Remaining station licenses + 2 remaining tunnel easements (Central Subway has possession of the two tunnel easements) have been calendared for the December 11th Board of Supervisors Hearing.
 - a. Central Subway project team and the City Attorney's office submitted draft Resolutions of Necessity to the Clerk of the Boards office November 5th.
 - b. The Central Subway Project team continues to negotiate with the property owners.

Risk Mitigation Status	
Risk Reference: 196	
Risk	Mitigation Strategy
The process of acquiring station licenses: acquisition/condemnation could significantly delay schedule and cost more than that presently planned.	<ol style="list-style-type: none"> 1. Continue to negotiate with building owners 2. Required Notices and Appraisals to be completed 3. Commence condemnation process with City Attorneys

- c. The required access for compensation grouting and building monitoring is expected approximately May 10th 2013 should this need to be obtained through the eminent domain process.

April 2013:

1. Outstanding Tunnel & Station Group A licenses: (a, b and c do not have the condemnation option available at this time)
 - a. **Macy's 3 properties** – licenses for the remaining 3 properties to be sent to Macy's 4/11/13 (233 Geary, 120 Stockton, 101 Stockton)
 - b. **1013-1015 Stockton Street** – the final agreement was hand delivered to the owners representative for signature 4/10/13. Signature of the 3 owners is expected by 4/19
 - c. **3 Pagoda properties** (725 Filbert, 659 Columbus, 1717 Powell) – details and offer letters have been sent to owners
 - d. 950 Stockton Street – Central Subway continues to negotiate with the HOA and land owner while working with the City attorney to commence condemnation if agreement cannot be reached by 4/19
 - e. 216 Stockton – resolving final issues with owner (condemnation to commence 4/19 if agreement cannot be reached)
 - f. 1 Stockton and 212 Stockton – final agreement sent to owner for signature 4/9/13
 - g. 1455 Stockton Street – condemnation suit filed 4/9/13, possession estimated mid August 2013
 - h. 19 Stockton Street – condemnation suit filed 2/13/13, possession estimated 7/6/13

July 2013:

1. 4 Licenses to be obtained by SFMTA are outstanding
 - a. 659 Columbus Ave (1252 Contract)
 - License has been verbally agreed and sent to the owner for signature (expecting signed agreement by 7/15).
 - The Program has not prepared to condemn this license.
 - b. 1455 Stockton (1252 Contract)
 - The pre-judgment possession hearing scheduled for 7/9/13 has been continued to 7/23/13. Estimated possession date is now 8/26/13.
 - The project team continues to seek resolution of the license through negotiation with BofA and the owner.
 - c. 950 Stockton (1300 Contract)
 - Condemnation action filed 7/8/13. Possession of the license is estimated to be late November 2013.
 - The project team continues to work with the Mandarin Tower Homeowners Association (HOA) and the owner to reach agreement. Currently the Project team is requesting the HOA to sign the agreement with a condition that compensation grouting work cannot proceed until agreement from the landowner is received.
 - d. 19 Stockton (1300 Contract)
 - Condemnation suit filed 2/13/13.
 - The owner has engaged trial condemnation attorneys and is challenging the City's 'right to take' this license.
 - The pre-judgment possession hearing originally scheduled for 6/7/13 and was continued by the court.
 - City attorney availability pushed pre-judgment possession hearing date to early August 2013.

Risk Mitigation Status
Risk Reference: 196

Risk	Mitigation Strategy
The process of acquiring station licenses: acquisition/condemnation could significantly delay schedule and cost more than that presently planned.	1. Continue to negotiate with building owners 2. Required Notices and Appraisals to be completed 3. Commence condemnation process with City Attorneys

- Owner attorney availability pushed pre-judgment possession hearing date September 9th 2013. If the motion for pre-judgment possession is successful, possession of the license would be obtained approximately October 11th 2013.

October 2013:

1. 950 Stockton Street
 - a. Negotiation
 - Signed license received from MTOA
 - Negotiation continues with property owners
 - b. Condemnation
 - Signed disclaimers of interest have been received from most owners of record who can now be dismissed from the condemnation action
 - Condemnation continues as summarized below (also see attached graphic)

File motion to court for service/summons via publication	10/11/2013	
	35	days
Court decision on service via publication (estimated date)	11/15/2013	
	5	days
Publish summons (once a week for 4 weeks)	11/20/2013	
	30	days
Publication period (court date set following 30day period)	12/20/2013	
	90	days
Pre-judgment possession hearing	3/20/2014	
	5	days
File documents with court & serve 30 day notice to owners 'notice of entry of order'	3/25/2014	
	20	days
Serve 10 day notice to owners (not an eminent domain requirement)	4/14/2014	
	10	days
Possession of license	4/24/2014	

2. 19 Stockton Street
 - a. Pre-judgment possession hearing held 9/26/13
Pre-judgment possession granted 10/4/13

Risk Mitigation Status	
Risk Reference: 196	
Risk	Mitigation Strategy
The process of acquiring station licenses: acquisition/condemnation could significantly delay schedule and cost more than that presently planned.	<ol style="list-style-type: none"> 1. Continue to negotiate with building owners 2. Required Notices and Appraisals to be completed 3. Commence condemnation process with City Attorneys

- Possession 30days following service to owner – early November
- b. Right to take hearing 11/18/13
 - c. Compensation Trial 3/10/14

November 2013:

1. 950 Stockton Street
 - a. Signed licenses received from MTOA and basement condo owner
 - b. Conference call held with Owners attorney and engineer 11/8/13. SFMTA to send a revised agreement incorporating comments discussed on the call to owner for review.
 - c. City attorney's office is preparing motion for service via publication which is the next step in the condemnation process. This step is occurring 1 month later than anticipated (delays due to 19 Stockton defense preparations).
 - d. Revised condemnation dates to be included in next schedule update.

December 2013:

1. 950 Stockton Street
 - a. Condemnation
 - City Attorney's office continues condemnation through courts
 - Possession of license through condemnation is expected prior to contractor installation of TAMS
 - b. Negotiation
 - Central Subway Staff and City Attorney's Office (CAO) continue negotiation of license with owner
 - Revised license sent to owners attorney for review 12/9/13
2. 19 Stockton Street (City has possession of license)
 - a. Condemnation
 - Right to take hearing held 25/11/13, CAO filed closing brief to court 12/6/13.
 - Decision expected December 2013/Jan 2014
 - Compensation trial is still scheduled for March 2014
 - b. Negotiation
 - Court ordered settlement conference held 11/14/13
 - Central Subway provided best and final offer for the license to the owner and has not received a response

January 2014:

1. 950 Stockton Street
 - a. Negotiation – complete. Signed license agreements have been obtained from the 2 building owners, the homeowners association, and the basement commercial condo owner

Risk Mitigation Status	
Risk Reference: 196	
Risk	Mitigation Strategy
The process of acquiring station licenses: acquisition/condemnation could significantly delay schedule and cost more than that presently planned.	<ol style="list-style-type: none"> 1. Continue to negotiate with building owners 2. Required Notices and Appraisals to be completed 3. Commence condemnation process with City Attorneys

- b. Condemnation
 - City Attorney's office will file withdrawal of the condemnation action following execution of the signed agreements
- 2. 19 Stockton Street (City has possession of license)
 - a. Condemnation
 - Right to take hearing held 25/11/13, 1/13/14 Court ruled in favor of the City.
 - Compensation trial is scheduled for March 10, 2014. Central Subway will request another settlement conference with the owner prior to the compensation trial.
 - b. Negotiation
 - Central Subway has not received a response to its December 2013 offer to the Owner

Risk Mitigation Status**Risk Reference: 218**

Risk	Mitigation Strategy
Air replenishment system no longer required – Agency bears unnecessary cost of installation and maintenance of an air replenishment system that is no longer required.	<ol style="list-style-type: none"> 1. Contractor to be notified to place procurement on hold 2. Central Subway to seek approval from SFFD to delete the system from the contract

Initial Assessment: 1**Current Assessment: 1****Risk Owner: A. Hoe****Status Log:**

November 2013:

1. New risk identified in light of recent changes to the San Francisco Fire code removing the requirement for air replenishment systems from high rise buildings
2. Strategy for approval to remove the system is to be discussed
3. Action on this risk needs to be taken soon.

December 2013:

1. Contractor will be put on notice to put everything on hold.
2. Information about the code change will be forwarded to the Contractor.
3. A meeting with the SF Fire Marshall to discuss the issue is pending.

January 2014:

1. Initial risk rating assessed at 1 by the Risk Assessment Committee on 1/14/14
2. Mitigation Strategy items 1 and 2 added

Risk Mitigation Status
Risk Reference: 219

Risk	Mitigation Strategy
Clearance between YBM slurry wall and constructed tunnels results in a strike causing safety or structural concerns	<ol style="list-style-type: none"> 1. Program Safety Manager to prepare a comprehensive safety plan to address this issue 2. Program to prepare a written position/response to concerns raised regarding this issue

Initial Assessment: 3 - (2,2,1)
Current Assessment: 3

Risk Owner: R. Redmond/M. Benson

Status Log:

November 2013:

1. New risk identified the possibility that the clearance between the outside of the SB tunnel, to the inside of the YBM slurry wall may be as little as 3" (if construction tolerance is used for both the tunnel and the slurry wall).
2. Communication with the designer to be put on record to the effect that the Central Subway Program understands that this was coordinated between DP1 and DP2 during design.
3. A graphic is to be generated showing the clearance between the outside of the tunnel, the inside of the slurry wall, and the reinforcing detail at the corner of the headwall.
4. The mitigation strategy is to be developed.

December 2013:

1. The CM Team has requested the Contractor submit a new submittal on the slurry wall.

January 2014:

1. Initial risk rating agreed by the Risk Assessment committee 1/14/14
 - a. Probability - **2** (10-50%), Cost Impact – **2** (\$250k-\$1m), Schedule Impact – **1** (<1 month)
2. Risk description revised to reflect that the issue pertains to the clearance between the slurry wall and the tunnel for the entire length of YBM station
3. Report back next month on the survey location for the tunnel (what tolerance has the tunnel been constructed to?)
4. Mitigation strategy updated

Risk Mitigation Status**Risk Reference: 220**

Risk	Mitigation Strategy
Compensation grouting at the Pagoda site is delayed by resolution of the scope and role of the designer, and contractor.	<ol style="list-style-type: none">1. Direct the contractor to perform the work under the contract2. Document (in real time – daily basis if necessary) if the contractor refuses to diligently pursue the work3. Notify contractors bonding company if the contractor refuses to carry out the work

Initial Assessment: 5 (5,1,1)**Current Assessment:** 5**Risk Owner:** A. Hoe**Status Log:**

November 2013:

1. Risk identified – CSDG have advised that they do not have the appropriate resources to direct the compensation grouting work for mitigation at the properties surrounding the Pagoda Theatre site
2. Mitigation strategy and risk profile to be discussed

December 2013:

1. Options to find qualified person are being explored.

January 2014:

1. Risk mitigation strategy added, initial risk assessment agreed by the Risk Assessment Committee 1/14/14
2. A letter will be issued to the contractor instructing them to perform the contract work, and that design support will be provided on an as needed basis.

Risk Mitigation Status

Risk Reference: 221

Risk	Mitigation Strategy
UMS Structural Steel may not be available in US	1.

Initial Assessment: TBD (new risk)

Current Assessment: Risk Rating - TBD

Risk Owner: R. Redmond/ A. Hoe

Status Log:

January 2014:

1. This issue has been resolved, US sourced steel can be used.
2. Risk retired by unanimous consent of the Risk Assessment Committee 1/14/14

RETIRED