



Memorandum

Date: 03.15.17 **RE:** Board
March 21, 2017

To: Transportation Authority Board: Commissioners Peskin (Chair), Tang (Vice Chair), Breed, Cohen, Farrell, Fewer, Kim, Ronen, Safai, Sheehy and Yee

From: Eric Cordoba – Deputy Director for Capital Projects *EC*

Through: Tilly Chang – Executive Director *TC*

Subject: **INFORMATION** – Major Capital Projects Update – Central Subway

Summary

The Central Subway is one of the signature projects in the Prop K sales tax Expenditure Plan. As Phase 2 of the T-Third light-rail line, it will extend from 4th and King Streets to Chinatown, with a surface station at Brannan Street and underground stations at the Yerba Buena/Moscone Center, Union Square, and Chinatown. Work on this project reached 64% in December 2016. Construction has been completed on the two utility relocation contracts and the tunnels contract. Work is proceeding on the \$844 million stations and systems contract where the contractor, Tutor Perini, will construct the three underground stations, the surface station, and the overall systems for the project. Excavation is well underway at all three underground stations and work is proceeding at the surface station. As of the end of December 2016, expenditures on this contract reached \$448.2 million, or 51% of the total contract value. As of the same date, the project had paid \$180.92 million to Small Business Enterprises, which represents 21% of the total expenditures. The project budget remains at \$1.578 million, which is the baseline established in 2010. The project contingency stands at \$78.49 million, \$18.49 million over the Federal Transit Administration's recommended contingency level of \$60 million at this point of the project. Revenue service is forecasted for September 2019, nine months later than the baseline, though the San Francisco Municipal Transportation Agency and the contractor are working on recovery plans.

BACKGROUND

The San Francisco Municipal Transportation Agency's (SFMTA's) Central Subway project will extend the T-Third light rail line (also known as the Initial Operating Segment of the Third Street Light Rail Project) north from King Street along Fourth Street, entering a tunnel north of Bryant Street, crossing beneath Market Street, and running under Stockton Street to Stockton and Washington Streets. A surface station will be provided near Brannan Street, and underground stations will be located at Yerba Buena/Moscone Center, Union Square, and Chinatown. The Central Subway is one of the signature projects in the Prop K Expenditure Plan.

On March 30, 2010, through Resolution 10-51, the Board adopted a Baseline Budget, Schedule and Funding Plan for the Central Subway project and subsequently adopted an amended funding plan on February 15, 2011, through Resolution 11-44. On October 11, 2012 the SFMTA received the Full Funding Grant Agreement from the Federal Transit Administration (FTA), which represents the federal government's commitment of \$942 million in New Starts funds to the project. Construction started in January 2010.

DISCUSSION

The purpose of this memorandum is to provide an update on the Central Subway project.

Budget: The Baseline Budget for the Central Subway project is \$1.578 billion in year-of-expenditure dollars. As of December 31, 2016, the project had incurred \$1.017 billion in costs against \$1.328 billion in allocations. The expenditures reflect 64.42% of the overall Baseline Budget. The current cost Forecast-at-Completion remains unchanged at \$1.578 billion. The project contingency stands at \$78.49 million, \$18.49 million over the FTA recommended contingency level of \$60 million at this point of the project.

| Central Subway Baseline Budget (in millions) | |
|---|------------------|
| Preliminary Engineering | \$46.2 |
| Final Design | \$83.7 |
| Construction | \$1,080.6 |
| Real Estate | \$37.4 |
| Vehicles | \$26.4 |
| Project Management | \$206.4 |
| Other* | \$22.9 |
| Unallocated Contingency | \$74.4 |
| Approved Baseline Budget Total | \$1,578.3 |
| Forecast Cost at Completion | \$1,578.3 |

*Other includes legal, permits, review fees, survey, testing, investigation, inspection, and startup

Funding: The funding plan for the project is depicted in the table below and in a more detailed format in Attachment 1. All funding sources are allocated, with the exception of about \$173 million in Federal New Starts funds, which are committed to the project by the FTA, but subject to annual appropriations by Congress.

The funding plan includes \$88.0 million in State Regional Improvement Program (RIP) funds, which were committed by the Transportation Authority to the project years ago. As reported in prior updates, most of this amount (\$75.5 million) is unlikely to be available in time to meet the project's cash flow needs.

The Transportation Authority and the SFMTA have long recognized that the RIP is a very erratic source of funding and one that has been chronically under-funded for more than a decade. Thus, we continue to support the SFMTA in the identification of alternate fund sources that can meet the project's cash flow needs. The Transportation Authority will uphold its RIP commitment by programming those funds to other eligible SFMTA RIP projects as the funds become available.

| Central Subway Funding Plan by Source (in millions) | |
|--|------------------|
| Federal 5309 New Starts Program | \$942.2 |
| Federal Congestion Mitigation & Air Quality Improvement Program (CMAQ) | \$41.0 |
| State Prop 1B – SFMTA | \$225.3 |
| State Regional Improvement Program/Other Local | \$88.0 |
| State Prop 1B – MTC | \$82.5 |
| State Prop 1A High-Speed Rail Connectivity | \$61.3 |
| State Traffic Congestion Relief Program (TCRP) | \$14.0 |
| Local Prop K Sales Tax | \$124.0 |
| Total Funding | \$1,578.3 |

Schedule: As shown below, revenue service on the Central Subway is forecasted to commence on September 2019, nine months later than the Baseline schedule. Although there are various reasons for the delay, a good portion is due to the contractor’s difficulties in meeting its anticipated production rates at the Chinatown Station. The contractor is required to implement a recovery schedule to put the project back on schedule. To that effect the contractor has implemented more work shifts and is replacing some of the current equipment with more efficient ones. The SFMTA is performing a schedule re-evaluation, utilizing an updated contract schedule. Other recovery options are being implemented in key areas as work proceeds. The SFMTA continues to meet with the contractor to discuss all schedule concerns and comments. The controlling critical (longest) path currently runs through the excavation and construction of the Chinatown Station, followed by Surface Station and Systems construction and, finally, commissioning and pre-revenue activities.

| Central Subway Construction Milestones | |
|--|--------|
| Construction Start | Jan-10 |
| Start tunnel boring with tunnel boring machine (TBM) | May-13 |
| Tunnels substantial completion | Apr-15 |
| Start Stations and Systems contract | Jun-13 |
| Complete Yerba Buena/Moscone Center Station | Mar-19 |
| Complete Chinatown Station | Mar-19 |

| | |
|---|--------|
| Complete Union Square/Market Street Station | Mar-19 |
| Completion of Stations and Systems | Jun-19 |
| Startup and Commissioning begins | Mar-19 |
| Revenue service | Sep-19 |

Status: The project is being delivered in four construction packages, all of which have been awarded: Utility Relocation 1, Utility Relocation 2, Tunnels, and Stations and Systems. Both Utility Relocation contracts and the \$241.29 Tunnels contract have been completed. Work is underway on the Stations and Systems contract, where expenditures have reached \$448,222,878 against a contract value of \$844,494,796, for 51% of the total. This is the largest single construction contract ever awarded by the SFMTA.

Tutor Perini, the contractor for the Stations and Systems contract, is proceeding at all four station locations. At the Chinatown Station, the headhouse has been mostly excavated and mining of the station cavern is underway. At the Union square station, work continues in excavation and shoring of the station box and at the station headhouse on the Union Square garage. Meanwhile, at the Yerba Buena/Moscone Center station, excavation has reached the invert and the tunnel liners have been removed within the station box. For the surface station at 4th and Brannan Streets, work has been completed on the special trackwork at 4th and King Streets, the 78 inch sewer reconstruction and the 48 inch sewer installation. Ductbank and pavement renovation is also underway.

Disadvantaged Business Enterprise/Small Business Enterprise (SBE) Program: The Central Subway's SBE program is based on contract-specific goals ranging from 6% to 30%, depending on the type of work and availability of SBEs. As of December 31, 2016, the project has paid out \$180.92 million to SBEs, which represents 21% of the total expenditures. For its part, the \$843 million Stations and Systems contract has a goal of 20%, which represents \$169 million to SBEs. Actual payments to SBEs under this contract have reached \$88.39 million, or 19.7% of the total. A detailed SBE report is included as Attachment 2.

Challenges: Although all funding for the project is identified, there is a need for ongoing advocacy to ensure that annual appropriations of the remaining \$173 million in New Starts funds remain at the levels needed to meet project cash flow needs. Recent appropriations have been keeping pace with projected needs. Another funding concern is the need to secure an alternate funding source for the remaining \$75.5 million in RIP funds which almost certainly won't be available when required to meet the project's cash flow needs given projected state funding levels. As noted above, Transportation Authority and SFMTA staffs continue to work together on this topic.

Although the official schedule for revenue service remains unchanged, the forecasted completion is nine months later than the Baseline. Despite ground conditions being as anticipated in the Chinatown cavern, the contractor's productivity has been lower than planned. The SFMTA has held two schedule workshops with the participation of FTA and Transportation authority staff, to discuss strategies to improve the schedule. The contractor has implemented mitigation efforts, in an effort to recover lost time but continues to fall behind. The SFMTA is working on identifying schedule recovery options, such as overlapping activities that can take place concurrently, and re-organize the testing and startup schedule. Even with all the efforts, the contractor may be unable to make up the time. Should that be the case, the contract stipulates liquidated damages at the rate of \$50,000 per day.

ALTERNATIVES

None. This is an information item.

FINANCIAL IMPACTS

None. This is an information item.

RECOMMENDATION

None. This is an information item.

Attachments (2):

1. Central Subway Funding Plan
2. Central Subway SBE Participation

Attachment 1
Central Subway Full Funding Plan
Updated: February 2017

| Source ² | Type | Status | Project Phases ¹ | | | | Total by Status | TOTAL |
|--------------------------------------|---------------|-------------------|-----------------------------|----------------------|---------------------|------------------------|------------------------|------------------------|
| | | | PE/ENV | PS&E | ROW | CON | | |
| 5309 New Starts | Federal | Allocated | \$36,310,980 | \$47,690,426 | \$0 | \$685,198,594 | \$769,200,000 | \$942,200,000 |
| | | Programmed | \$0 | \$0 | \$0 | \$173,000,000 | \$173,000,000 | |
| | | Planned | \$0 | \$0 | \$0 | \$0 | \$0 | |
| CMAQ ³ | Federal | Allocated | \$0 | \$14,328,445 | \$0 | \$26,696,555 | \$41,025,000 | \$41,025,000 |
| | | Programmed | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | | Planned | \$0 | \$0 | \$0 | \$0 | \$0 | |
| Prop 1A High Speed Rail Connectivity | State | Allocated | \$0 | \$0 | \$0 | \$61,308,000 | \$61,308,000 | \$61,308,000 |
| | | Programmed | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | | Planned | \$0 | \$0 | \$0 | \$0 | \$0 | |
| Prop 1B- MTC | State | Allocated | \$0 | \$14,044,096 | \$10,580,906 | \$63,270,813 | \$87,895,815 | \$87,895,815 |
| | | Programmed | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | | Planned | \$0 | \$0 | \$0 | \$0 | \$0 | |
| Prop 1B-SFMTA | State | Allocated | \$0 | \$1,200,000 | \$24,196,508 | \$194,499,677 | \$219,896,185 | \$219,896,185 |
| | | Programmed | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | | Planned | \$0 | \$0 | \$0 | \$0 | \$0 | |
| RIP-SF/Other ^{3,4} | State | Allocated | \$0 | \$0 | \$0 | \$12,498,000 | \$12,498,000 | \$88,000,000 |
| | | Programmed | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | | Planned | \$0 | \$0 | \$0 | \$75,502,000 | \$75,502,000 | |
| TCRP | State | Allocated | \$5,000,000 | \$9,000,000 | \$0 | \$0 | \$14,000,000 | \$14,000,000 |
| | | Programmed | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | | Planned | \$0 | \$0 | \$0 | \$0 | \$0 | |
| Prop K | Local | Allocated | \$4,142,132 | \$27,418,669 | \$0 | \$92,414,199 | \$123,975,000 | \$123,975,000 |
| | | Programmed | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | | Planned | \$0 | \$0 | \$0 | \$0 | \$0 | |
| | Totals | Allocated | \$45,453,112 | \$113,681,636 | \$34,777,414 | \$1,135,885,838 | \$1,329,798,000 | \$1,578,300,000 |
| | | Programmed | \$0 | \$0 | \$0 | \$173,000,000 | \$173,000,000 | |
| | | Planned | \$0 | \$0 | \$0 | \$75,502,000 | \$75,502,000 | |
| | | | \$45,453,112 | \$113,681,636 | \$34,777,414 | \$1,384,387,838 | \$1,578,300,000 | |

¹ Acronyms used for project phases include: PE/ENV - Preliminary Engineering/Environmental Documentation, PS&E - Plans, Specifications & Estimates or Final Design, ROW - Right of Way, CON - Construction. For the purposes of this table, construction includes procurement (e.g. vehicles).

² Acronyms used in this column include: CMAQ - Congestion Mitigation and Air Quality Improvement Program, MTC - Metropolitan Transportation Commission, RIP - Regional Improvement Program, SFMTA - San Francisco Municipal Transportation Agency, and TCRP - Traffic Congestion Relief Program.

Central Subway Full Funding Plan
Updated: February 2017

³ In January 2008, the Transportation Authority working with MTC and SFMTA brokered a fund swap of \$4 million in FY 2008/09 RIP funds programmed to Central Subway for an equivalent amount of CMAQ funds for the subject project. The swap gave SFMTA quicker access to the funds than would have been possible with the delay in available RIP funds. The \$4 million in CMAQ funds count toward the Transportation Authority's RIP commitment to the project. The RIP funds helped MTC address eligibility issues for a regional project. In November 2008, the Transportation Authority approved a swap that traded \$2,025,000 in FY 2008/09 Prop K funds for an equivalent amount of CMAQ funds to help SFMTA meet timely use of funds deadlines for three separate Regional Bike and Pedestrian Program (RBPP) projects (Res. 09-25), without any negative impacts to the Central Subway Program.

⁴ In November 2005, through Resolution 06-30, the Transportation Authority committed to prioritizing its RIP funds to four signature Prop K projects, including Central Subway. This commitment stems from the 2001 Regional Transportation Plan. In March 2012, through Resolution 12-44, the Transportation Authority Board made Central Subway the second highest priority after Presidio Parkway (required by the State) for future RIP funding cycles until those commitments are fulfilled. The Presidio Parkway RIP commitment was fulfilled with adoption of the 2012 State Transportation Improvement Program, making Central Subway the highest priority for RIP funds. The Transportation Authority and SFMTA are working together to ensure that alternate funding is available to the project, given that the remaining RIP funds are not likely to be available in time to meet the project's cash flow needs.



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PROGRAM SUPPORT CONTRACTS – SBE PARTICIPATION

Appendix E presents the Central Subway Program Small Business Enterprise or SBE goals and the actual SBE participation achieved to date – as of December 31, 2016.¹

CS Program SBE Summary Table for Professional Services and Construction Contracts

The summary compares the dollar value of the Base Contracts, the SBE Contract Goals, the percent and dollar value expended to date and the SBE actual participation to date.

Appendix E - Monthly Progress Report - Reported Quarterly in 2016
CS Program SBE Summary Table for Professional Services and Construction Contracts

| Contract No. | Contractor | Services/Segment | A | B | C | D | E | F | G | |
|--|------------|--------------------|--|-------------------------|-------------------------------------|--------------------|----------------------------|-------------------------------|-----------------------------------|--------|
| | | | Contract Amount | SFMTA SBE Contract Goal | Contract Expenditure to Date (Est.) | SBE Actual to Date | SBE Contract \$ = A * B | SBE Amount to Date = C * D | Contractor's SBE Goal (in Bid) | |
| A Project Professional Services Contracts | | | millions | | millions | | millions | millions | | |
| 1 | 149 | CS Partnership | Project Management | \$85.14 | 30% | \$58.54 | 39.7% | \$25.54 | \$23.25 | 31.4% |
| 2 | 156 | Hill International | Project Controls Task 1 | \$17.11 | 26% | \$9.60 | 28.9% | \$4.45 | \$2.77 | 26.0% |
| 3 | 155-1 | PE Telemon | Tunnels Design | \$7.94 | 30% | \$7.89 | 29.7% | \$2.38 | \$2.34 | 31.8% |
| 4 | 155-2 | CS Design Group | Stations Design | \$36.52 | 30% | \$35.21 | 37.5% | \$10.96 | \$13.20 | 36.4% |
| 5 | 155-3 | HNTB, Inc. - B&C | Systems, Track & Surface Station Design | \$17.23 | 30% | \$25.83 | 26.8% | \$5.17 | \$6.92 | 30.0% |
| Subtotal Professional Services | | | | \$163.94 | | \$137.07 | | \$48.50 | \$48.49 | |
| B Project Construction Contracts | | | millions | | millions | | millions | millions | | |
| 1 | 1250 | Synergy Inc | Utility Relocation 1 | \$11.97 | 20% | \$11.97 | 97.2% | \$2.39 | \$11.63 | 96.4% |
| 2 | 1251 | Synergy Inc | Utility Relocation 2 | \$20.79 | 20% | \$20.79 | 87.4% | \$4.16 | \$18.18 | 94.9% |
| 3 | 1252 | BH | Tunnels and Portal - in Construction | \$241.29 | 6% | \$24.88 | 5.8% | \$14.48 | \$13.58 | 6.1% |
| 4 | 1277 | MH Construction | Pagoda Demolition | \$0.65 | 100% | \$0.65 | 100.0% | \$0.65 | \$0.65 | 100.0% |
| 5 | 1300 | Tutor-Perini | Stations/Track/Systems - in Construction | \$42.94 | 20% | \$448.22 | 19.7% | \$168.59 | \$88.39 | 25.5% |
| Subtotal Construction Contracts | | | | \$1,117.64 | | \$716.52 | | \$190.27 | \$132.43 | |
| Contract | Contractor | Services/Segment | Base Contract | SFMTA Goal | Expenditures | SBE Actual | = A * B | = C * D | Bid Goal | |
| | | | A | B | C | D | E | F | G | |

SBE Summary Table Notes and Sources:

- a) Column A is the base contract amount awarded. Column B is the Agency SBE goal percent for each contract awarded.

The SFMTA SBE Contract Goals are also on the Central Subway web site under the listing of on-going contracts – see “**Closed and Awarded Contracts**” at this link: <http://centralsubwaysf.com/content/closed-and-awarded-contracts>

- b) Column C shows each contract’s current amount expended to date (estimated) including accruals. Column D is the actual SBE percent level of each contract based on payments to date.

Column E is the expected SBE dollar amount when the contract amount is completed and the SFMTA SBE goal achieved using this calculation: Columns A * B = Column E, the SBE Expected \$ Amount.

Column F is the actual SBE dollar amount out of the total contract expenditure to date:

Columns C * D = Column F, the SBE Expended \$ Amount.

The source of the SBE actual percent to date and dollar amounts are Progress Payment