

Los Angeles County
Metropolitan Transportation Authority

Regional Connector Transit Project

East Los Angeles ↔ Santa Monica

Azusa ↔ Long Beach



Metro[®]

REGIONAL CONNECTOR TRANSIT PROJECT

MONTHLY PROJECT STATUS REPORT

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August 2018

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PROJECT OVERVIEW

Project Background

The Regional Connector Transit Project (Project) will link the terminus of the Blue and Expo Lines at 7th/Metro Center to the Gold Line near the current Little Tokyo/Arts District Station through a new 1.9-mile underground alignment in downtown Los Angeles. The alignment includes three underground stations: Grand Av Arts/Bunker Hill; Historic Broadway; and Little Tokyo/Arts District.

From the existing 7th Street/Metro Center Station, the Project alignment will extend north under Flower Street to 2nd Street. It will then proceed east underneath 2nd Street to just west of Central Avenue where the alignment will veer northeast under privately-held property to the new Little Tokyo/Arts District Station at 1st and Central. The alignment continues briefly eastward through a Wye Junction (Wye) constructed beneath the 1st and Alameda intersection. To the north of the Wye at Temple and Alameda, and to the east of the Wye at 1st and Vignes, trains will connect with the Gold Line by rising to the surface through two new transition portals heading north to Pasadena, and east to East Los Angeles.



Upon completion, the Project will in effect facilitate regional light rail service along a 49-mile north-south route – Azusa to Long Beach, and a 23-mile east-west route – East LA to Santa Monica.

Passenger forecasts in 2035, as a result of the improved service, indicate 90,000 daily transit trips will occur through the 1.9-mile downtown trunk, including 17,000 new riders.

The above Project configuration is based on years of planning and environmental work that is reflected in the following milestones:

- Metro Board approval of Alternative Analysis – January 2009
- Initiation of Draft EIS/EIR – February 2009
- Initiation of Preliminary Engineering (PE) – January 2011
- Metro Board certification of Final EIS/EIR – April 2012
- FTA issuance of Record of Decision – June 2012
- PE and Advanced PE complete – March 2013
- FTA award of Full Funding Grant Agreement – February 2014.

Major Procurements

Utility Relocation: Advanced Utility Relocation Contract, C0981R, was awarded to Pulice Construction, Inc. in January 2014 and the Notice to Proceed (NTP) issued on February 18, 2014. Contract C0981R was terminated for convenience on April 14, 2015 and remaining AUR work has been transferred to the C0980 Design/Build (D/B) Contractor.

Guideway & Systems Contract: The Board authorized to solicit a major D/B contract, C0980, in August 2011. A contract was awarded on April 24, 2014 to Regional Connector Constructors (RCC), a joint venture of Skanska USA Civil West California District, Inc. and Traylor Brothers, Inc. in the amount of \$927,226,995. NTP was issued July 7, 2014. The final engineering and design for the joint venture is performed by Mott McDonald.

Vehicles: Metro is procuring four (4) Light Rail Vehicles (LRVs) for the Project. The vehicles will be built and delivered by Kinkisharyo International, LLC under Option 2 of Contract P3010. Delivery and acceptance of four LRVs is anticipated no later than February 2020.

Rail Operations Center (ROC): The existing functional operations at the ROC are being expanded to accommodate the central control functions associated with five new rail lines to include Regional Connector. The Project is contributing \$4.07M towards this expansion which is scheduled to be completed by June 2021.

Fare Collection: Procurement of UFS and TVM equipment was completed in January 2018 with award to Cubic Corporation. Metro is coordinating with RCC for installation and testing schedules, which are currently expected to begin in winter 2020. The scope addition of fare transfer equipment in the three Regional Connector stations was made in September 2017.

Program Management

The RCC contract is being managed by a team of Metro and consultant personnel jointly located at the Integrated Project Management Office (IPMO). The Connector Partnership, a joint venture between AECOM, Inc. and WSP (CPJV) provides engineering and design support services while Arcadis, Inc., provides construction management support services. An overview of staffing is provided under the Staffing Section of this report. The on-site program management team is also supported by Metro Headquarters resources to include, but not limited to, engineering, risk management, environmental, quality management, operations and creative services departments.

Project Schedule and Budget: The Revenue Service Date (RSD) is planned for *Winter 2022*.

In January 2017, the Metro Board revised the Life of Project (LOP) Budget for Regional Connector Transit Project 860228 to \$1.756 billion. The LOP budget for Concurrent Non-FFGA activities related to Project 861228 remains at \$39.9 million. Financing costs are estimated at \$14M. Forecasts remain consistent with budgets. A detailed FFGA budget forecast is included under the Project Cost Section of this report.

Funding has been secured from a variety of sources to include:

- Federal New Starts Grant
- Federal Congestion Management Air Quality and RIP Programs
- USDOT TIFIA loan proceeds
- State Proposition 1A/1B and Capital Project Loan proceeds
- City of Los Angeles
- Lease revenues.

Construction and Community Relations: The Construction and Community Relations team is tasked with promoting the Project and performing public outreach within the community to keep stakeholders informed of construction activities occurring along the Project alignment. To facilitate the communication, community leadership councils have been formed which represent geographic-based constituent groups along the Project alignment.

The Project is also engaged in social media outreach and various marketing and advertising efforts designed to keep the public informed and excited about the Project. These efforts are aimed at promoting businesses that are affected by construction. An overview of monthly activities is presented in the Construction and Community Relation Section of this report.

System Integration: The Project's integration of three separate lines, each possessing distinct system technologies, presents significant challenges for both the Project and Metro. The Project will need to coordinate the systems interface design, construction and testing while the Metro maintains revenue service on the three operating lines.

Rail Activation: The Project and Metro Operations recognize the extensive planning required in preparation for rail activation of the new regional light rail service the Project will enable through downtown Los Angeles. Associated detailed planning and scheduling efforts to optimize the extensive efforts are underway.

EXECUTIVE SUMMARY

In *August*, the Project achieved 52.1% completion based on earned value measurements for design and construction. The focus of the Project remains on completing the design facilitating critical path construction activities. Work is trending ahead of schedule as a result of successful TBM mining operations, an early start to Sequential Excavation Method (SEM) excavation, and expedited utility relocations at the 6th/Flower area. The following is an overview of current design and construction activities.

Design Status

Ninety percent (90%) of the design drawings have been completed with 13 design units issued for construction. This month, the *Grand Av Arts/Bunker Hill Station Pedestrian Bridge 100% Design Submittal* was approved. The following three design units remain outstanding:

- DU 5 – Civil B (AFC Design in Progress)
- DU 12.1 – Radio (AFC Design in Progress)
- DU 64 – Grand Av Arts/Bunker Hill Station Pedestrian Bridge (*AFC Design in progress*).

Significant design work is also proceeding on the Tribune Entrance Redesign at the Historic Broadway Station. This work has become necessary to accommodate revised loading parameters from the developer. The redesign work is a significant challenge for the designer who has been successful at keeping pace with construction requirements.

Construction Status

At the Little Tokyo/Arts District Station, excavation is continuing at the south half of the Wye and along the 1st Street Cut and Cover.

Construction continues in left, right and center drifts of the crossover cavern utilizing Sequential Excavation Method (SEM) in Historic Broadway Station. Preparation for walkway installation activities are underway in tunnels.

Meanwhile at Broadway, crews are *continuing with preparing for invert concrete* along the station box. Concurrently, work is proceeding with the foundation mat for the station entrance and overbuild elements.

At the Grand Av Arts/Bunker Hill Station, permanent structural concrete construction continues at station invert, walls, sumps, and tunnel eye.

Decking on Flower St. will be completed by September 9, 2018. The focus will then shift underground to excavation, utility protection and structural concrete operations.

Cost and Schedule Summary

Metro has received the *July* Contract Schedule Update from RCC which indicates that work is proceeding ahead of schedule. Metro is collaborating with RCC to strengthen the schedule planning effort for the final 18 months of construction to better prepare for the complex system integration and cut-overs, as well as their interface with Metro-led rail activation activities.

The critical path of the project remains the completion of the SEM mining, structural interfaces with the SEM and Historic Broadway Station, followed by track installation and systems. A summary graphic of the critical path is found on Page 13.

RCC Schedule Metrics

| | Original Contract Date/Duration | Time Extension (CD) | Current Contract Schedule | Forecast (Metro PMS) | Variance CD (Trending) |
|------------------------|--|----------------------------|----------------------------------|-----------------------------|-------------------------------|
| NTP | 7/7/14 | | | | |
| Substantial Completion | 10/22/20 | 527 | 04/01/22 | Oct. 2021 | -150 days |

Project costs continue to track within budget and projected contingency limits. To date, the design and construction changes related to base scope represent approximately 5.5% of the contract value with a potential to increase to 8%. There are no claims on the Project. Detailed cost and budget information is provided on Page 15.

Key Management Concerns

Item 1: Given the impact the Project will have on light rail operations through downtown Los Angeles and the region, the Rail Activation effort is exceedingly complex. Schedule and cost impacts are likely to surface.

Status/Action: An Activation Workshop was held at the IPMO on April 28, 2018 with representatives from the Project and multiple operating departments within Metro. The purpose of the meeting was to receive an update on current initiatives and agree on a methodology for arriving at a comprehensive bottoms-up schedule. *After thorough research several draft start-up schedules have been prepared for review by stakeholders. The schedules portray options in the Rail Activation/Start-up process that may be exercised. In all cases, due to training requirements, that far out-pace the norm, the Rail Activation process is shown extended from original plans. Further development is anticipated over the coming months.*

Item 2: Managing and responding to stakeholder needs during cut-and-cover activities along Flower Street has the potential to impact both schedule and budget.

Status/Action: The Project is engaged in active stakeholder outreach and construction impact mitigation. The Project continues to work closely with the contractor to ensure concerns are addressed and that MMRP requirements are fully complied with.

Item 3: Addressing City comments on final street restoration plans has resulted in additional design efforts and Project costs.

Status/Action: The Project is proceeding with incorporating City requested changes into the final design. The first of two final AFC *submittals was approved by all parties involved. In finalizing the second AFC submittal*, Metro requested an informal comment resolution meeting with the City on any new comments prior to their formal response. The second submittal is anticipated in *December 2018*.

Item 4: A differing site condition (DSC) within the SEM cavern guideway has been reported. The DSC is believed to be steel remnants from recent construction along 2nd Street. The extent of the DSC and its impact to safety, means and methods, schedule or cost are not yet known. The SEM cavern is on the critical path so related delays could prove significant.

Status/Action: Three instances of steel remnants were encountered early-on in the excavation. Cumulative delays totaled 28 hours; contractual recognition of delays is underway. No further encounters are anticipated. *Metro is addressing RCC's request for change to close this item.*

Item 5: Agreement and closure on the property acquisition and related mitigations at •City of Los Angeles Department of Water and Power's (LADWP) Duco Yard have been delayed; impacts to early construction planning, surveying and logistical imperatives may result.

Status/Action: Agreement *of the terms and conditions* on the property *acquisition* and mitigations has been reached. *This progress indicates access to Metro/RCC for survey and onsite planning to proceed in support of the schedule.*

Item 6: Design comments from the over-build developer at the Historic Broadway Station has led to design revisions with potential cost impacts.

Status/Action: Metro/RCC are collaborating closely with the developer to finalize design elements necessary to keep work in the station entrance area moving forward uninterrupted. *Additional efforts have been defined to complete the outstanding design elements. RCC has been issued a CN to authorize these efforts. Once the final package is completed (outlook December 2018) an assessment of total construction costs will be made. The assessment will identify cost increases in construction activities, and guide negotiations for additional funding from the overbuild project owners.*

Project Construction Photos



Excavation of SEM Cavern upper center drift



Excavation for deck beams on Flower St



Welding deck beams on Flower St



DWP onsite to patch duct bank at Wye and 1st Street

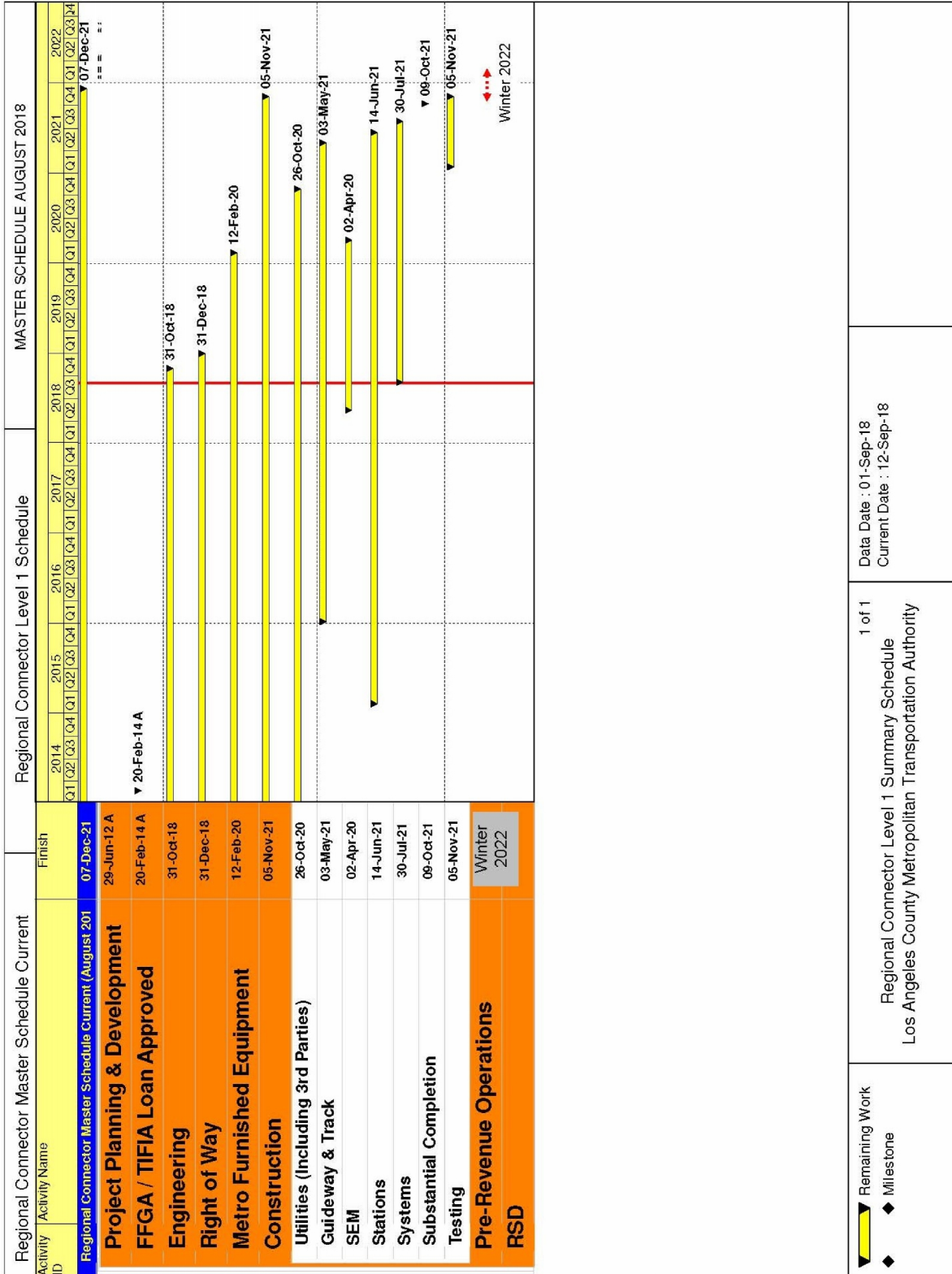


Historic Broadway Station entrance structure pour

PROJECT UPDATE

PROJECT SCHEDULE

Project Summary Schedule

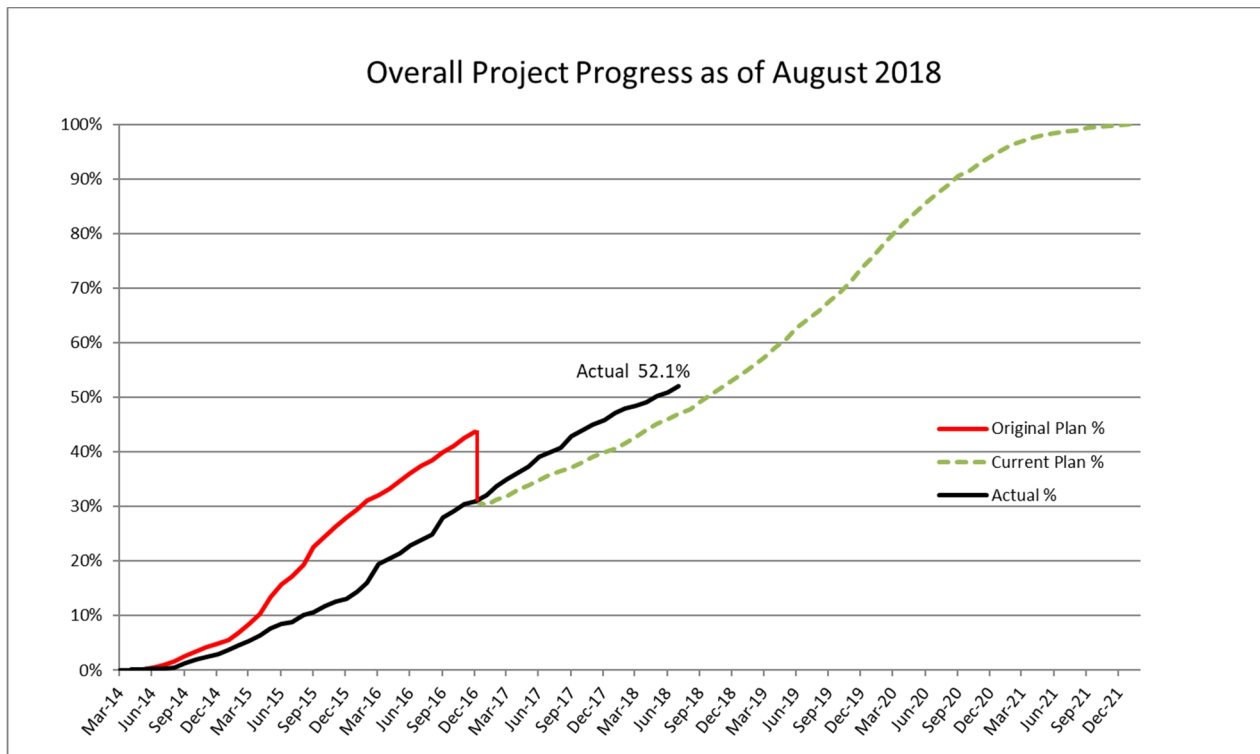


Progress Summary

| | Status | Change from Last Period | Comment |
|---|-------------|-------------------------|---------------------------------|
| Forecast Revenue Service | Winter 2022 | | |
| Proposed TIFIA Revenue Service | 2/25/2023 | None | |
| Proposed FFGA Revenue Service | 2/25/2023 | None | |
| Final Design Progress: | | | |
| Contract C0980 | 99.8% | 0% | Not impacting the critical path |
| Construction Contracts Progress: | | | |
| Contract C0981R & C0980 | 49.0% | 1.3% | |













Note: Construction Progress excludes of General Requirements, Construction and Design Mobilization, Final Design and Provisional Sum costs (Schedule C). Progress values include executed modifications and change orders.









Planned vs. Actual Progress



Current plan reflects median of early and late finish dates.

Key Milestone Six-Month Look Ahead

| | Milestone Date | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 |
|--|----------------|---|---|---|---|---|---|
| Complete excavation of Flower North (Between 4th and 5th) | 08/10/18 A |  | | | | | |
| Completed entrance structure invert of Historic Broadway Station | 08/30/18 A |  | | | | | |
| Complete temporary decking at 6th/Flower intersection | 09/09/18 | |  | | | | |
| Complete east hammer head invert at Grand Av Arts/Bunker Hill Station | 09/10/18 | |  | | | | |
| Complete SEM left drift excavation | 10/16/18 | | |  | | | |
| Complete tunnel invert concrete | 10/23/18 | | |  | | | |
| Complete WYE Phase 2 excavation | 11/01/18 | | | |  | | |
| Complete station invert of Historic Broadway Station (West) | 11/07/18 | | | |  | | |
| Initiate concourse level deck at Grand Av Arts/Bunker Hill Station | 12/04/18 | | | | |  | |
| Complete SEM right drift excavation | 12/13/18 | | | | |  | |
| Complete platform level exterior walls at Grand Av Arts/Bunker Hill Station (West) | 01/09/19 | | | | | |  |
| Complete SEM center drift excavation | 01/29/19 | | | | | |  |

 MTA Staff
  MTA Board Action
  FTA (Federal Transit Administration)
  Utility Company
 Other Agencies
  Contractors
  Design Consultant
  C0980 D/B Contractor
 "A" following date is actual and completed
 * New

Major Equipment Delivery

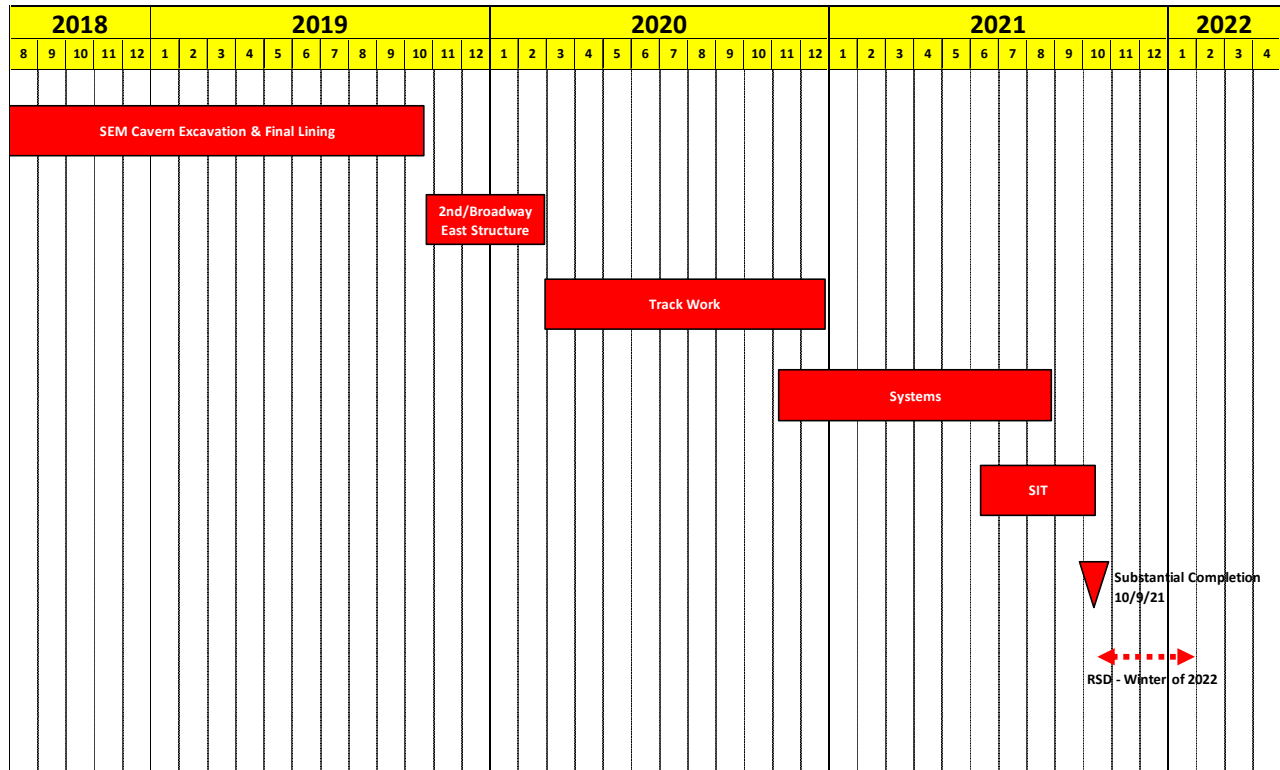
Metro Supplied Equipment

| Equipment | Initial Procurement | Scheduled Delivery | Scheduled Installation |
|-------------------------|----------------------------|----------------------------|-------------------------------|
| LRT Vehicles | (NTP) 08/20/2012 | Option 2 02/12/2020 | N/A |
| Ticket Vending Machines | ~ 01/30/2018 | 11/01/2018 (warehoused) | 08/19/2020 ~03/01/2021 |

Design/Builder Equipment Delivery Requirements

| Activity Name | Early Finish | Need Date |
|---|---------------------|------------------|
| FAB/DELIV ELEVATORS - 2ND/HOPE | 23-Aug-18 | 26-Aug-21 |
| FAB/DELIV ESCALATORS - 2ND/HOPE | 28-Aug-18 | 2-Mar-21 |
| FAB/DELIV TRAIN CONTROL EQUIPMENT | 31-Jan-19 | 1-Feb-21 |
| FAB/DELIV 2ND/BROADWAY TPSS | 5-Mar-19 | 10-Jan-20 |
| PROCURE NEW 115RE RAIL - HIGH STRENGTH RAIL | 24-Oct-19 | 20-May-20 |
| PROCURE RAIL – JOBWIDE | 24-Oct-19 | 20-May-20 |
| PROCURE SPECIAL TRACK – JOBWIDE | 24-Oct-19 | 25-Jun-20 |
| PROCURE NEW 115RE RAIL - STANDARD RAIL | 24-Oct-19 | 20-May-20 |
| FAB/DELIV EMERGENCY VENTILLATION FANS - CENTRAL (4) | 11-Nov-19 | 16-Sep-20 |
| FAB/DELIV GLAZING SPIDERS - ALL STATIONS | 18-Dec-19 | 19-May-21 |
| PROCURE BALLASTED TRACK - NORTH ALAMEDA LEG | 23-Dec-19 | 15-Sep-21 |
| FAB/DELIV EMERGENCY BOOSTER FANS (12) | 6-Feb-20 | 26-Aug-21 |

Critical Path (C0980)



The critical path in *August* remained the same as portrayed in *July*.

SEM excavation is the current critical path operation underway; due to several production-related difficulties over the course of the month, four days were lost in *August*.

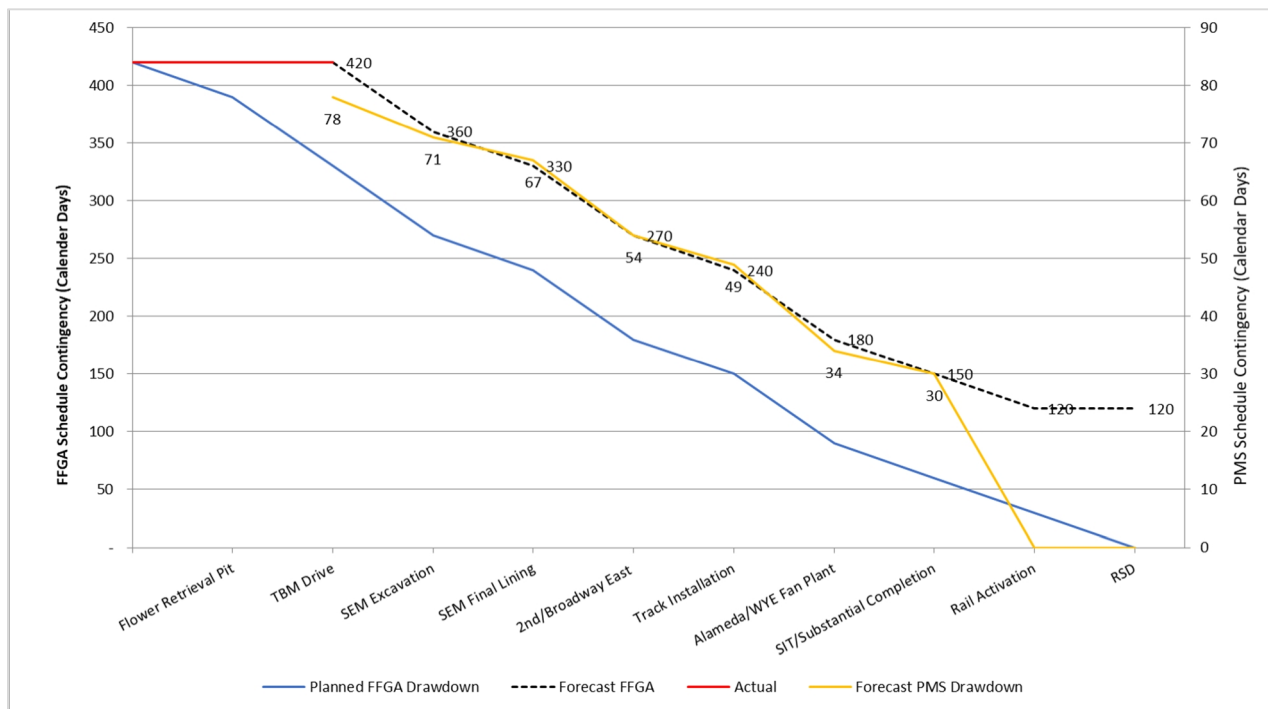
Despite the *August* schedule loss above, the SEM operation is proceeding with a positive trend in overall production to include *three* headings in excavation underway in *August*.

Project Schedule Contingency Drawdown Analysis

The project schedule contingency drawdown model provides a dual-axis perspective based upon the proposed FFGA RSD of February 2023 and Metro’s Project Master Schedule (PMS) forecast RSD of Winter 2022.

The introduction of the PMS model axis reflects a proportional distribution of available float relative to the FFGA model. With the early start of the critical SEM excavation, schedule contingency has been bolstered.

With regard to the FFGA RSD, schedule float of fourteen-months has been maintained. This steady performance was recorded despite challenges through the boring of both tunnels – which were completed successfully in January 2018.



PROJECT COST

Project Cost Analysis – 860228

REGIONAL CONNECTOR TRANSIT CORRIDOR PROJECT
COST REPORT
DOLLARS IN THOUSANDS

| SCC CODE | | FFGA BUDGET | ORIGINAL BUDGET | CURRENT BUDGET | | COMMITMENTS | | EXPENDITURES | | CURRENT FORECAST | | BUDGET/ FORECAST VARIANCE |
|------------------------------|--|-------------|-----------------|----------------|-----------|-------------|-----------|--------------|---------|------------------|-----------|---------------------------|
| | | | | PERIOD | TO DATE | PERIOD | TO DATE | PERIOD | TO DATE | PERIOD | TO DATE | |
| 10 | GUIDEWAYS & TRACK ELEMENTS | 280,622 | 204,691 | 0 | 249,281 | 0 | 247,316 | 2,327 | 151,353 | -2,844 | 251,578 | 2,297 |
| 20 | STATIONS, STOPS, TERMINALS, INTERMODAL | 354,268 | 219,477 | 0 | 229,919 | 0 | 229,912 | 694 | 56,814 | 0 | 230,110 | 192 |
| 30 | SUPPORT FACILITIES: YARDS, SHOPS, ADMIN, BLDGS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | SITWORK & SPECIAL CONDITIONS | 141,785 | 422,453 | 0 | 598,417 | 1,065 | 575,645 | 3,774 | 429,951 | 158 | 621,377 | 22,960 |
| 50 | SYSTEMS | 69,667 | 73,848 | 0 | 73,424 | -10 | 66,823 | 2,873 | 15,799 | 91 | 75,147 | 1,722 |
| | CONSTRUCTION SUBTOTAL (10-50) | 846,343 | 920,468 | 0 | 1,151,041 | 1,055 | 1,119,696 | 9,667 | 653,916 | -2,595 | 1,178,213 | 27,172 |
| 60 | ROW, LAND, EXISTING IMPROVEMENTS | 115,889 | 74,208 | 0 | 92,742 | 225 | 52,470 | 249 | 52,202 | 0 | 76,410 | -16,331 |
| 70 | VEHICLES | 16,275 | 16,275 | 0 | 16,275 | 0 | 16,275 | 0 | 1,678 | 0 | 16,275 | 0 |
| 80 | PROFESSIONAL SERVICES | 261,455 | 257,973 | 0 | 379,338 | -442 | 300,199 | 1,053 | 263,559 | 2,477 | 389,627 | 10,290 |
| | SUBTOTAL (10-80) | 1,239,963 | 1,268,925 | 0 | 1,639,395 | 838 | 1,488,640 | 10,970 | 971,355 | -118 | 1,660,526 | 21,131 |
| 90 | UNALLOCATED CONTINGENCY | 135,399 | 126,892 | 0 | 89,946 | 0 | 0 | 0 | 0 | 118 | 68,815 | -21,131 |
| 100 | FINANCE CHARGES | 27,571 | 7,115 | 0 | 14,301 | 0 | 0 | 0 | 0 | 0 | 14,301 | 0 |
| | TOTAL PROJECTS 460228 & 860228 (10-100) | 1,402,932 | 1,402,932 | 0 | 1,743,642 | 838 | 1,488,640 | 10,970 | 971,355 | 0 | 1,743,642 | 0 |
| | ENVIRONMENTAL/PLANNING - 400228 | | 6,075 | 0 | 6,075 | 0 | 6,075 | 0 | 6,075 | 0 | 6,075 | 0 |
| | ENVIRONMENTAL/PLANNING - 460228 | | 18,125 | 0 | 20,425 | 0 | 20,425 | 16 | 18,977 | 0 | 20,425 | 0 |
| | TOTAL PROJECTS 400228 & 460228 (EVN/PLAN'G) | 0 | 24,200 | 0 | 26,500 | 0 | 26,500 | 16 | 25,052 | 0 | 26,500 | 0 |
| 400228, 460228, 860228 TOTAL | | 1,402,932 | 1,427,132 | 0 | 1,770,142 | 838 | 1,515,140 | 10,985 | 996,408 | 0 | 1,770,142 | 0 |

Original Budget:

The Original Budget of \$1.427 billion reflects the April 2014 Board Approved LOP Budget, plus finance costs of \$7.1 million.

Current Budget:

In January 2017, the Metro Board revised the LOP Budget for the Regional Connector Project 860228 to \$1.756 billion. Finance costs, estimated at \$14.3 million, are also reflected leading to a total of \$1.770 billion. Budgets were adjusted throughout the SCC structure reflecting revised values as of December 2016.

Commitments:

Commitments increased by \$0.8 million this period to \$1.52 billion which represents 85.6% of the Current Budget. The increase is related to RCC executed modifications, *encumbering work orders from private utilities*, Real Estate transactions and adjustments to Professional Services' *commitments*.

Expenditures:

Expenditures are cumulative through August 2018. Expenditures increased by \$11.0 million this period for costs associated with C0980 Design Build contract, Engineering Management Support, Metro Project Administration, Construction Management Support Services, Legal Services, Third Party Master Cooperative Agreements with the City of LA, Community Relations, and Environmental Consultant Services. The \$996.4 million in expenditures to date represents 56.3% of the Current Budget.

Current Forecast:

The total current forecast remains equal to the total current budget.

Project Cost Analysis – 861228

CONCURRENT NON-FFGA ACTIVITIES (861228)

PROJECT COST STATUS BY FTA SCC
 DOLLARS IN THOUSANDS

| SCC CODE | Description | ORIGINAL BUDGET | CURRENT BUDGET | | COMMITMENTS | | EXPENDITURES | | CURRENT FORECAST | | BUDGET / FORECAST VARIANCE |
|----------|--|-----------------|----------------|---------|-------------|---------|--------------|---------|------------------|---------|----------------------------|
| | | | PERIOD | TO DATE | PERIOD | TO DATE | PERIOD | TO DATE | PERIOD | TO DATE | |
| 10 | GUIDEWAYS & TRACK ELEMENTS | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | STATIONS, STOPS, TERMINALS, INTERMODAL | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | SUPPORT FACILITIES: YARDS, SHOPS, ADMIN, BLDGS | 10,480 | 0 | 10,480 | 0 | 10,480 | 0 | 0 | 0 | 10,480 | 0 |
| 40 | SITWORK & SPECIAL CONDITIONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | CONSTRUCTION SUBTOTAL (10-50) | 10,480 | 0 | 10,480 | 0 | 10,480 | 0 | 0 | 0 | 10,480 | 0 |
| 60 | ROW, LAND, EXISTING IMPROVEMENTS | 27,748 | 0 | 27,748 | 0 | 27,748 | 0 | 22,498 | 0 | 27,748 | 0 |
| 70 | VEHICLES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | PROFESSIONAL SERVICES | 650 | 0 | 650 | 0 | 650 | 0 | 313 | 0 | 650 | 0 |
| | SUBTOTAL (10-80) | 38,878 | 0 | 38,878 | 0 | 38,878 | 0 | 22,811 | 0 | 38,878 | 0 |
| 90 | UNALLOCATED CONTINGENCY | 1,113 | 0 | 1,113 | 0 | 0 | 0 | 0 | 0 | 1,113 | 0 |
| 100 | FINANCE CHARGES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TOTAL PROJECTS 861228 (10-100) | 39,991 | 0 | 39,991 | 0 | 38,878 | 0 | 22,811 | 0 | 39,991 | 0 |
| | 861228 TOTAL | 39,991 | 0 | 39,991 | 0 | 38,878 | 0 | 22,811 | 0 | 39,991 | 0 |

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 08/31/2018.

Original Budget:

The Original Budget, Current Budget, and Current Forecast reflect the Board Approved LOP Budget established April 24, 2014.

Current Budget:

There is no change to the Budget for this period.

Commitments:

Commitments reflect actions through *August* 2018.

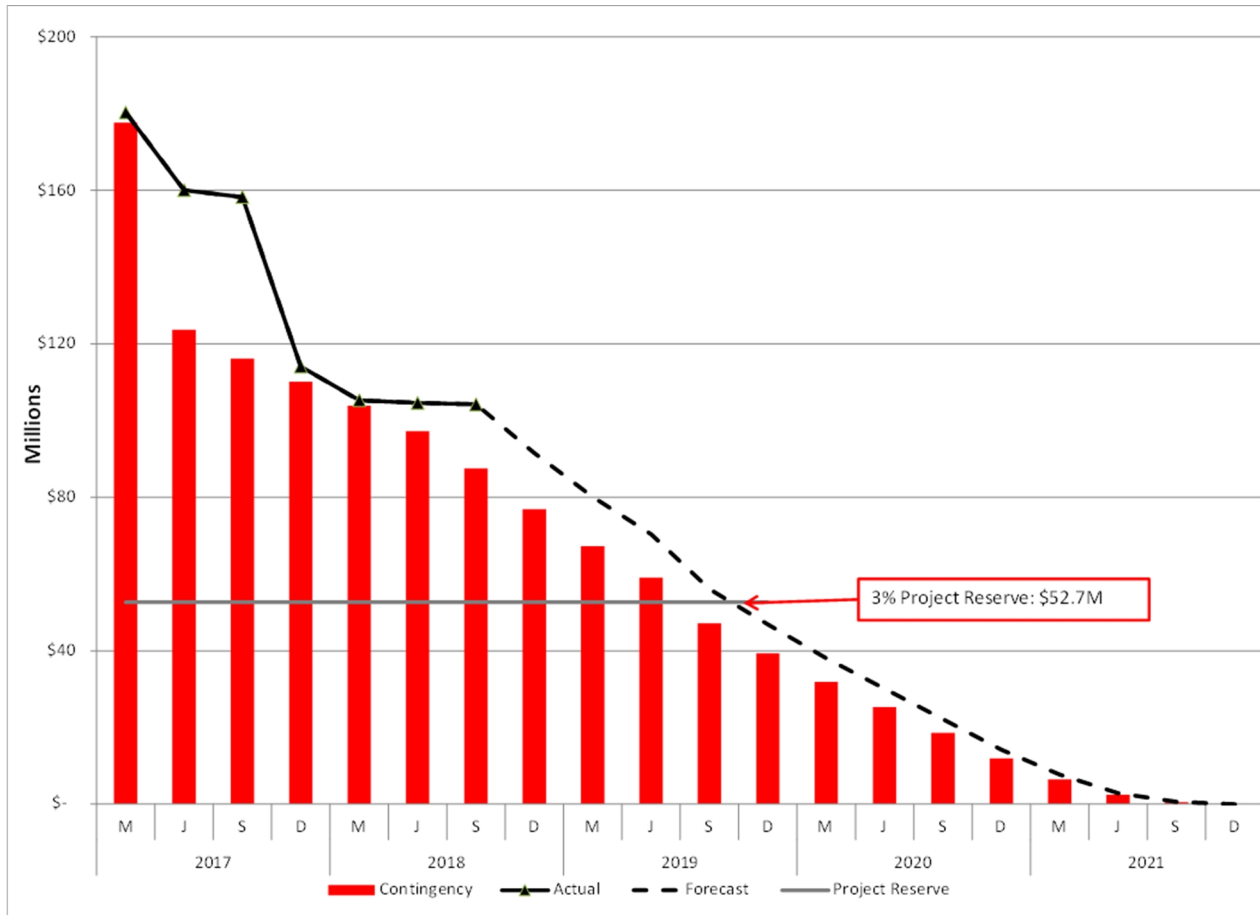
Expenditures:

Expenditures are cumulative through *August* 2018. Expenditures remain *unchanged this month*. The \$22.8 million in expenditures through *August* 2018 represents 57.0% of the Current Budget.

Current Forecast:

There was no change to the Forecast for this period.

Cost Contingency Drawdown



Cost Contingency Drawdown Analysis

In January 2017, the Metro Board revised the LOP Budget to \$1.756 billion, which included increasing the unallocated contingency to \$89 million and allocated contingency to \$92.8 million. From that action, a revised drawdown plan for unallocated contingency, correlated to anticipate risk trends, was developed to monitor and measure drawdowns moving forward.

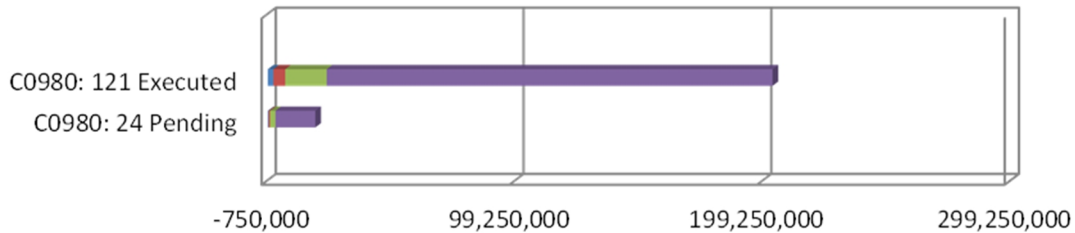
Included in the drawdown is a 3% project reserve threshold. Metro’s Board is to be notified when it becomes necessary to drawdown contingency below the project reserve threshold to cover project costs. This policy was adopted by the Metro Board in September 2012.

This month a lower than average \$56 thousand was drawn down from contingency. The remaining total project contingency (allocated and unallocated) is \$104.3 million.

| PROJECT COST CONTINGENCY | | | | | | |
|--------------------------|----------------------|-----------------|-----------------|----------------|-----------------|----------------------------------|
| DOLLARS IN THOUSANDS | | | | | | |
| | Original Contingency | LOP Contingency | Previous Period | Current Period | To-Date | Remaining Contingency (Forecast) |
| Unallocated Contingency | 124,919 | 89,946 | (21,249) | 118 | (21,131) | 68,815 |
| Allocated Contingency | 86,345 | 92,809 | (57,188) | (175) | (57,363) | 35,446 |
| Total Contingency | 211,263 | 182,754 | (78,437) | (56) | (78,494) | 104,261 |

Summary of Contract Modifications

Contract Modifications (MODs) by Cost Level



| | C0980 | | Total |
|------------------------------|--------------------|--------------------|--------------------|
| | 121 Executed | 24 Pending | |
| ■ Under \$100K | 2,256,787 | 298,000 | 2,554,787 |
| ■ \$100K to \$250K | 4,757,482 | 565,650 | 5,323,132 |
| ■ \$250K to \$1M | 16,761,970 | 2,410,800 | 19,172,770 |
| ■ Over \$1M | 180,009,237 | 16,077,878 | 196,087,115 |
| Total Contract MODs | 203,785,476 | 19,352,328 | 223,137,804 |
| Contract Award Amount | 927,226,995 | 927,226,995 | |
| % of Contract MODs | 22.0% | 2.1% | |

Note:

1. Percent of Contract MODs equals the Total Contract MODs divided by the Contract Award Amount.
2. Pending Mods are under negotiation.

One hundred and *twenty-one* changes with a total value of \$203.8 million have been executed since NTP of Contract C0980. An additional 24 changes, with a total estimated value of \$19.4 million are pending.

DISADVANTAGED BUSINESS ENTERPRISE (DBE)

As of July 2018:

| | |
|--|---------------------|
| DBE Goal – Design The percentage of funds apportioned to Design Contracts | 20% |
| Current DBE Commitment Design Total DBE Committed Dollars divided by Total Contract Value for Design | \$14.0M (22.63%) |
| Current DBE Participation Total amount paid to date to DBEs divided by the amount paid to date to Prime: | 27.10% |

Twelve (12) Design DBE sub-consultants have been identified to date.

| | |
|---|-----------------|
| DBE Goal – Construction The percentage of funds apportioned to Construction Contracts | 18% |
| Current DBE Commitment Construction Contract commitment divided by current contract value for Construction: | \$192M (18%) |
| Current DBE Participation Total amount paid to date to DBEs divided by the amount paid to date to Prime: | 12.97%* |

Seventy-eight (78) Construction DBE sub-contractors have been identified to date.

PROJECT LABOR AGREEMENTS (PLA)

As of July 2018:

| | |
|---|--------|
| Targeted Worker Goal Construction work to be performed by residents from Economically Disadvantaged Area in the United States | 40.00% |
| Targeted Worker Current Attainment | 58.91% |
| Apprentice Worker Goal Construction work to be performed by Apprentices | 20.00% |
| Apprentice Worker Current Attainment | 16.03% |
| Disadvantaged Worker Goal Construction work to be performed by Disadvantaged Workers who are residents of the United States | 10.00% |
| Disadvantaged Worker Current Attainment | 7.83% |

*The contractor has expressed concern about the lack of interest from the DBE community to submit bids for various construction work packages. The inability to attract qualified firms in this extremely busy market place presents a significant risk to achieving the Project's DBE construction goal.

FINANCIAL/GRANT

Status of Funds by Source

August 2018

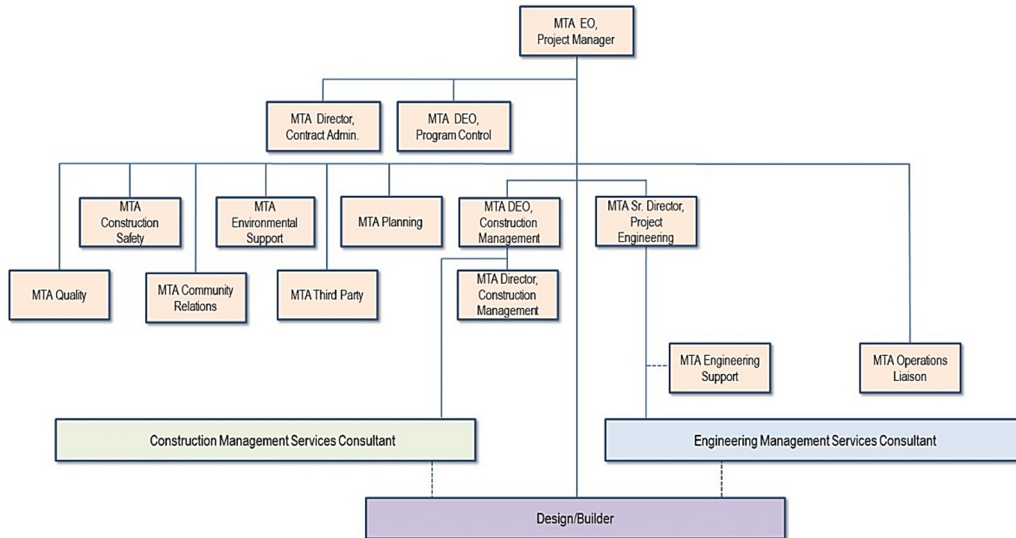
| SOURCE | (A) | (B) | (C) | (D) | (D/B) | (E) | (E/B) | (F) | (F/B) |
|--|--------------------|-------------------------|-----------------------|--------------------|------------|------------------|------------|--------------------------|------------|
| | ORIGINAL BUDGET | TOTAL FUNDS ANTICIPATED | TOTAL FUNDS AVAILABLE | COMMITMENTS | | EXPENDITURES | | BILLED TO FUNDING SOURCE | |
| | | | | \$ | % | \$ | % | \$ | % |
| FEDERAL - CMAQ | \$64.000 | \$227.000 | \$64.000 | \$128.909 | 57% | \$49.873 | 22% | \$45.403 | 20% |
| FEDERAL - SECTION 5309 NEW STARTS | \$669.900 | \$669.900 | \$365.000 | \$669.900 | 100% | \$362.223 | 54% | \$361.241 | 54% |
| FEDERAL - RIP | \$0.000 | \$14.400 | \$1.411 | \$14.400 | 100% | \$1.411 | 10% | \$1.411 | 10% |
| MEASURE R - TIFIA LOAN | \$160.000 | \$160.000 | \$117.803 | \$160.000 | 100% | \$117.759 | 74% | \$117.759 | 74% |
| STATE PROPOSITION 1A HSRB * | \$114.874 | \$114.874 | \$114.874 | \$114.874 | 100% | \$114.874 | 100% | \$114.874 | 100% |
| STATE PROPOSITION 1B PTMISEA ** | \$149.500 | \$135.163 | \$135.163 | \$135.163 | 100% | \$135.163 | 100% | \$135.163 | 100% |
| STATE STIP RIP | \$2.590 | \$2.590 | \$2.590 | \$2.590 | 100% | \$2.590 | 100% | \$2.590 | 100% |
| STATE CAPITAL PROJECT LOANS - OTHERS *** | \$132.466 | \$274.871 | \$274.871 | \$258.263 | 94% | \$194.515 | 71% | \$172.791 | 63% |
| MEASURE R | \$27.571 | \$0.000 | \$0.000 | \$0.000 | 0% | \$0.000 | 0% | \$0.000 | 0% |
| CITY OF LOS ANGELES | \$41.984 | \$41.984 | \$18.000 | \$31.041 | 74% | \$18.000 | 43% | \$18.000 | 43% |
| LEASE REVENUE | \$64.247 | \$115.058 | \$0.000 | \$0.000 | 0% | \$0.000 | 0% | \$0.000 | 0% |
| TOTAL | \$1,427.132 | \$1,755.840 | \$1,093.712 | \$1,515.140 | 86% | \$996.408 | 57% | \$969.232 | 55% |

NOTES:

1. EXPENDITURES ARE CUMULATIVE THROUGH AUGUST 31, 2018.
 2. METRO AND TRIBUNE AGREED ON REIMBURSEMENT OF \$1.6 MILLION RELATED TO 2ND/BOARDWAY OVERBUILD.
 3. ORIGINAL BUDGET BASED ON FUNDING PLAN INCLUDED IN THE APPROVED FULL FUNDING GRANT AGREEMENT
- * STATE PROPOSITION 1A HIGH SPEED RAIL BONDS
 ** STATE PROPOSITION 1B PUBLIC TRANSPORTATION MODERNIZATION, IMPROVEMENT AND SERVICE ENHANCEMENT ACCOUNT
 *** OTHERS INCLUDE TDA ADMINISTRATION, AND NB PROPOSITION A ADMINISTRATION (FOR A TOTAL OF \$.255M)

PROJECT ORGANIZATION AND STAFFING

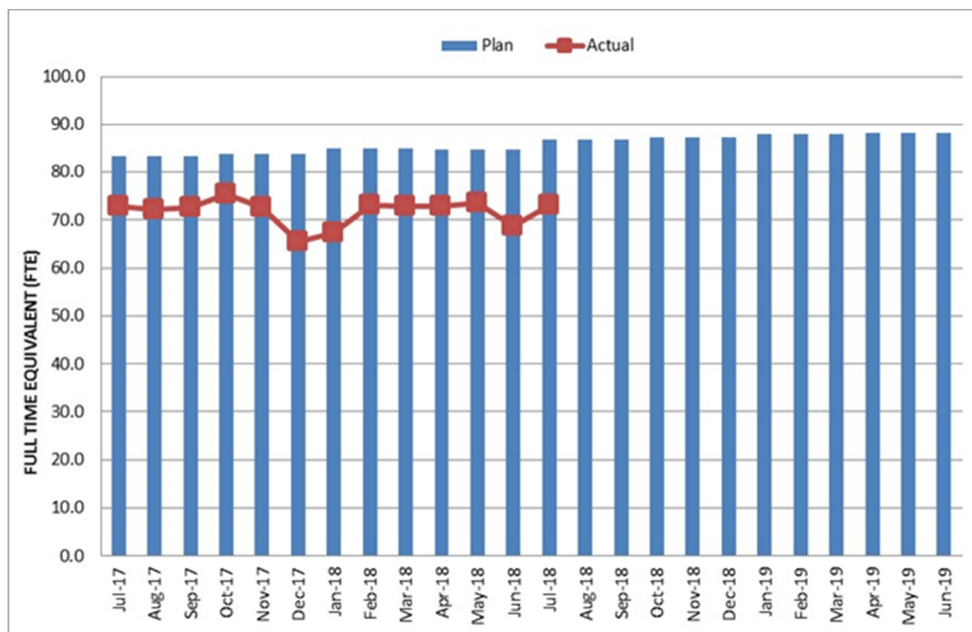
The D/B contract is being managed by a joint team of Metro and consultant personnel jointly located at the Integrated Project Management Office (IPMO).



Updated: 07/11/2018

The overall *FY19* Total Project Staffing plan averages 87.2 FTE's per month. The total actual project staffing for *July 2018* was 73.1*; 27.7 actual FTEs for Metro's Project Administration staff and 45.4 FTEs for consulting staff. The *downward-trending* shortfall in staffing has not impacted Metro's ability to effectively manage the Project. Review of staffing plans is on-going to ensure staffing needs are appropriately managed.

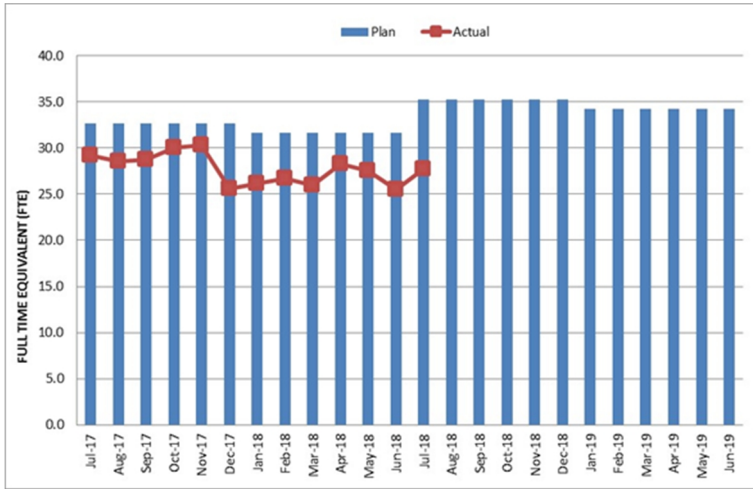
Total Project Staffing – Metro and Consultants



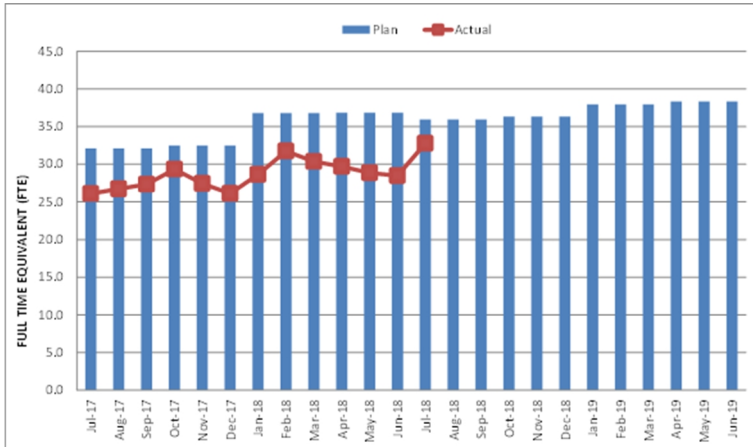
Data through July 2018

*July actuals include two (2) FTEs related to PMSS Services.

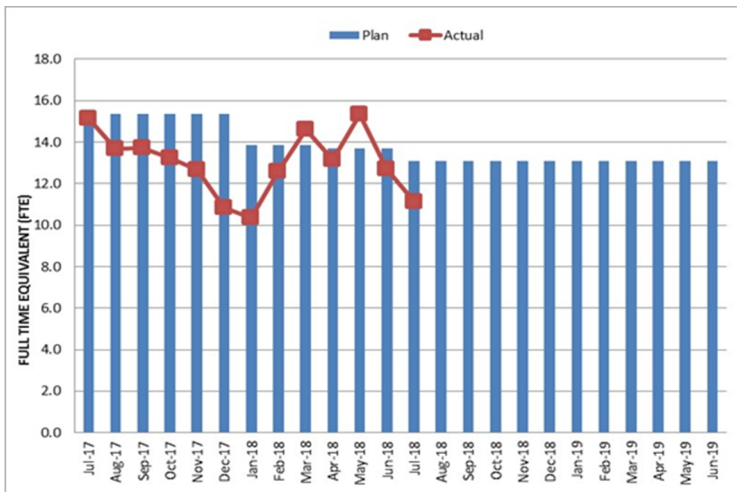
Metro Staff



CM Support Services Staff (Consultant)



Engineering Services Staff (Consultant)



All above data through July 2018

Staffing by Group

The opposing graphs represent planned vs. actual staffing levels by group.

Metro staffing includes full-time staff located in the IPMO as well as part-time support located at Gateway Headquarters.

Staffing plans are developed for each fiscal year based on Project needs.

REAL ESTATE

| Type of Take | Number of Parcels | Certified | Decertified | Appraisals In Process / Completed | Offers Made | Escrow Closed | Effective OIP | Parcels Available | Remaining |
|--------------------|------------------------|-----------|-------------|-----------------------------------|-------------|---------------|---------------|-------------------|-----------|
| Full Takes | 2 | 2 | | 2 | 2 | | 2 | 2 | |
| Part Takes | 3 | 3 | | 3 | 3 | | | 2 | 1 |
| SSE | 12 | 8 | 4 | 9 | 9 | 6 | 2 | 7 | |
| TCE/ROE | 14 | 5 | 3 | 6 | 6 | 4 | 1 | 5 | |
| PE | 3 | 3 | | 3 | 3 | 2 | | 3 | |
| Sub Total | 34 | 21 | 7 | 23 | 23 | 12 | 5 | 20 | 1 |
| Pedestrian Bridge | 420-1, 420-2, 420-3 | | | | | | | | 1 |
| Mangrove Fan Plant | TBD | | | | | | | | 1 |
| Grand Total | 36 | 21 | 7 | 23 | 23 | 12 | 5 | 20 | 3 |

Open Real Estate Matters

City of Los Angeles (Mangrove Parcels)

- A formal request was sent to the City of Los Angeles (City) regarding extending the 5-year Easement for an additional three years.
- The City has indicated it will honor the request. Valuation of the property for lease cost purposes will be managed on 1-year increments to reflect current market conditions. The first 1-year extension will go into effect in June 2019; a new appraisal in early spring 2019 will serve as a basis for the lease amount.

City of Los Angeles Department of Water and Power 'Duco Yard' – DWP (RC-473)

- LADWP and Metro staff have agreed on the terms and conditions. The formal agreement to be approved by LADWP's Board and the City Council. Meanwhile, a Right-of-Entry will be granted to begin preliminary construction work.

QUALITY ASSURANCE

C0980 Regional Connector D/B

Metro QA performed the following activities during the month of July:

- Reviewed and provided comments on RCC's quality-related submittals;
- Performed oversight verification of RCC's design and construction activities;
- Reviewed test results for Portland Cement Concrete, Soils Testing, Asphalt Testing and Non-Destructive Testing of Welding; and
- Attended "Readiness Review" meetings with RCC.
- *Metro QA conducted a surveillance (C980-SURV-2018-0018) of the first concrete placement by Mass Thermal Concrete for the ancillary slab at Historic Broadway Station. The Placement was acceptable; no anomalies were found during the placement.*
- *Metro QA performed a surveillance of Mass Electrical for the arrival of new Project material at their warehouse (C980-SURV-2018-0019). The surveillance was acceptable; no anomalies were found.*
- *Metro QA performed a surveillance (C980-SURV-2018-0020) of the Elevator Door Substitution DDR for Grand Av Arts/Bunker Hill Station. It was determined that a stainless-steel door will be installed in lieu of a glass door due to the fact glass doors are not manufactured to meet fire rating requirements of the California Building Code.*
- *RCC NCR 0041 remains open pending the repairs by RCC on Cross Passage #3.*
- *RCC NCR 0042 remains open pending further testing of the remaining concrete that was placed to finish the installation of the wall. Testing will be performed after the 28-day curing period. The tests will consist of core samples being taken at the cold joint line and at an area in the wall that no cold joint exists for comparison between the two areas.*
- *RCC NCR 0043 was drafted due to three Barlock Couplers that were snapped by an unqualified person. The Engineer of Record accepted this condition and the NCR is now closed.*
- *RCC NCR 0044 was drafted for defective concrete placed during the second lift of Cross Passage #1. The NCR has been sent to the Engineer of Record for a repair disposition.*
- RCC testing performed to date are as follows:
 1. Portland cement concrete 28-day test results: 1137; number accepted: 1137
 2. Asphalt concrete density tests results: 238; number accepted: 238
 3. Soil compaction (in-situ density) tests performed to date: 168; number accepted: 168
 4. Welding MT/UT testing to date is: 14,589; number accepted: 14,589

ENVIRONMENTAL

- Stormwater Pollution Prevention Plan (SWPPP) inspections of all Project areas are conducted weekly by RCC and Metro staff to observe site conditions and report on performance of stormwater protection per Best Management Practices. Throughout *August*, weather was dominantly dry, and prone to favor fugitive dust conditions. Therefore, daily street sweeping continued throughout the month.
- Metro *submitted* the 22nd Quarterly Mitigation Monitoring and Reporting Plan covering May 2018 to July 2018 to the FTA on August 14, 2018. *Metro will review the report with the PMOC in September 2018.*
- Metro submitted the 7th Semi-Annual Cultural Resources Report to the FTA and State Historic Preservation Office (SHPO) on July 30, 2018. Reporting will continue on a semi-annual basis until ground-disturbing activities conclude.
- Noise and vibration spot checks continue to be conducted weekly at multiple sensitive locations, and at the location of new activities along the project alignment. Ventilation fans for Flower Street underground work were shrouded with sound blankets as a noise mitigation action. The fan noise levels are in compliance with the EIR; however, further mitigation is being evaluated.
- SEM Cavern construction has the potential to produce ground-borne vibration and noise. *Therefore, a dedicated seismic monitor was placed in the basement of the Metropolitan News Building adjacent to 2nd Street and the path of the SEM Cavern. Limited “baseline” seismic data was collected, and the Project is currently collecting seismic data 24 hours a day/7 days a week.*

CONSTRUCTION AND COMMUNITY RELATIONS

Construction Relations

- Responded and addressed Project related inquiries from the public received via the hotline, email and during office hours at the Little Tokyo Community Office.
- Performed public outreach and construction coordination to impacted area stakeholders regarding the following construction activities: Flower Street: cut & cover weekend closures, sidewalk repair, and bus stop relocation for upcoming trainway feeder communication line and *concrete placement at Historic Broadway and Gran Av Arts/Bunker Hill Stations*.
- Distributed *three* (3) construction notices to the public on the above activities through email and made it available on the project website and social media outlets.
- Coordinated construction activities with 55 stakeholders throughout the project alignment on the above activities.
- Hosted the Flower St/Financial District *and Grand Av Arts/Bunker Hill* Community Leadership Council Committee meeting at the Central Library where updates on the progress of cut & cover activities and the trainway feeder communication line on Flower St and the station construction at the Grand Av Arts/Bunker Hill Station were provided. Updates on Eat, Shop, Play business mitigation accomplishments were also presented.
- *A special briefing on final restoration of Flower St was made to adjacent stakeholders; approximately 20 representatives were in attendance.*
- Continued standing meetings with: LA City Council District 14, the Mayor's Office, Commonwealth Partners, The Westin Bonaventure Hotel, Charles Dunn and The Standard Hotel.

Eat, Shop, Play – Construction Impact Business Mitigation Program

- *Implemented a social media promotional campaign for four Eat, Shop, Play participants in downtown Los Angeles and Little Tokyo. These included: LA Prime, Standard Hotel, California Club, and the Japanese American National Museum.*
- *Hosted an Eat Shop Play lunch meet-up and pop-up event in partnership with the Standard Hotel. Project social media page and Metro's main channels were used to promote the event; 40 attendees participating in the art installation-business promotion.*
- *Released the third and final video for the Bonaventure Hotel series highlighting LA Prime restaurant with 1,400 impressions on social media.*

Social Media Outreach and Marketing Efforts

- Published 12 newsletters, including three construction notices, a project update, meetings and special announcements, weekend look ahead and Eat, Shop, Play business promotion, totaling 18.01 mailings.
- The trending stories on social media included the Nisei Week 2018 festivities, progress of tunnel box construction below Flower St, and Flower St pile and decking progress photos.



Community Relations

- Continued work with the monthly Little Tokyo Marketing & Business Task Force

CREATIVE SERVICES

Art Program

- *Facilitated art coordination meetings with RCC*
- *Coordinated with RCC on glass and porcelain enamel steel artwork fabricator procurements*
- *Coordinated with RCC on artwork fabrication and delivery schedule*
- *Coordinated with the Project, RCC and Procurement in preparation for the release of RFPs for glass mosaic fabrication*
- *Continued to support mitigation efforts in coordination with community stakeholders on the design development for the former Atomic Café Interpretive Graphic Display*
- *Developed a recommended glass mosaic attachment detail*
- *Continued design development for corridor artworks*

Signage & Environmental Graphic Design

- *Assessment of RC operating impacts to signage systemwide*

SAFETY & SECURITY

C0980 Regional Connector

- Monitored RCC's pre-employment drug/alcohol testing and new employee safety orientation to insure compliance with contract specifications.
- Participated in weekly progress meetings with RCC's management personnel and Metro's Construction Manager to discuss safety/security/quality related issues and construction work schedules.
- Conducted Project Safety Orientation for new Metro/Consultants, visitors, and IPMO project staff. Training sessions included Safety Orientation, Underground Safety, and Self Rescuer Training.
- Participated in work plan reviews, daily crew safety meetings, and the RCC 'Safety Stand Down' sessions.
- Monitored construction field activities daily to ensure compliance with contract specifications. Participated with RCC staff in field safety inspection walks of multiple project worksites, laydown areas, and storage yards.
- Monitored Third Party contractor's work activities to insure safety compliance.
- Made recommendations to utility crews regarding contract activities and improving overall traffic control and pedestrian safety.

Project Safety Record

- RCC reported no Recordable Injuries and no major incidents during the month of *August 2018*.
- RCC reported 56,873 work hours for *July 2018*. RCC's total Contract to Date work hours through *July 2018* are 2,430,771 with a total of 13 Recordable Injuries and no Lost Workday (Days Away) case injuries. The C0980 Contract Recordable Injury Rate is 1.07. The Bureau of Labor Statistics reports that the National Average Recordable Injury Rate is 2.8 for heavy civil construction projects.
- Total Contractors' Project to Date Work Hours, including both the C0980 and the completed C0981 AUR contract, through *July 2018* is 2,541,830 hours with 14 recordable injuries. The Total Project Contractor Recordable Injury Rate is 1.10.
- Total Aggregate Project work hours for Contractors, Metro, and Support Services Consultants, through *July 2018* is 3,130,368 with 15 Recordable Injuries and no Lost Workday (Days Away) injury cases. The Total Project Aggregate Safety Rate is 0.96.*

*Using RIR method of calculating.

APPENDIX CHRONOLOGY OF EVENTS

| | |
|---------------|--|
| June 2007 | Began Alternatives Analysis study |
| January 2009 | Board approval of Alternatives Analysis study and next phase |
| February 2009 | Began Draft Environmental Impact Statement / Report (EIS / EIR) |
| October 2010 | Board approval of Draft EIS / EIR and selection of locally preferred alternative |
| January 2011 | FTA approval to Enter into Preliminary Engineering |
| January 2011 | Began Preliminary Engineering |
| August 2011 | Board authorized to solicit major D/B contract C0980 |
| October 2011 | Issued RFQs for D/B contract C0980 |
| December 2011 | Began Real Estate Acquisition |
| March 2012 | Completed PE and began Advanced PE |
| April 2012 | Board certification of Final EIS / EIR and adoption of project |
| April 2012 | Began Final Design - Advanced Utility Relocations (AUR) |
| June 2012 | FTA Record of Decision |
| August 2012 | Issued RFQs for D/B contract C0980 |
| January 2013 | Issued RFPs for D/Build contract C0980 |
| March 2013 | Completed Final Design - Advanced Utilities Relocation (AUR) |
| May 2013 | NTP for Construction Management Services contract MC070 |
| June 2013 | Beginning of AUR contract C0981R Bid Period |
| July 2013 | Submitted TIFIA loan application |
| July 2013 | Submitted first draft FFGA application to FTA for review |

| | |
|----------------|--|
| September 2013 | Received proposals for D/B Contract C0980 |
| September 2013 | Submitted second draft FFGA application to FTA, incorporating FTA comments |
| October 2013 | Submitted Application to FTA Requesting an FFGA |
| November 2013 | Started Emergency Generator Replacement Tank at 2nd Street and Historic Broadway Station (LA Times Building) |
| December 2013 | Issued "Notice of Intent to Award" letter to contract C0981R contractor Pulice Construction Inc. |
| January 2014 | Awarded AUR contract C0981R to Pulice Construction Inc. |
| February 2014 | Issued Notice to Proceed for AUR Contract C0981R |
| February 2014 | FTA issued Full Funding Grant Agreement to Metro |
| March 2014 | Issued Amendment # 11 for D/B Contract C0980 |
| March 2014 | Started Survey for AUR Contract C0981R |
| April 2014 | Metro Board approved the award of D/B Contract C0980 and established a LOP Budget |
| May 2014 | Awarded D/B Contract C0980 to Regional Connector Constructors, Joint Venture |
| June 2014 | Obtained possession of the Mangrove property from the City of Los Angeles |
| July 2014 | Issued Notice to Proceed for D/B contract C0980 |
| August 2014 | C0980 D/B Contractor (RCC) began Final Design |
| September 2014 | Metro performed the ground-breaking ceremony for C0980 D/B Contract |
| October 2014 | EN077 Contractor, Arcadis, removed the underground storage tank at LA Times Parking Lot |
| November 2014 | C0981R AUR Contractor completed DWP power work at 1st St. and Alameda |
| December 2014 | Metro completed Field Vibration Testing for existing Expo and Gold Lines |
| January 2015 | Demolish Buildings at 1st/Central Station |
| February 2015 | Metro approved the Baseline Schedule for C0980 D/B Contract |

| | |
|----------------|---|
| March 2015 | RCC started Historic Broadway Station Site Move-In |
| April 2015 | Metro terminated C0981R Contract for convenience |
| May 2015 | RCC started pile installation at Mangrove Launch Pit |
| June 2015 | RCC started decking for shoofly bridge (Pile Cap & Grade Beam) |
| July 2015 | DWP Water started installing 36" Water Valve at Alameda St. |
| August 2015 | RCC completed DWP Power work at Flower & 5th Street |
| September 2015 | RCC started Phase 2 DWP Power Relocation work at Broadway (Behind K Rail). |
| October 2015 | RCC started pile installation at 1st/Central Station |
| November 2015 | RCC completed Central Ave Full Closure (Pile & Decking) |
| December 2015 | Metro Board approved the increase (\$131.8M) of the Project LOP Budget to \$1,589.9 million. |
| January 2016 | RCC began implementation of Bus Bridge # 1 (Shoofly Tie-In Work at Little Tokyo). |
| February 2016 | RCC began implementation of full closure at 2nd/Broadway intersection. |
| March 2016 | RCC completed Bus Bridge # 1 (Shoofly Tie-In at Little Tokyo) work. |
| March 2016 | Excavation of 1st/Central Station was initiated. |
| April 2016 | TBM (Tunnel Boring Machine) was delivered to the temporary storage site. |
| May 2016 | Closed 1st Street between Alameda and Central Streets. Opened northbound 1st East of Alameda Street. |
| June 2016 | RCC completed excavation at 1st/Central Station Box |
| June 2016 | RCC began pile installation on west side of Flower Street between 4th and 5th Street |
| July 2016 | RCC initiated pile installation at Historic Broadway Station (West Hammer Head) |
| July 2016 | RCC Initiated CIP invert at 1st/Central Station Box |
| August 2016 | RCC completed 36" waterline replacement at 1st/Alameda |

| | |
|----------------|---|
| September 2016 | RCC completed temporary decking at 1st/Alameda intersection (Wye) |
| October 2016 | Metro performed TBM lowering ceremony |
| October 2016 | RCC completed CIP invert at 1st/Central Station Box |
| November 2016 | RCC completed CIP invert at Mangrove Launch Pit and Wye |
| December 2016 | RCC completed Phase 1, 2nd Street Decking in front of LA Times Bldg. |
| January 2017 | Metro Board approved a LOP Budget increase |
| February 2017 | RCC initiated TBM mining (1st – Left) |
| March 2017 | RCC completed TBM mining under JVP (first 500 ft.) |
| March 2017 | RCC completed temporary decking on Flower St. (between 4th and 5th) |
| April 2017 | RCC completed sub-invert at TBM retrieval pit |
| April 2017 | RCC completed CIP invert at Grand Av Arts/Bunker Hill Station Box |
| May 2017 | RCC completed temporary decking at Historic Broadway Station |
| May 2017 | RCC completed water relocation work along Flower Street |
| June 2017 | RCC completed mining and broke through at Grand Av Arts/Bunker Hill Station |
| June 2017 | Five-month full closure of 6th Street approved by LADOT, Caltrans and LADWP |
| July 2017 | RCC completed TBM mining of the first tunnel |
| August 2017 | RCC extracted TBM shields from the Retrieval Shaft |
| September 2017 | RCC began TBM mining of the second tunnel (right) |
| October 2017 | RCC completed TBM mining under JVP (first 500 ft.) |
| October 2017 | RCC completed temporary decking on Flower St. (between 5th and 6th, deck beam 16 to deck beam 58) |
| November 2017 | Completed five-month full closure of 6th Street |

| | |
|--------------------|--|
| November 2017 | Initiated underpinning related to the Historic Broadway Station |
| December 2017 | RCC completed mining and broke through at Grand Av Arts/Bunker Hill Station (Right Tunnel) |
| January 2018 | RCC completed TBM mining of the second tunnel (right) |
| February 2018 | RCC began excavation of cross passages |
| February 2018 | RCC began SEM canopy pipe installation |
| March 2018 | RCC began tunnel invert concrete |
| March 2018 | RCC completed infrastructure for power relocation work at 6th/Flower |
| April 2018 | RCC completed entrance structure excavation of Historic Broadway Station |
| May 2018 | RCC began SEM excavation |
| June 2018 | LADWP Power completed cable pulling at 6 th /Flower |
| June 2018 | Completed underpinning related to the Historic Broadway Station |
| July 2018 | RCC completed station box excavation of Historic Broadway Station |
| <i>August 2018</i> | <i>Completed entrance structure invert of Historic Broadway Station</i> |