

Los Angeles County
Metropolitan Transportation Authority

Regional Connector Transit Project

QUARTERLY PROJECT STATUS REPORT

December 2018



Metro[®]

REGIONAL CONNECTOR TRANSIT PROJECT

QUARTERLY PROJECT STATUS REPORT

THE PREPARATION OF THIS DOCUMENT HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, FEDERAL TRANSIT ADMINISTRATION (FTA).

December 2018

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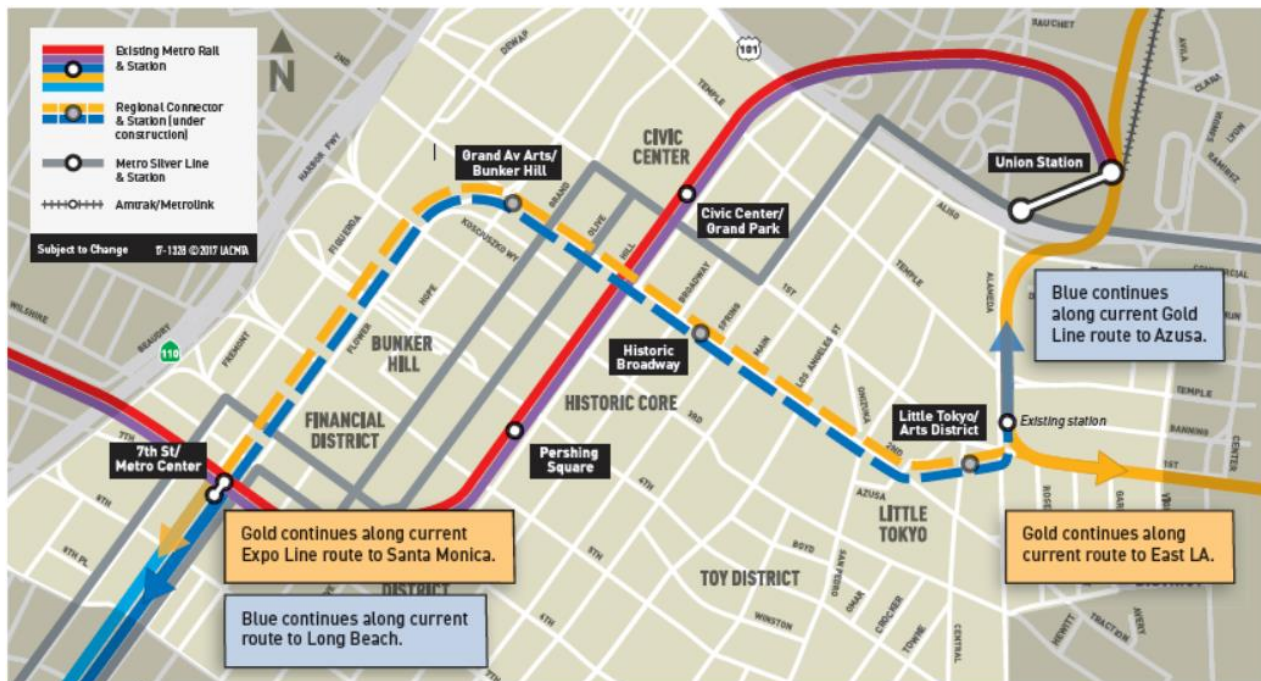
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PROJECT OVERVIEW

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 was 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 Universal Fare System and Ticket Vending Machine 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 late 2020. The scope addition of fare transfer equipment in the three Regional Connector stations is on hold pending decision to proceed. A decision will be made no later than January 2020.

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 consultant component is comprised of The Connector Partnership, a joint venture between AECOM, Inc. and WSP (CPJV) which 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 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. Cost 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, detailed in the Financial/Grant Section on page 23, 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 communities 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 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 at-large. Extensive planning and design has been performed to define the systems' cut-overs that will be required. The Project will continue to coordinate the completed systems interface design, with on-going procurement in preparation for construction and testing as 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. The training of 400+ operators across the regions has surfaced as a key component to rail activation. Associated detailed planning and scheduling efforts to optimize the extensive efforts required *continue*.

EXECUTIVE SUMMARY

In *December*, the Project achieved 54.8% completion based on earned value measurements for design and construction. The focus of the Project remains on facilitating critical path construction activities. Construction *momentum on the Project has slowed as RCC strives to optimize and execute major station concreting activities. This is further evidenced by the fact that monthly earned value amounts are running below target.* The following is an overview of current design and construction activities.

Design Status

Ninety-nine percent (99%) of the Final Design has been completed. *This period, the Radio Communications (DU12.1) and Grand Av Arts/Bunker Hill Station Pedestrian Bridge (DU64.3) design packages were approved. The Civil B (DU5) design package is the only remaining in progress.*

Significant design work is also near completion on the Tribune Entrance Redesign at the Historic Broadway Station with the last design package (ECI #62). This work became necessary to accommodate revised loading parameters from the developer. The redesign work has been a significant challenge for the designer who has been successful at keeping pace with construction requirements.

Construction Status

1st Street Cut & Cover Tunnel & U-Channel: Continued the excavation and the installation of excavation support.

Wye Structure: *The excavation progress continued and is expected to be completed next period. The placement of the mud mat and vertical backfill walls has commenced and will be completed next period. HDPE installation at the invert will begin next period.*

Crossover Cavern: *The SEM (Sequential Excavation Method) excavation of the crossover area continued to progress slightly ahead of plan. Completion of excavation is targeted for early March 2019. Planning for the final liner concrete is underway.*

Bored Tunnels: *Concrete placement of the invert in the right tunnel segment was completed from Grand Av Arts/Bunker Hill Station to Historic Broadway Station. Started concrete placement of the emergency walkway in both the right and left tunnel segments from the future Little Tokyo/Arts District Station to Historic Broadway Station.*

Flower Cut & Cover Tunnel: *The placement of concrete invert was suspended by the RCC pending resolution of structural backfill requirements from 4th/Flower to 5th/Flower. Continued utility hanging, excavation and the installation of excavation support from 5th/Flower to 7th/Metro Center.*

Little Tokyo/Arts District Station: *Completed the placement of the east lower ancillary invert. Continued HDPE installation for the east station box invert. Started rebar installation and concrete placement for the east station box invert.*

Historic Broadway Station: Completed the installation of the concrete invert in the west station box area. Continued the installation of HDPE for the platform level west station box exterior walls. Started the installation of rebar for the platform level west station box exterior walls. The installation of HDPE for the exterior walls in the entrance area continues.

Grand Av Arts/Bunker Hill Station: Started the formwork and rebar installation for the east platform level rooms and emergency exit. In the west station box area, completed the invert rebar installation. In the Mezzanine area, concrete placement was completed. At the Entrance Concourse area, continued installation of the interior walls rebar and formwork.

Cost and Schedule Summary

As of the reporting date, RCC remains current with its schedule updates.

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	11/02/21	-150 days

On the Project Master Schedule, the primary critical path is traced through the Flower Street North Cut & Cover Tunnel. Upon completion of the Flower Street North Cut & Cover Tunnel, the area will be available for delivery and storage of Flower Cut & Cover track material. After the material delivery to the North Flower Cut & Cover is complete, the installation of the track will commence, and systems installations will follow. A summary graphic of the critical path is found on Page 14.

Currently, there is a divergence in the view and depiction of the project critical path between Metro and RCC. Metro is working with RCC to account for and resolve critical interface details. The main differences are the completion of the required structural interfaces to allow track work access at various areas.

Project costs continue to track within budget and projected contingency draw-downs. 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 is one notice of intent to claim by RCC. The notice relates to Historic Broadway Station SOE stability issues. Detailed cost and budget information is provided on Page 16.

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: Multiple cut-over, testing and rail activation meetings have been conducted with various Metro Departments. Through this process, all known work items have been identified and those requiring further investigation are being evaluated. *Notwithstanding considerable progress*, planning meetings continue, as the team *seeks to grasp* the complex rail activation and certification process; coordination with all stakeholders in both planning and executing tasks *will continue*. Start-up requirements are similarly being addressed between the Project and Operations' Liaison staff. Operator training has surfaced as a pacing item for start-up; Management is reviewing planning and schedule options.

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 RCC to ensure stakeholder concerns are addressed and that MMRP requirements are fully complied with. Although decking is complete, and operations are largely now underground, construction impacts are still an issue requiring close coordination and outreach to impacted stakeholders.

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

Status/Action: The Project is proceeding with addressing City requested comments in the final design. The first of two final AFC (DU4) submittals was approved by all parties involved. In finalizing the second AFC (DU5) submittal, Metro requested an informal comment resolution meeting with the City on any new comments prior to their formal response. The second AFC submittal is anticipated in *January 2019*. Review of costs impacted by City's review requirements is underway.

Item 4: 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.

Status/Action: Agreement of the terms and conditions on the property acquisition and mitigations has been reached. While this progress indicated access to Metro/RCC for survey and onsite planning would proceed without impact to the schedule, actual access was delayed.

Item 5: 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 have collaborated closely with the developer to finalize design elements necessary to *meet development objectives and keep work in the station entrance area moving forward*. Once the final package is *accepted*, 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 owners.

Redesign efforts by RCC have been completed; final reviews are now underway. Metro is also evaluating additional design and construction costs precipitated by revisions to design parameters.

Project Construction Photos



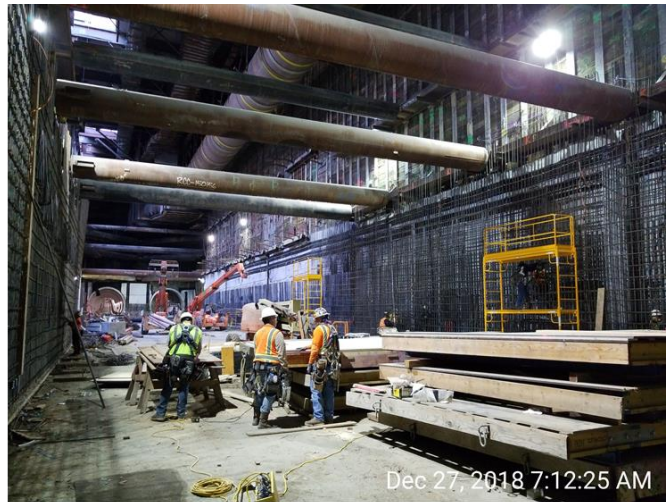
Dec 26, 2018 11:36:27 AM
Demolition of temporary center wall in SEM Cavern



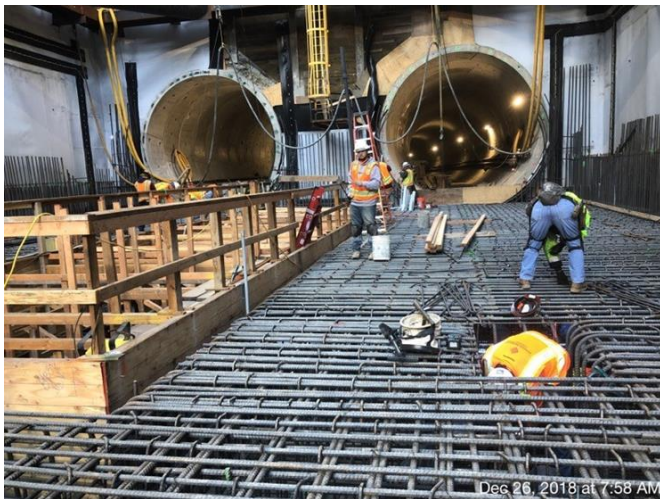
12/26/2018 09:16:22
Left Tunnel walkway concrete placement from future Little Tokyo/Arts District Station towards Historic Broadway Station



Dec 28, 2018 5:19:44 AM
West Cable Room mud slab at Track Level at Central in future Little Tokyo/Arts District Station



Dec 27, 2018 7:12:25 AM
Rebar installation progress in center station of Historic Broadway Station



Dec 26, 2018 at 7:58 AM
Rebar shear ties installation at West Hammerhead Invert at Grand Av Arts/Bunker Hill Station

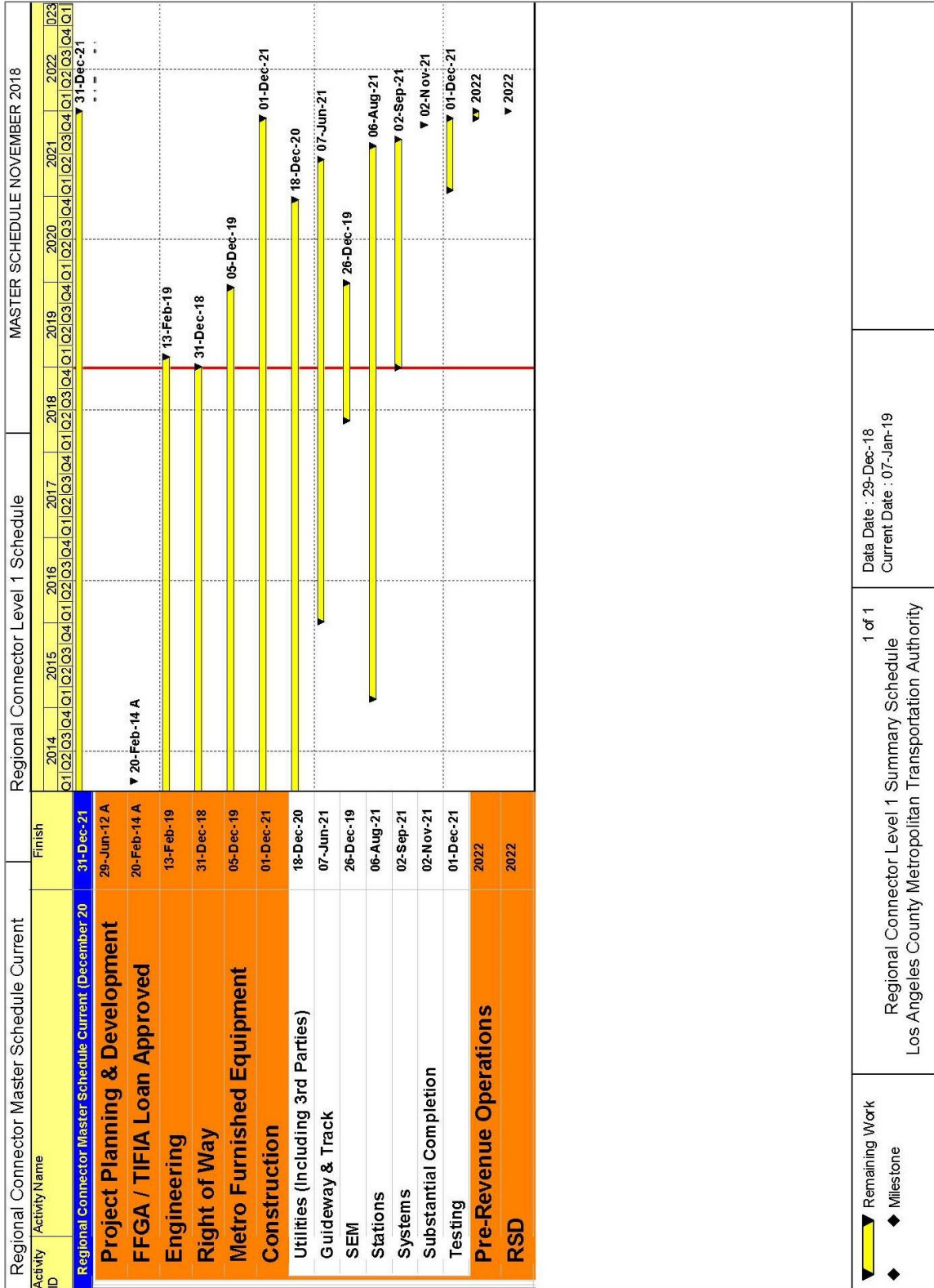


12/20/2018 7:15 AM
Excavation and lagging towards bottom level under Flower St

PROJECT UPDATE

PROJECT SCHEDULE

Project Summary Schedule

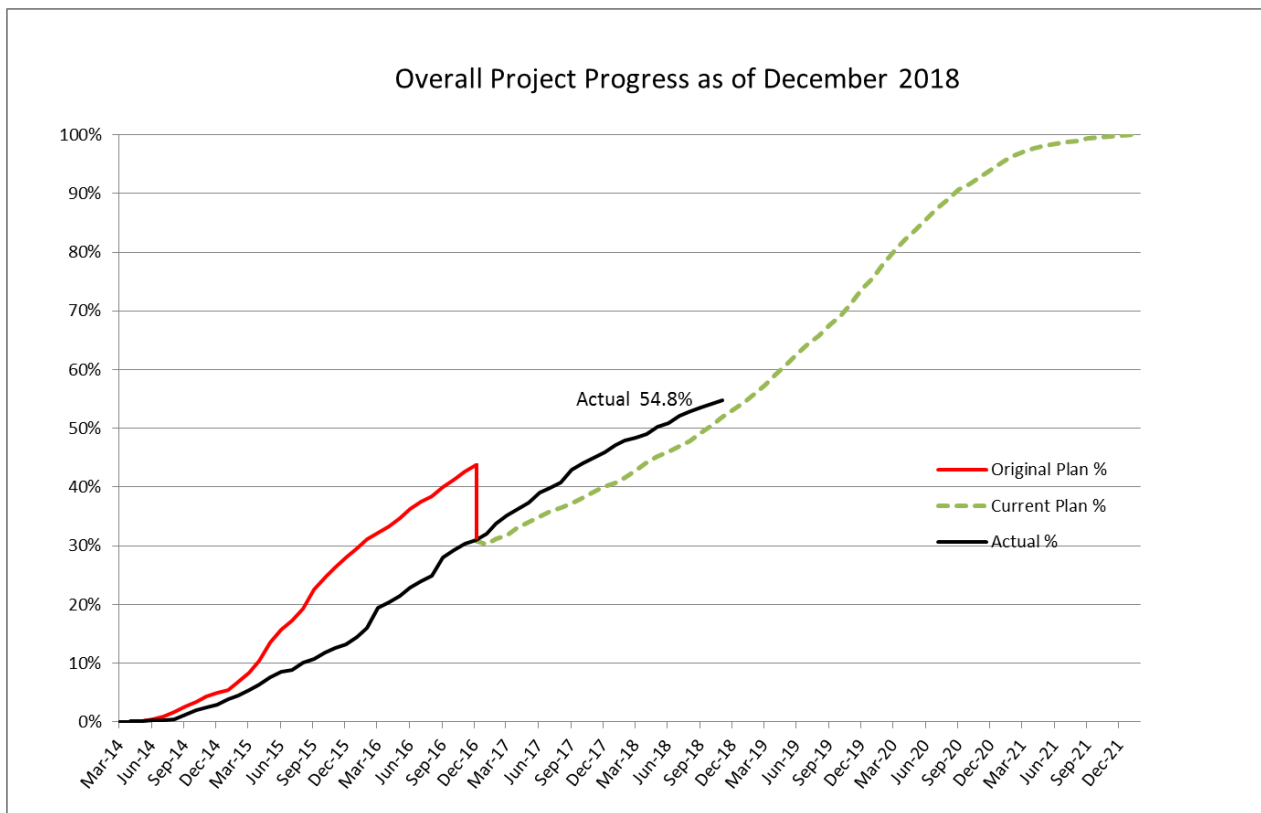


Progress Summary

	Status	Change from Last Period	Comment
Forecast Revenue Service	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%	Remaining design is not impacting the critical path
Construction Contracts Progress:			
Contract C0981R & C0980	51.7%	0.7%	













Note: Construction Progress excludes 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	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19
Complete SEM right drift excavation	12/6/18 A						
Complete station invert of Historic Broadway Station (West)	12/7/18 A						
Complete WYE Phase 2 excavation	12/31/18						
Complete WYE Vertical Backfill Walls	01/21/19						
Complete SEM center top excavation	01/30/19						
Approve Civil Segment B AFC Design Submittal	02/28/19						
Complete Tunnel Walkways Concrete 1/C to 2/B	02/15/19						
Complete 1st Street Tunnel / U-Channel Level 1 Shoring	03/06/19						
Complete SEM center excavation	03/15/19						
Complete entrance concourse walls at Historic Broadway Station	04/01/19						
Complete concrete invert at Little Tokyo / Art District Station	04/26/19						
Complete North Flower Cut & Cover Tunnel Invert	05/10/19						

 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

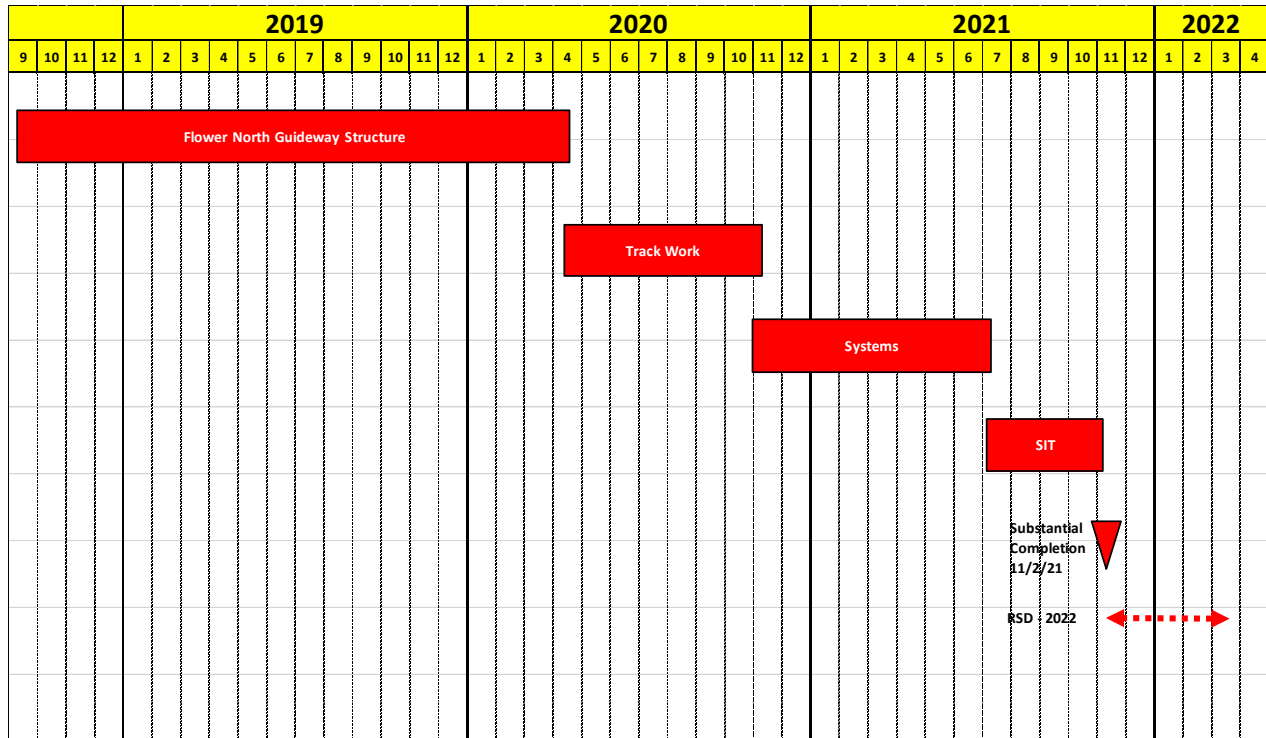
Metro Supplied Equipment

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)	09/14/2020 ~03/24/2021

Design/Builder Equipment Delivery Requirements

Activity Name	Finish	Need Date
FAB/DELIV TRAIN CONTROL CABLE	05-Oct-18 A	7-Aug-20
FAB/DELIV OCR FOR TUNNEL	05-Oct-18 A	3-Mar-21
FAB/DELIV ATC FO CABLE	15-Jan-19	12-Apr-21
FAB/DELIV TRAIN CONTROL EQUIPMENT	15-Feb-19	21-Oct-20
FAB/DELIV ELEVATORS - 1ST/CENTRAL	30-Jul-19	4-Mar-21
FAB/DELIV ELEVATORS - 2ND/HOPE	30-Jul-19	27-Jun-21
FAB/DELIV EMERGENCY VENTILLATION FANS - HOPE (4)	5-Sep-19	3-Jan-20
FAB/DELIV 2ND/HOPE TPSS	6-Sep-19	9-Mar-20
FAB/DELIV 2ND/BROADWAY TPSS	6-Sep-19	29-Jul-20
FAB/DELIV EMERGENCY VENTILLATION FANS - BROADWAY (4)	16-Oct-19	1-Jul-20
FAB/DELIV EMERGENCY VENTILLATION FANS - CENTRAL (4)	16-Oct-19	22-Sep-20
FAB/DELIV ELEVATORS - 2ND/BROADWAY	20-Oct-19	20-Apr-21
FAB/DELIV OCS POLES / EQUIPMENT	15-Nov-19	28-Jan-21
FAB/DELIV TELEPHONE CABLE	25-Nov-19	17-Aug-20
FAB/DELIV TELEPHONE DEVICES	25-Nov-19	17-Aug-20
FAB/DELIV CCTV CABLE	25-Nov-19	17-Aug-20
FAB/DELIV CCTV DEVICES	25-Nov-19	17-Aug-20
FAB/DELIV RADIO CABLE	25-Nov-19	17-Aug-20
FAB/DELIV RADIO DEVICES	25-Nov-19	17-Aug-20
FAB/DELIV FIRE ALARM CABLE	25-Nov-19	17-Aug-20
FAB/DELIV FIRE ALARM DEVICES	25-Nov-19	17-Aug-20
FAB/DELIV GAS DETECTION CABLE	25-Nov-19	17-Aug-20
FAB/DELIV GAS DETECTION DEVICES	25-Nov-19	17-Aug-20
FAB/DELIV IDS CABLE	25-Nov-19	17-Aug-20
FAB/DELIV IDS DEVICES	25-Nov-19	17-Aug-20
FAB/DELIV 144 FO CABLE	25-Nov-19	17-Aug-20
FAB/DELIV SPLICE ENCLOSURES & PATCH PANELS	25-Nov-19	4-Jun-21
FAB/DELIV SEISMIC DETECTION DEVICES	25-Nov-19	7-Jun-21
FAB/DELIV TPIS CABLE	25-Nov-19	10-Jun-21
FAB/DELIV TPIS DEVICES	25-Nov-19	23-Jun-21
FAB/DELIV COMMUNICATIONS UPS	25-Nov-19	21-Jul-21
FAB/DELIV SCADA RTU	25-Nov-19	11-Jul-22
FAB/DELIV ESCALATORS - 2ND/BROADWAY	11-Feb-20	28-Mar-21
FAB/DELIV ESCALATORS - 2ND/HOPE	11-Feb-20	31-Mar-21
FAB/DELIV ESCALATORS - 1ST/CENTRAL	11-Feb-20	3-Apr-22

Critical Path (C0980)



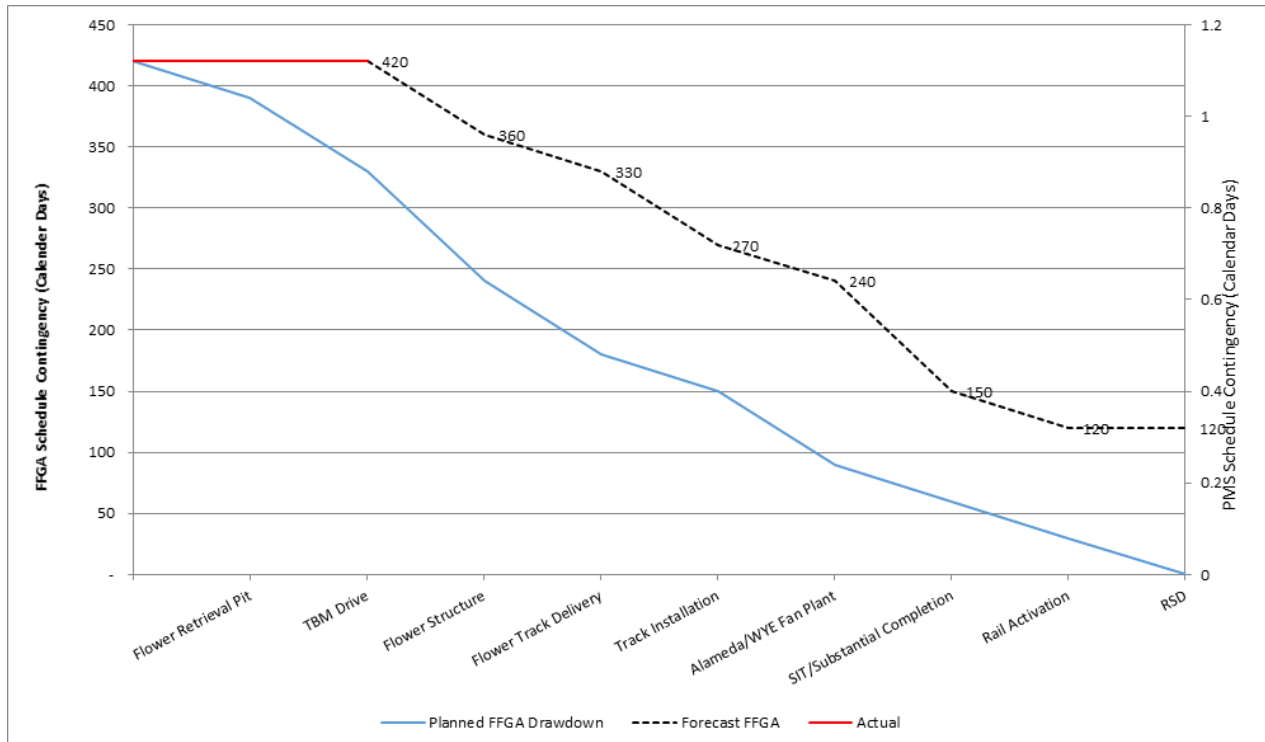
This period, RCC suspended the North Flower Cut & Cover Tunnel invert to re-sequence the invert concrete placement. Last period, the North Flower Cut & Cover Tunnel was near critical, and as a result of the revised sequencing has consumed the available float and is now the primary critical path. Although the critical path has changed, it did not result in a change to the Substantial Completion Milestone or the Revenue Service Date.

The critical path originates *at the North Flower Cut & Cover Tunnel structure*. Upon the completion of the roof *and walkways within the limits of the North Flower Cut & Cover Tunnel*, track access will be turned over to allow the start of track material distribution and installation. After the track material necessary for the entire Flower Cut & Cover Tunnel section has been received, the track installation will commence; starting from 4th/Flower to the 1st Street Portal. Following the track installation, the critical OCR and train control systems installations will follow. After the critical systems work is complete, the systems integration testing will commence and reach Substantial Completion through successful completion of all tests. Upon Substantial Completion, Metro Operations will begin its own integrated testing, followed by operator training and Pre-Revenue Operations. Revenue Service is expected in 2022.

Project Schedule Contingency Drawdown Analysis

The project schedule contingency drawdown model provides a perspective based upon the proposed FFGA RSD of February 2023.

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	248,516	2,479	166,075	1,114	253,884	4,603
20	STATIONS, STOPS, TERMINALS, INTERMODAL	354,268	219,477	0	229,919	0	229,902	597	62,088	0	230,001	83
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	185	575,973	4,171	443,769	396	624,013	25,597
50	SYSTEMS	69,667	73,848	0	73,424	-10	67,906	0	16,571	-60	76,032	2,607
	CONSTRUCTION SUBTOTAL (10-50)	846,343	920,468	0	1,151,041	175	1,122,296	7,247	688,502	1,450	1,183,931	32,890
60	ROW, LAND, EXISTING IMPROVEMENTS	115,889	74,208	0	92,742	7	52,468	31	52,305	0	76,410	-16,331
70	VEHICLES	16,275	16,275	0	16,275	0	16,275	3,056	4,998	0	16,275	0
80	PROFESSIONAL SERVICES	261,455	257,973	0	379,338	225	303,256	2,569	274,271	-175	393,684	14,346
	SUBTOTAL (10-80)	1,239,963	1,268,925	0	1,639,395	407	1,494,296	12,904	1,020,076	1,275	1,670,300	30,905
90	UNALLOCATED CONTINGENCY	135,399	126,892	0	89,946	0	0	0	0	-1,275	59,041	-30,905
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	407	1,494,296	12,904	1,020,076	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	-30	20,425	0	18,988	0	20,425	0
	TOTAL PROJECTS 400228 & 460228 (EVN/PLAN'G)	0	24,200	0	26,500	-30	26,500	0	25,063	0	26,500	0
400228, 460228, 860228 TOTAL		1,402,932	1,427,132	0	1,770,142	377	1,520,796	12,904	1,045,139	0	1,770,142	0

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 12/31/2018. METRO AND TRIBUNE AGREED ON REIMBURSEMENT OF ~\$1.6 MILLION RELATED TO 2ND/BROADWAY OVERBUILD.

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 \$0.4 million this period to \$1.52 billion which represents 85.9% of the Current Budget. The overall increase is related to several transactions including *work orders to LAFD and the Gas Company, and a project management assistance contract modification*. These increases were tempered by an unencumbered purchase order from COLA.

Expenditures:

Expenditures are cumulative through *December 2018*. Expenditures increased by \$12.9 million this period for costs associated with C0980 Design Build Contract, Engineering Management Support, Metro Project Administration, Construction Management Support Services, *Light Rail Vehicle Services*, Third Party Master Cooperative Agreements with the City of LA, Community Relations, and Environmental Consultant Services. \$1.045 billion in expenditures to date represents 59% 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	-8	22,470	0	27,748	0
70	VEHICLES	0	0	0	0	0	0	0	0	0	0
80	PROFESSIONAL SERVICES	650	0	650	0	650	2	317	0	650	0
	SUBTOTAL (10-80)	38,878	0	38,878	0	38,878	-6	22,787	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	-6	22,787	0	39,991	0
	861228 TOTAL	39,991	0	39,991	0	38,878	-6	22,787	0	39,991	0

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 12/31/2018.

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 *December 2018*.

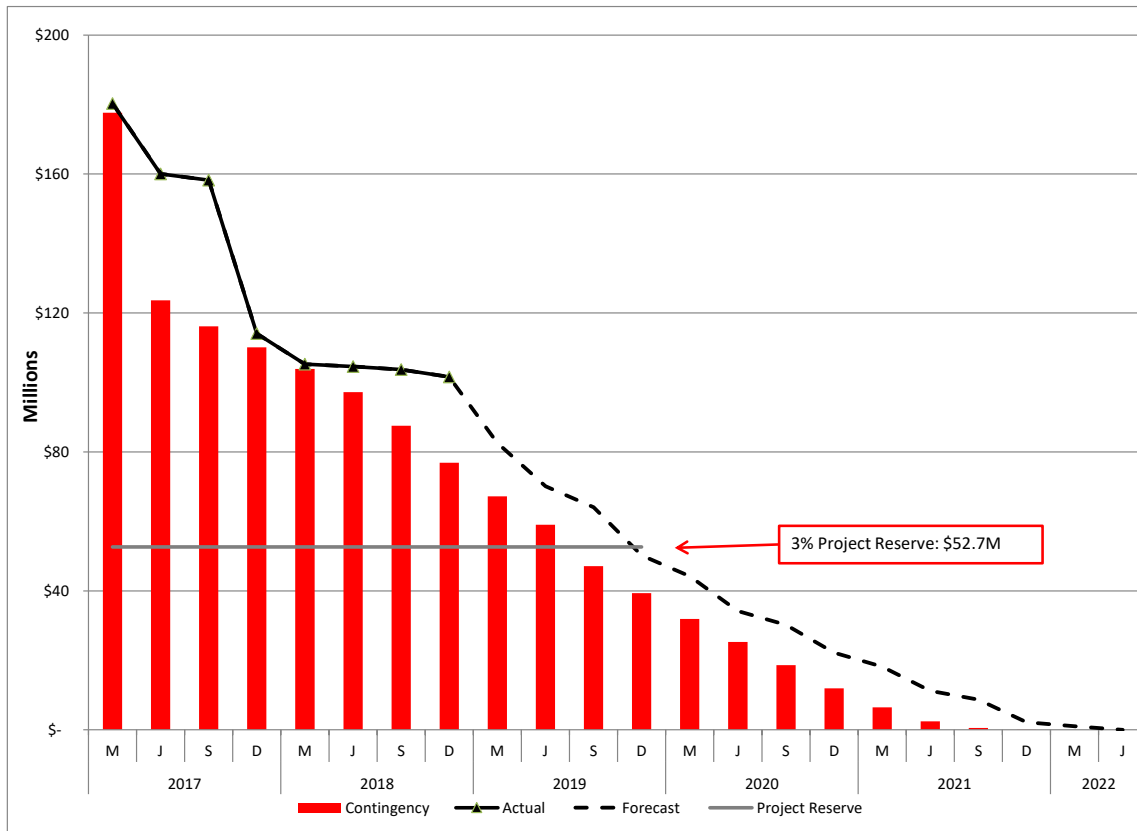
Expenditures:

Expenditures are cumulative through *December 2018*. Expenditures *decreased by a net \$6 thousand* this period *through adjustments* for costs associated with *Community Relations and Real Estate*. The \$22.8 million in expenditures through *December 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.

Highlighted in the drawdown is a 3% project reserve threshold *measured against the total LOP Budget*. 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 *there is no contingency* drawn down. The remaining total project contingency (allocated and unallocated) *remains at \$101.5 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	(29,629)	(1,275)	(30,905)	59,041
Allocated Contingency	86,345	92,809	(51,655)	1,275	(50,379)	42,429
Total Contingency	211,263	182,754	(81,284)	0	(81,284)	101,470

RISK MANAGEMENT

Summary of Risks

During this quarterly reporting period, eight (8) active risk were closed and eight (8) new risks were identified. There is a total of forty-two (42) risks to be managed in the next quarter.

Of the forty-two (42) risks, one (1) is scored as high, twenty-three (23) as medium and eighteen (18) as low.

Top 5 Risks

The table below shows the top 5 project risks as of *December 2018*:

Risk ID	SCC	Risk Description	Risk Rating
365	40	Longer operator training and simulation requirements during Pre-Revenue Operations may have cost and RSD implications	10
311	40	Commonwealth Agreement may impact cost due to extended "construction phase".	8
213	10	Law suits at Flower Street may delay the Project and increase costs.	8
394	40	Additional station and guideway craft and supervisory resources are needed to change the prevailing dynamic of insufficient crews to staff available work fronts; float erosion is likely to continue if craft labor crews numbers are not increased.	7.5
363	40	WYE pin pile removal after backfill and street restoration may have scheduled and cost implication beyond the WYE.	6

Newly Identified Risks

Eight (8) new risks were identified and added to the Project's Risk Register during the quarter.

Risk ID	SCC	Risk Description	Risk Rating
394	40	Additional station and guideway craft and supervisory resources are needed to change the prevailing dynamic of insufficient crews to staff available work fronts; float erosion is likely to continue if craft labor crews numbers are not increased.	7.5
405	40	1st/Central concrete schedule consuming float raising risk throughout the schedule.	5
400	40	Timing of storm drain repairs on Flower Street threatening schedule and higher costs.	4.5
375	40	Art program may require additional funding to fabricate and install art works as costs are trending higher than anticipate.	3
374	80	A tolling agreement between Metro and RCC regarding Bonaventure Hotel case may have cost implications.	2
372	40	RCC's pursuing Wall B (2nd/Broadway) assertion of DSC inefficiency may have cost implications.	1.5
373	40	Project may be held responsible for damages south of 6th/Flower due to Flower St settlement issue (Cost Implication only).	1.5
392	50	CTS design and implementation related to Bus Bridge #3 offers an opportunity to reduce risk.	0

Closed Risks

Eight (8) risks were closed on the Project's Risk Register during the quarter.

Risk ID	SCC	Risk Description	Risk Rating
348	80	Designer extended performance for civil packages threatening cost increases.	5
355	20	Water nuisance at 2nd Broadway threatening adverse schedule and cost impacts.	5
350	20	Floating slab changes (from cast in place to precast) may have cost and schedule implications.	4
359	40	City of LA Street Restoration Fee Increases may have cost implications.	4
370	80	Temporary street closures in 1st/Alameda area to support advancing guideway construction may have cost implications.	3
368	60	JVP's appeal against the verdict may have cost implications.	2.5
366	40	Citi Group noise abatement for fan noise may have cost implications.	2
362	10	Replacing direct fixation track to low vibration track along 1st Street and Alameda may improve schedule.	1

Risk Score Changes

One (1) active risk had a risk scoring assessment changes. Risk #365 was increased from a risk rating of 7.5 in October 2018 to 10 in November 2018:

Risk ID	SCC	Risk Description	Risk Rating
365	40	Longer operator training and simulation requirements during Pre-Revenue Operations may have cost and RSD implications	10

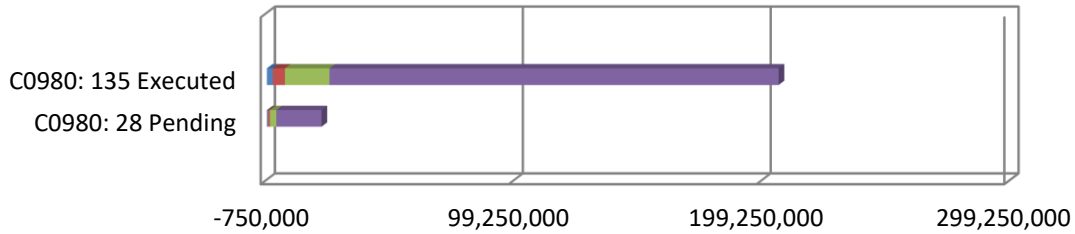
Actions in Next Reporting Cycle

The Project will continue to focus on Risk Management by holding regular monthly Risk Review Meetings, where risks will be discussed, scoring assessment changes will be made when necessary, and new potential risks will be identified, evaluated and added to the Risk Register, if deemed appropriate.

The Project is also continuing its Risk Refresh based on 54% overall completion through December 2018. The schedule, risk register, and cost forecast have been assessed by independent reviewers with recommendations for adjusting float and contingencies. These assessments have been updated to capture developments since the initial reviews performed in September 2018. Characterization and modeling of the adjusted bases is now underway. Preliminary simulations are anticipated in January, followed by a workshop to include FTA and PMOC participation.

Summary of Contract Modifications

Contract Modifications (MODs) by Cost Level



	C0980		Total
	135 Executed	28 Pending	
■ Under \$100K	2,393,077	433,000	2,826,077
■ \$100K to \$250K	4,886,864	765,650	5,652,514
■ \$250K to \$1M	17,962,770	2,610,000	20,572,770
■ Over \$1M	181,209,237	18,216,304	199,425,541
Total Contract MODs	206,451,948	22,024,954	228,476,902
Contract Award Amount	927,226,995	927,226,995	
% of Contract MODs	22.3%	2.4%	

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 thirty-five changes with a total value of \$206.5 million have been executed since NTP of Contract C0980. An additional 28 changes, with a total estimated value of \$22.02 million are pending.

DISADVANTAGED BUSINESS ENTERPRISE (DBE)

As of *November* 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:	26.95%

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:	\$193M (18%)
Current DBE Participation Total amount paid to date to DBEs divided by the amount paid to date to Prime:	13.14%*

Eighty-six (86) Construction DBE sub-contractors have been identified to date.

PROJECT LABOR AGREEMENTS (PLA)

As of *November* 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	58.77%
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	8.35%

*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

December 2018

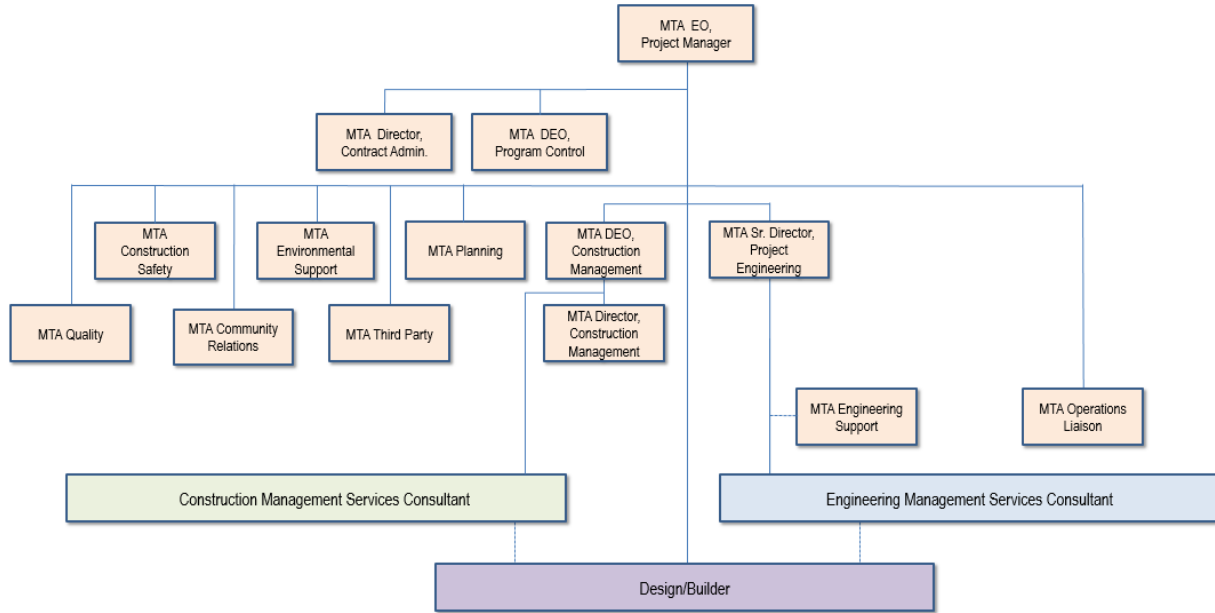
SOURCE	(A)	(B)	(C)	(D)		(E)		(F)	(F/B)
	ORIGINAL BUDGET	TOTAL FUNDS ANTICIPATED	TOTAL FUNDS AVAILABLE	COMMITMENTS		EXPENDITURES		BILLED TO FUNDING SOURCE	
				\$	%	\$	%	\$	%
FEDERAL - CMAQ	\$64.00	\$218.11	\$64.00	\$128.91	59%	\$49.87	23%	\$45.60	21%
FEDERAL - SECTION 5309 NEW STARTS	\$669.90	\$669.90	\$465.00	\$669.90	100%	\$370.73	55%	\$369.75	55%
FEDERAL - RIP	\$0.00	\$1.41	\$1.41	\$1.41	100%	\$1.41	100%	\$1.41	100%
MEASURE R - TIFIA LOAN	\$160.00	\$160.00	\$117.80	\$160.00	100%	\$135.71	85%	\$117.76	74%
STATE PROPOSITION 1A HSRB *	\$114.87	\$114.87	\$114.87	\$114.87	100%	\$114.87	100%	\$114.87	100%
STATE PROPOSITION 1B PTMISEA **	\$149.50	\$135.16	\$135.16	\$135.16	100%	\$135.16	100%	\$135.16	100%
STATE STIP RIP	\$2.59	\$17.00	\$2.59	\$15.58	92%	\$2.59	15%	\$2.59	15%
STATE CAPITAL PROJECT LOANS - OTHERS ***	\$132.47	\$274.83	\$274.83	\$263.54	96%	\$203.89	74%	\$181.74	66%
MEASURE R	\$27.57	\$0.00	\$0.00	\$0.00	0%	\$0.00	0%	\$0.00	0%
CITY OF LOS ANGELES	\$41.98	\$41.98	\$18.00	\$31.04	74%	\$18.00	43%	\$18.00	43%
LEASE REVENUE	\$64.25	\$79.07	\$0.00	\$0.00	0%	\$0.00	0%	\$0.00	0%
GENERAL FUND - METRO	\$0.00	\$43.50	\$43.50	\$0.00	0%	\$0.00	0%	\$0.00	0%
TOTAL	\$1,427.13	\$1,755.84	\$1,237.17	\$1,520.42	87%	\$1,032.24	58%	\$986.89	56%

NOTES:

1. EXPENDITURES ARE CUMULATIVE THROUGH NOVEMBER 30, 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
 4. LACMTA RESERVES THE ABILITY TO UPDATE COSTS AND CHANGE FUND SOURCES AS REQUIRED.
- * 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)
 *** OTHERS INCLUDE TDA ADMINISTRATION, AND NB PROPOSITION A ADMINISTRATION (FOR A TOTAL OF \$.255M)

PROJECT ORGANIZATION AND STAFFING

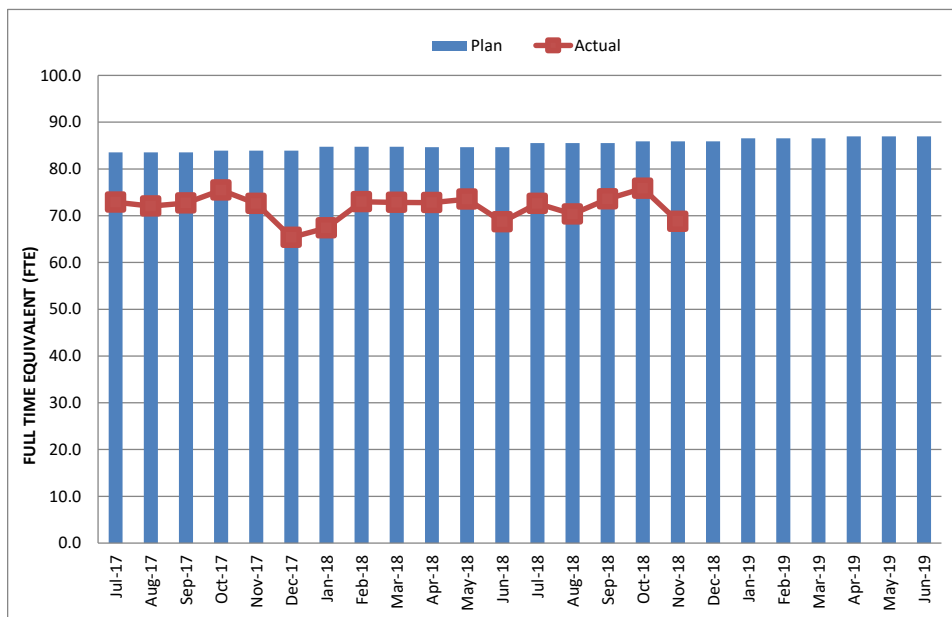
The D/B contract is being managed by a joint team of Metro and consultant personnel jointly located at the Integrated Project Management Office (IPMO).



Updated: 10/29/2018

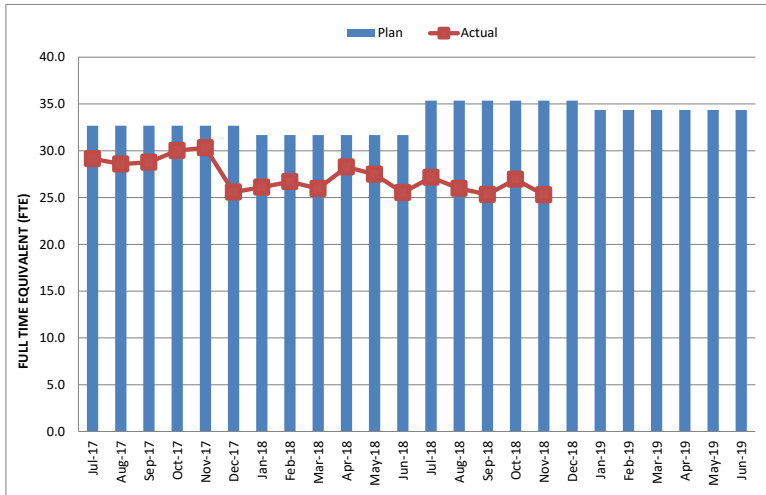
The overall FY19 Total Project Staffing plan averages 86.23 FTE's per month. The total actual project staffing for *November 2018* was 68.8; 25.3 actual FTEs for Metro's Project Administration staff and 43.5 FTEs for consulting staff. The downward-trending staffing has not impacted Metro's ability to effectively manage the Project. Review of staffing plans is on-going to ensure staffing needs are appropriately managed.

Total Project Staffing – Metro and Consultants

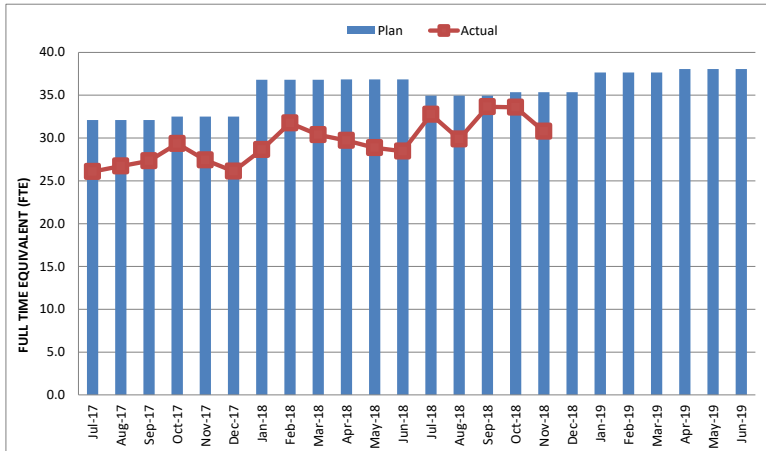


November actuals include 1.1 FTEs related to PMSS Services.

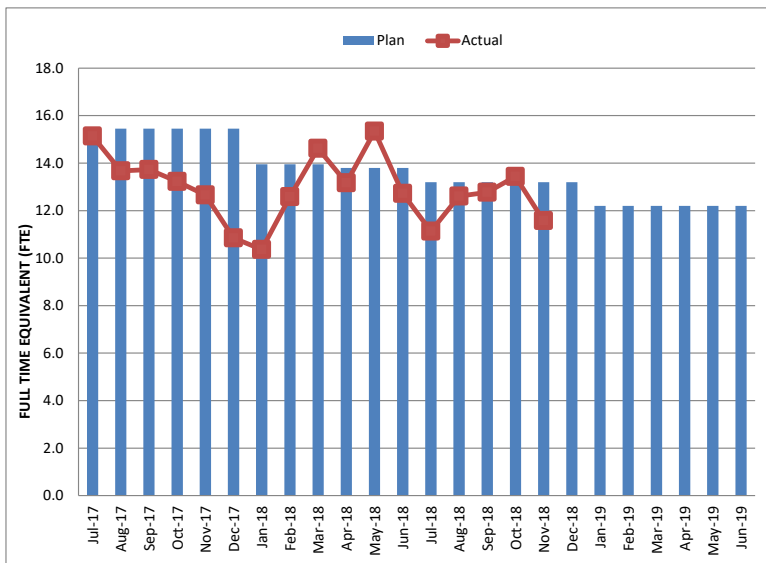
Metro Staff



CM Support Services Staff (Consultant)



Engineering Services Staff (Consultant)



All above data through November 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)

- *The City of Los Angeles (City) obtained a new appraisal of the required property interests for the fan plant which include a subsurface easement and a permanent surface easement. The appraisal has been submitted to Metro for review. Once the review is completed, Metro will provide its comments to the City.*
- A formal request was sent to the City regarding extending the 5-year Easement for an additional three years. The City has agreed to extend the 5-year easement for an additional 3 years. The appraisal that the City obtained included a scope which valued the TCE; a lease percentage increase will be negotiated.

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

- LADWP and Metro staff have agreed to the terms and conditions. The formal agreement is to be approved by LADWP's Board and the City Council. Meanwhile, *Right-of-Entry has been provided to support survey and initial field studies.*

QUALITY ASSURANCE

Metro QA performed the following activities during the month of *December*:

- 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
- Attended "Readiness Review" meetings with RCC
- *Metro QA conducted a surveillance (C980-Surv-2018-0028) for Locked Torque Rotor Design of Emergency Fan Motors. No anomalies were noted during this surveillance.*
- *Metro QA conducted a surveillance (C980-Surv-2018-0029) for a concrete invert placement at the future Little Tokyo/Arts District Station. No anomalies were noted during this surveillance.*
- *Metro QA conducted a Quarterly Audit (C980-AUD-2018-002) of the RCC Quality Management System. The results are being evaluated and will be reported in the next reporting period.*

RCC NCR 0042 remains open pending review of the response and calculation, provided by the Engineer of Record, by Metro Engineering.

RCC NCR 0044 was drafted for defective concrete being placed during the placement of the 2nd lift of Cross Passage #1. *The disposition was approved by the Engineer of Record and Metro. This NCR remains open pending implementation of repairs by RCC.*

RCC NCR 0049 was issued for multiple damaged conduit at the future Little Tokyo/Arts District Station. The damage occurred during excavation activities. *The disposition was approved by the Engineer of Record and Metro. The repairs have been implemented. This NCR is now closed.*

RCC NCR 0050 was issued for a damaged Storm Drain at the future Little Tokyo/Arts District Station. The storm drain was damaged during excavation activities. *The disposition was approved by The Engineer of Record and Metro. The approved repairs have been implemented. This NCR is now closed.*

RCC NCR 0051 was issued for damage to the grounding grid at Grand Av Arts/Bunker Hill Station during excavation activities. *The NCR has been approved by the Engineer of Record and Metro. The repairs have been implemented. This NCR closed.*

RCC NCR 0053 was issued for damaged conduit at Historic Broadway Station. This NCR is with the Engineer of Record for review and approval.

RCC NCR 0055 was issued for damage to an electrical stub-up conduit that encases #4 and #6 grounding wiring. This NCR disposition has been approved by the Engineer of Record and Metro. *The NCR is now closed.*

RCC NCR 0057 was issued for damage to a drain pipe. The NCR is with the Engineer of Record. This NCR remains open.

RCC NCR 0058 was issued for defective concrete after form removal to wall 2H-20-W. A disposition is pending from RCC to the Engineer of Record. The NCR remains open.

RCC NCRs 0038, 0041, 0047, 0052, 0054, and 0056 remain open with no change.

RCC testing performed to date are as follows:

1. Portland cement concrete 28-day test results: 1287; number accepted: 1287
2. Asphalt concrete density tests results: 242; number accepted: 242
3. Soil compaction (in-situ density) tests performed to date: 174; number accepted: 174
4. Welding MT/UT testing to date is: 14,648; number accepted: 14,648

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 *December*, the weather was cooler and overcast with one recorded rain event. The rainy condition increased the amount of SWPPP inspections for the month and decreased the fugitive dust conditions. Daily street sweeping continued throughout the month.
- *Metro is preparing the 24th Quarterly Mitigation Monitoring and Reporting Plan covering November 2018 to January 2019, and plans to submit the report to the FTA no later than February 14, 2019. Metro will meet with the PMOC in January 2019 to review the 23rd Quarterly Mitigation Monitoring and Reporting Plan.*
- *Metro is preparing the eighth Semi-Annual Cultural Resources Report covering the period of July 2018 to December 2018 to the FTA and SHPO, and will submit the report no later than January 31, 2019.*
- Noise and vibration spot checks continue to be conducted weekly at multiple sensitive locations, and at the location of new activities along the 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; currently no further mitigation is being requested by stakeholders.
- SEM Cavern construction has the potential to produce ground-borne vibration and noise. Therefore, dedicated seismic monitors were placed in the basement of the Metropolitan News Building and the Higgins Building adjacent to 2nd Street and the path of the SEM Cavern. Limited “baseline” seismic data was collected; 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: *bike prohibition due to track conflict on westbound First St from Vignes to Alameda and concrete placement activities at the future Little Tokyo/Arts District Station and Grand Av Arts/Bunker Hill Station.*
- Distributed *four (4)* construction notices to the public on the above activities through email and made it available on the project website and social media outlets.
- Provided information and coordinated with *100* stakeholders throughout the alignment on Project activities.
- Continued standing meetings with: LA City Council District 14, the Mayor's Office, The Westin Bonaventure Hotel, and Charles Dunn.

Eat, Shop, Play – Construction Impact Business Mitigation Program Highlights

- *Featured five businesses and community events online: JANM, Ciclavia, Library Store, and Go Little Tokyo's Holiday Guide and Shogun Santa*
- *Published the sponsored Public School 213 video ad on Instagram, with 102.5k impressions, 770 link clicks*
- *Through posters on Metro Rail help promote the Go Little Tokyo Holiday Marketplace campaign.*



Social Media Outreach and Marketing Efforts

- *Published 15 newsletters, including four construction updates, totaling 34.0k mailings.*
- *Trending stories on social media included updates on Blue Line closure, 1st St bike prohibition, and Shogun Santa.*

Community Relations

- Continued work with the monthly Little Tokyo Marketing & Business Task Force to promote *Shogun Santa* and through posters on Metro Rail help promote the *Go Little Tokyo Holiday Marketplace* campaign.



CREATIVE SERVICES

Art Program

- Prepared glass mosaic artwork fabricator procurements
- Coordinated with the Project and RCC on engineering details related to artwork installation
- Continued design development for corridor artworks
- Continued to support mitigation efforts in coordination with community stakeholders on the design development for the former Atomic Café Interpretive Graphic Display
- 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 *December 2018*.
- RCC reported 53,060 work hours for *November 2018*. RCC's total Contract to Date work hours through *November 2018* are 2,666,047 with a total of 13 Recordable Injuries and no Lost Workday (Days Away) case injuries. The C0980 Contract Recordable Injury Rate is 0.98. 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 *November 2018* is 2,777,106 hours with 14 recordable injuries. The Total Project Contractor Recordable Injury Rate is 1.01.
- Total Aggregate Project work hours for Contractors, Metro, and Support Services Consultants, through *November 2018* is 3,415,453 with 15 Recordable Injuries and no Lost Workday (Days Away) injury cases. The Total Project Aggregate Safety Rate is 0.88.*

*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
August 2018	Completed entrance structure invert of Historic Broadway Station
September 2018	Completed temporary decking of Flower Street
October 2018	RCC started the CN 106.2 Final Design of the Revised Cable Transmission System for the Gold Line
October 2018	Metro completed approval of floating slab test results
October 2018	RCC completed SEM left drift excavation
October 2018	RCC completed Trainway Feeder duct bank at Flower St & 7 th St
November 2018	RCC completed Little Tokyo / Arts District Station Box Excavation
November 2018	RCC completed Grand Av Arts/Bunker Hill Station East Platform Level Exterior Walls
<i>December 2018</i>	<i>RCC completed SEM right drift excavation</i>
<i>December 2018</i>	<i>RCC completed the Historic Broadway Station west invert</i>

<i>December 2018</i>	<i>RCC started tunnel walkways between the future Little Tokyo/Arts District Station to Historic Broadway Station</i>
<i>December 2018</i>	<i>RCC started the future Little Tokyo/Arts District Station east invert</i>
<i>December 2018</i>	<i>RCC completed Grand Av Arts/Bunker Hill Station mezzanine concrete</i>