

Los Angeles County  
Metropolitan Transportation Authority

# Regional Connector Transit Project

East Los Angeles ↔ Santa Monica

Azusa ↔ Long Beach



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).

**June 2018**

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## PROJECT OVERVIEW & STATUS

The Regional Connector Transit Project (Project) will link the current terminus of the Blue and Expo Lines at 7th/Metro Center to the Gold Line near the Little Tokyo/Arts District Station in a new underground alignment along Flower Street and 2nd Street in Downtown Los Angeles. The Project has been re-sequenced to become operational in a single phase. It will link to the existing Eastside Gold Line along 1st Street and the existing Gold Line to Pasadena along Alameda Street toward Union Station. The Revenue Service Date (RSD) is planned for November 29, 2021.

The alignment will extend underground from the 7th Street/Metro Center Station under Flower Street to 2nd Street. It will then proceed east underneath the 2nd Street tunnel to just west of Central Avenue where the alignment will veer northeast under privately-held property, Japanese Village Plaza. At 1st Street and Central, the tracks continue underground heading north and east under 1st and Alameda Streets. A junction (“Wye”) will be constructed beneath the 1st and Alameda intersection. To the north and east of the junction, trains will rise to the surface through two new portals to connect to the Metro Gold Line heading north to Pasadena and east to East Los Angeles. The north portal will be located northeast of the current Little Tokyo/Arts District Station and tracks. This portal will rise to connect to the existing LRT bridge over the US-101 freeway. The portal will be connected to the 1st and Alameda junction by a new cut and cover box structure crossing beneath Temple Street and Alameda Streets, running immediately east of the existing Little Tokyo/Arts District Station and tracks. The east portal will be located within 1st Street between Alameda and Vignes Streets. Tracks will rise to the east within this second portal and connect at-grade to the existing Metro Gold Line tracks toward East Los Angeles.

### **Major Contract Procurements**

The Board authorized to solicit a major Design/Build (D/B) contract, C0980, in August 2011. Metro staff recommended to award contract C0980 to the Regional Connector Constructors (RCC), a joint venture of Skanska USA Civil West California District, Inc. and Traylor Brothers, Inc. and Metro Board authorized award of the contract on April 24, 2014; Notice to Proceed (NTP) to RCC, issued July 7, 2014.

Solicitation of an Advanced Utility Relocations Contract, C0981R, completed after Metro’s Procurement team awarded the contract to Pulice Construction, Inc. in January 2014 and issued NTP on February 18, 2014. Contract C0981R was terminated for convenience on April 14, 2015 and remaining AUR work has been transferred to the C0980 D/B Contractor, RCC.

## PROJECT OVERVIEW & STATUS (Cont.)

### Construction

Varied operations are underway throughout the alignment to include: support of excavation for guideway and station boxes, excavation, tunnel cross passages, settlement monitoring, structural concrete and utility relocations. Operations are currently active seven days with some being performed on a multiple-shift basis.

### Systems

The existing functional operations at the Rail Operations Center (ROC) necessitate an expansion to accommodate the central control functions associated with five new rail lines and extensions including the Regional Connector Transit Project. Design for the ROC Reconfiguration Project was completed to reconfigure the second floor to prepare for Expo II and Foothill Rail Line extensions, and the design will be further updated with each successive integration of the Crenshaw/LAX, Regional Connector and Purple Line projects.

### Light Rail Vehicle

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. The base contract includes 78 LRVs and options of 157 for a total of 235.

### Program Management

In January 2017, the Metro Board revised the Life of Project (LOP) Budget for Regional Connector Project 860228 to \$1.756 billion. The LOP budget for Concurrent Non-FFGA activities related to Project 861228 remains at \$39.9 million.

Funding for the Project comes from a variety of sources to include Federal New Starts, TIFIA Loan, State repayment of capital project loan, State Proposition 1B, State Proposition 1A (High Speed Rail), local agency and lease revenues, and from the Congestion Mitigation and Air Quality Improvement Program. Fifty percent (50%) of the funding comes from federal sources.

Project commitments through *June* 2018 increased by \$997 thousand to \$1.51 billion or 85.3% of the Current Budget. These changes reflect RCC executed modifications. Project expenditures through *June* 2018 are \$972.7 million or 55% of the budget. The expenditures to date cover all cost elements including: engineering management, construction management support services, third party utility relocation work, agency administration, design build contract (C0980), right of way, various master cooperative agreements, and other professional services.

## **PROJECT OVERVIEW & STATUS (Cont.)**

The project master schedule forecasts revenue service in 2021 through a simultaneous opening of both the Azusa and East LA legs of the Metro Gold Line.

A comprehensive risk refresh process was undertaken in late 2016 by both Metro and the FTA/PMOC to evaluate then current schedule and cost forecasts. Outcomes for total project costs were compatible and contributed to establishing an increased LOP Budget. The Project's Risk Register is reviewed and updated monthly.

## MANAGEMENT ISSUES / OPPORTUNITIES

Concern No. 1: Complex Systems Integration could delay the project's planned Revenue Service Date, if not managed well.

Status/Action: A second Rail Activation Workshop was held at the IPMO on April 28, 2018 with representatives from 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. Task Force Teams were established, with action items, in preparation for Workshop No. 3 to be held in Summer 2018. Task Force Teams *commenced* to outline respective schedule requirements for integration into a detailed schedule.

Concern No. 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: Project is engaged in active stakeholder outreach and construction impact mitigation. Working closely with the contractor to ensure concerns are addressed and that MMRP requirements are fully complied with.

Concern No. 3: Addressing City comments on final street restoration plans has resulted in additional design efforts and Project costs.

Status/Action: The Project proceeded with incorporating City requested changes into the final design. The team also back-checked the first of two final AFC plan submittals to confirm that all prior comments were addressed before the plans were submitted to the City for approval. Metro has also requested an informal comment resolution meeting with the City on any new comments prior to their formal response. The second submittal is anticipated in August 2018 with a similar back-check process planned.

## MANAGEMENT ISSUES / OPPORTUNITIES (Cont.)

Concern No. 4: A differing site condition (DSC) within the projected SEM cavern guideway has been reported. The DSC is believed to be steel remnants from recent construction along 2<sup>nd</sup> 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.*

Concern No. 5: *Agreement and closure on the property acquisition and related mitigations at LADWP's Duco Yard have been delayed; impacts to early construction planning, surveying and logistical imperatives may result.*

Status/Action: *Agreement in principle on the property and mitigations has been reached. Agreement terms and conditions are in review. Action to secure a right-of-way may be necessary to support schedule.*

Concern No. 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 plaza area moving forward uninterrupted.*

# PROJECT ALIGNMENT



## **BASE PROJECT SCOPE**

### **Engineering**

This phase consists of Preliminary Engineering (PE), Advanced PE (APE) and Final Design. During PE, The Connector Partnership, a joint venture between AECOM, Inc. and Parsons Brinkerhoff (CPJV), was responsible for engineering, design, and development of fixed facilities, stations, guideways, tunnels, related facilities, *and systems* for the Project to a level sufficient to provide the basis for final design. CPJV was also responsible for documentation necessary to support the Environmental Assessment process and the engineering and final design for advanced utility relocations.

Alignment modifications and Value Engineering were developed during Advanced PE to accommodate environmental mitigations and further develop the design to better accommodate rail operations and reduce the cost of the Project. PE and APE were completed in March 2013.

Final design for advanced utility relocations performed by Metro and CPJV was completed during Advanced PE and it included DWP water and power lines as well as City of LA sewer lines. AUR final design for other utilities was performed by individual utility companies. The balance of Final Design is being performed by the RCC as part of the C0980 Contract.

### **Metro Furnished Equipment**

Metro is procuring four (4) LRVs for the Project. The vehicles will be procured and delivered by Kinkisharyo International, LLC under Option 2 of Contract P3010. The vehicles will be tested and accepted at the Gold Line Yard and put in service when the line is open for Revenue Service. Metro will also furnish Universal Fair System (UFS) equipment, which will be designed, fabricated and installed under a Metro contract.

### **Construction**

The scope of work in this phase is performed by third party utility companies and RCC as follows:

#### **Third Party Advanced Utility Relocations**

Several utility owners have already relocated many of their assets and will continue to do so through 2018. The utilities include fiber optic, telephone, cable television, electrical (power cable pulling and splicing), and natural gas lines. Utility work started in late 2012 and has progressed throughout the alignment.

## **BASE PROJECT SCOPE (Cont.)**

### **Contract C0980 Regional Connector Design Builder**

This is the largest contract of the project that includes: final design and construction of underground guideway; station structures; miscellaneous underground structures; trackwork; traction power; overhead conductor rail; train control; communications; and all electrical and mechanical equipment, and testing. The contractor will restore the Mangrove site and impacted streets to their previous condition at the end of the project.

The design-build contractor also must meet sensitive noise and vibration standards at Disney Music Hall and the Colburn Music School, control subsidence along the alignment, and meet various other requirements for the various stakeholders along the alignment. This contract was awarded to Regional Connector Constructors, JV (RCC) on May 6, 2014 and NTP was issued July 7, 2014. Metro has exercised several contract options and has added the remaining Advanced Utility Relocation work (C0981R Contract) to the C0980 Contract.

### **Contract C0981R Regional Connector Advanced Utility Relocations**

Metro awarded the design-bid-build Advanced Utility Relocations Contract (Metro Contract No. C0981R) to Pulice Construction, Inc. to complete specific relocations at each of the future stations and along Flower Street in advance of the main D/B Contract C0980. The relocated utilities were long-lead construction tasks that were known to conflict with cut and cover excavations.

The scope of this work included the following relocations: LADWP water lines, LADWP power lines, and City of Los Angeles sewer lines. Metro assisted the contractor in obtaining exemptions as necessary for the City of LA nighttime work as well as for Peak Hour work hours.

Contract C0981R was terminated for convenience on April 14, 2015 and all remaining work was transferred to C0980 Contract. Contract C0981R was closed out and final payment processed.

## **BASE PROJECT SCOPE (Cont.)**

### **Professional Services**

#### **Contract MC070 – Construction Management Support Services**









Metro awarded the contract for Construction Management Support Services (CMSS) to ARCADIS, Inc. ARCADIS' Project Manager and other staff are co-located with Metro at the Integrated Project Management Office (IPMO) located at the Mangrove site. The service commitment has been extended through June 2019.

#### **Contract E0119 – Preliminary Engineering and Design Support Services During Construction**

Metro awarded this contract to CPJV. CPJV provided preliminary engineering services to support the EIR/EIS, prepared project definition documents for Contract C0980, and prepared the basis for final design development for Contract C0981. CPJV is currently performing design support during construction (DSDC) for the Project. The service commitment has been extended through June 2019.

## KEY MILESTONES SIX-MONTH LOOK AHEAD

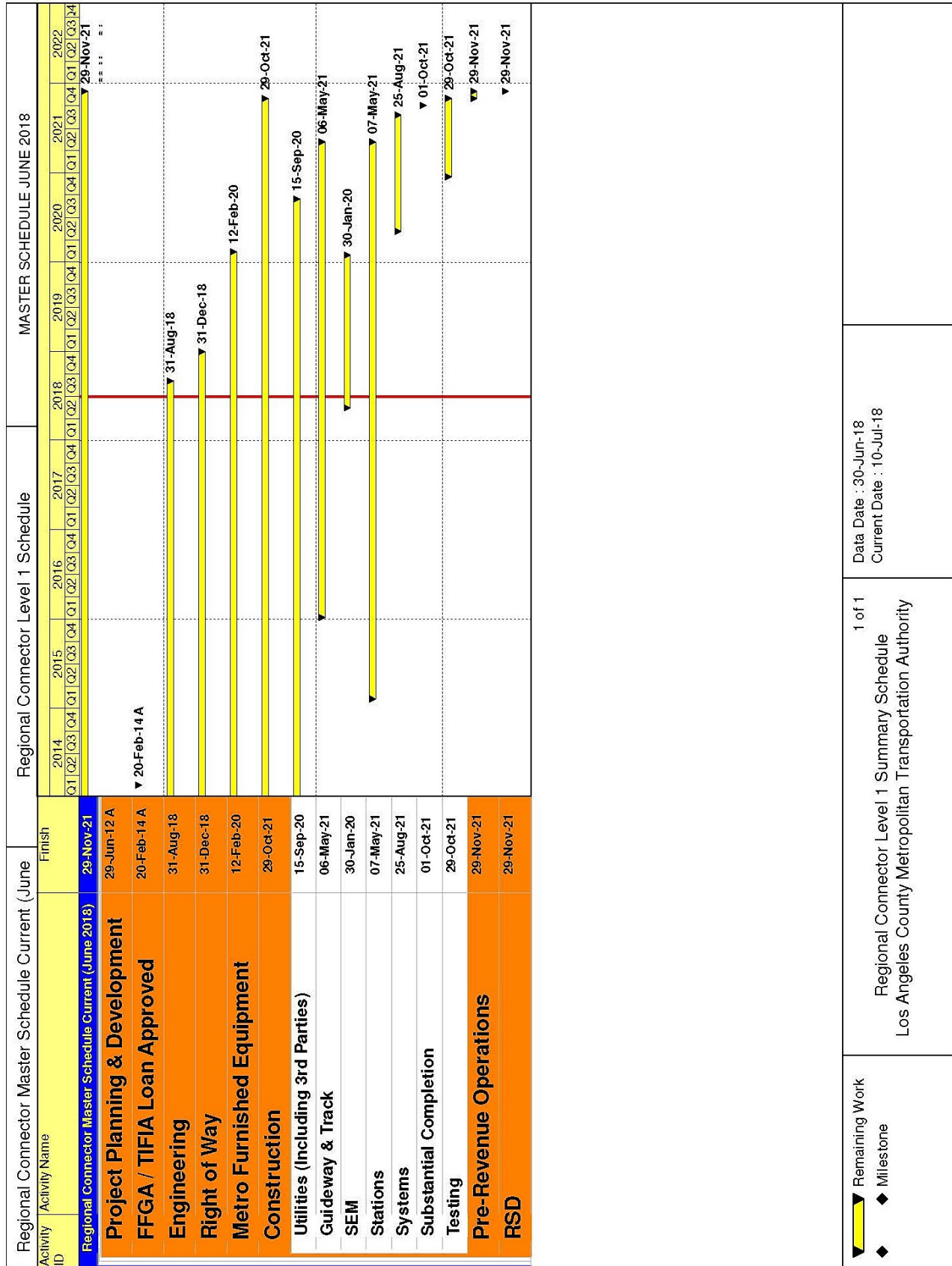
	Milestone Date	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18
Complete DWP Power cable pulling at 6th/Flower	06/09/18 A	⬡					
Complete underpinning columns at Historic Broadway Station	06/27/18 A	⬡					
Initiate SEM right drift excavation	07/05/18		⬡				
Complete excavation of Flower North (Between 4th and 5th)	07/09/18		⬡				
Complete remaining piles at 6th/Flower intersection	07/15/18		⬡				
Complete mock-up for floating slab track	07/19/18		⬡				
Civil Segment B - AFC Package submitted	07/30/18		⬡				
Civil Segment A - AFC Package approved	07/31/18		◆				
Complete temporary decking at 6th/Flower intersection	08/12/18			⬡			
Complete east hammer head invert at Grand Av Arts/Bunker Hill Station	08/13/18			⬡			
Approve mock-up for floating slab track	08/23/18			⬡			
Complete excavation of Historic Broadway station box (West)	08/27/18			⬡			
Complete entrance structure Invert of Historic Broadway Station	08/29/18			⬡			
Complete WYE Phase 2 excavation	08/29/18			⬡			
Civil Segment B - AFC Design approved	08/31/18			◆			
Complete west hammer head invert at Grand Av Arts/Bunker Hill Station	09/11/18				⬡		
Complete tunnel invert concrete	09/12/18				⬡		
Initiate SEM center drift excavation	09/13/18				⬡		
Complete coss passage final lining	09/25/18				⬡		
Complete excavation under Central Ave	10/09/18					⬡	
Complete SEM left drift excavation	10/11/18					⬡	
Initiate concourse level deck at Gran Av Arts/Bunker Hill Station	11/01/18						⬡
Initiate precast floating slab panel installation	11/27/18						⬡

 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

# PROJECT SUMMARY SCHEDULE

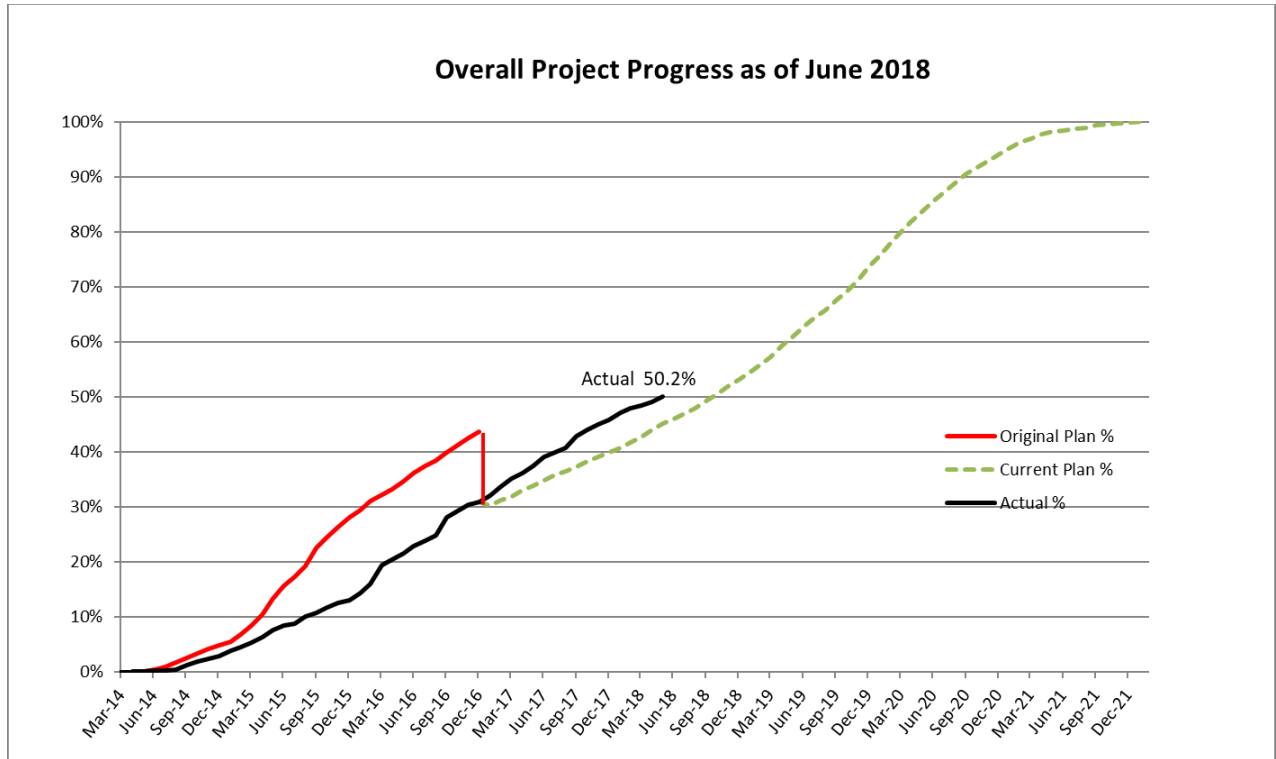


## SCHEDULE MEASUREMENTS

	Status	Change from Last Period	Comment
Forecast Revenue Service	11/29/2021	+3 CD	
Proposed TIFIA Revenue Service	2/25/2023	None	
Proposed FFGA Revenue Service	2/25/2023	None	
<b>Final Design Progress:</b>			
Contract C0980	99.8%	0%	Not impacting the critical path of the project
<b>Construction Contracts Progress:</b>			
Contract C0981R & C0980	46.9%	1.1%	

**Note:** Construction Progress Measurement has been modified to reflect exclusion of all General Requirements, Construction Mobilization, Design Mobilization, Final Design and Provisional Sum (Schedule C). Progress values include executed modifications and change orders.

## PROJECT PROGRESS STATUS

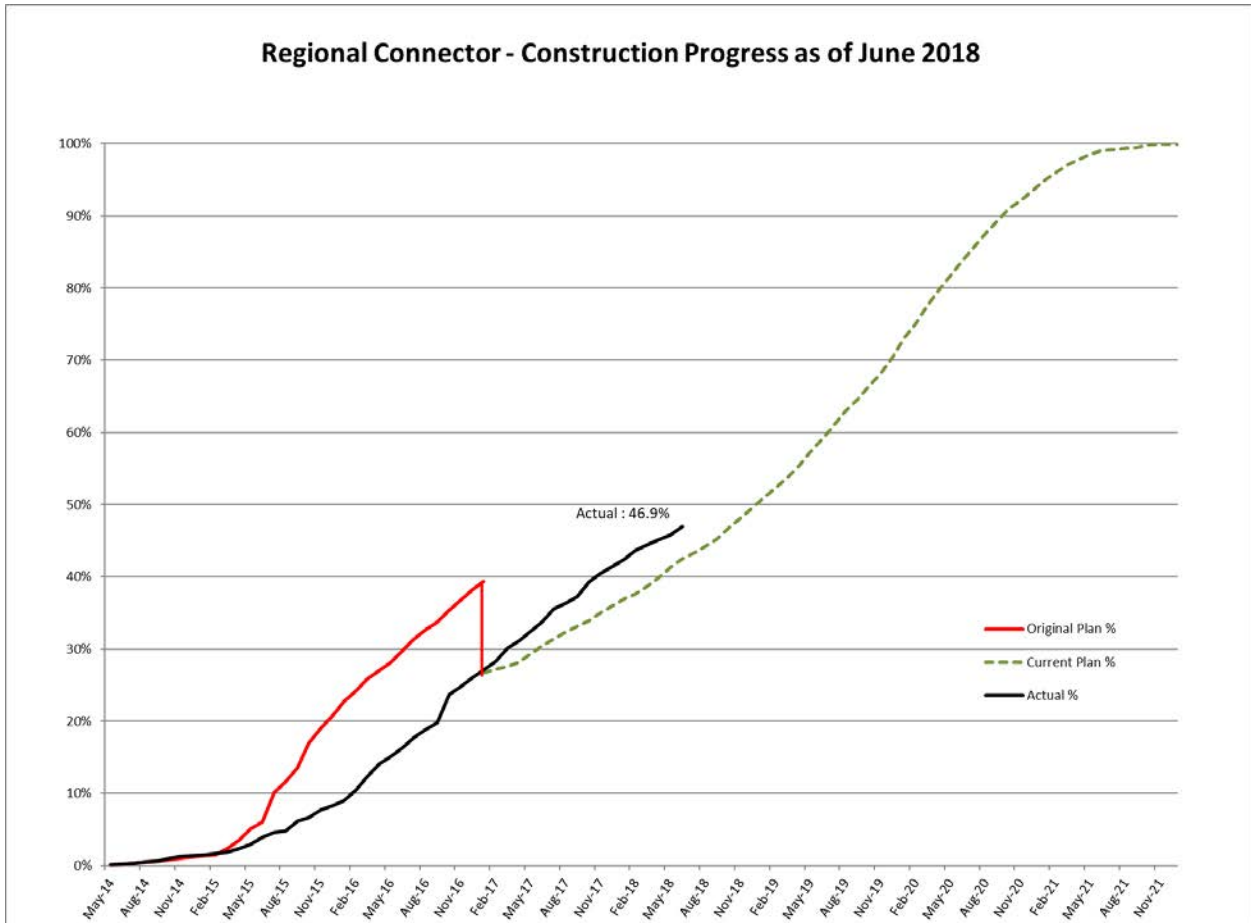
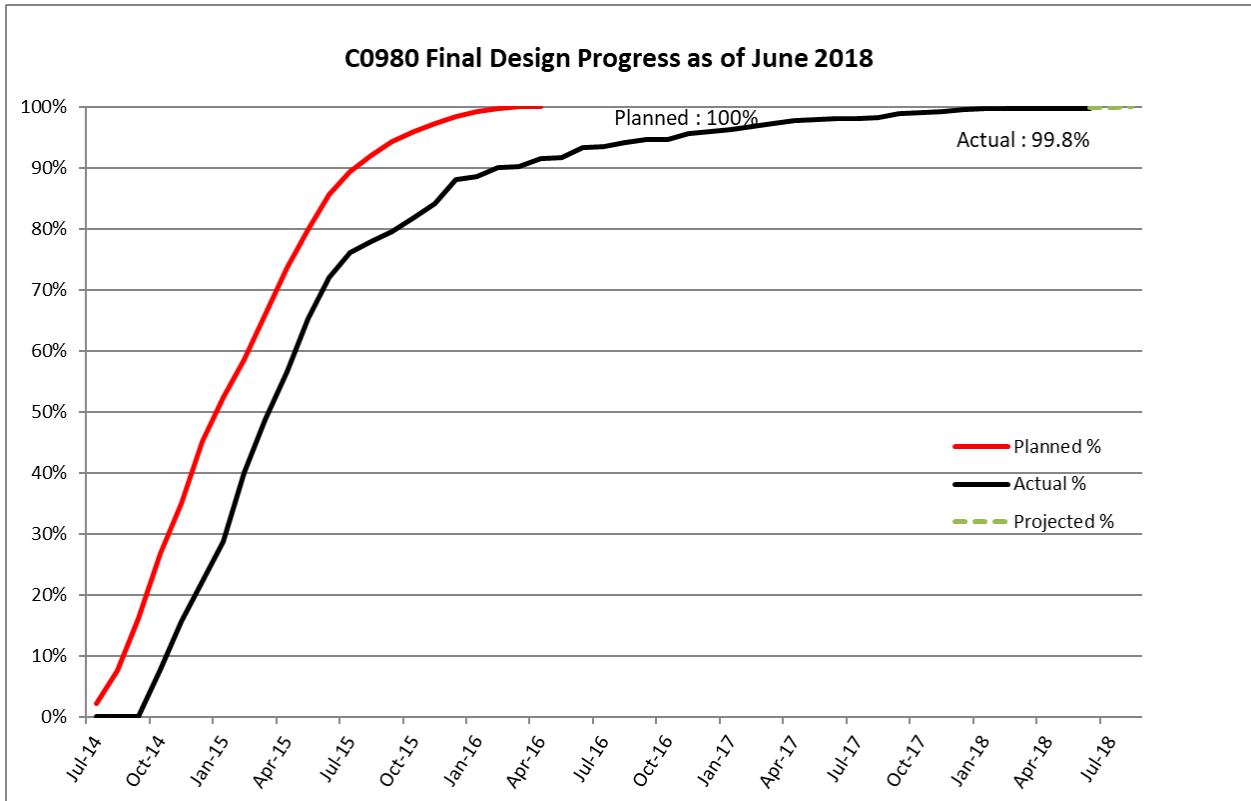


The above is based on the planned and actual progress of C0980 (Design-Build) as reflected in the re-baselined project schedule, and the C0981 (AUR) as-built schedule.

The cumulative overall project progress is 50.2%.

**Note:** Project Progress measurement methodology excludes: all General Requirements, Construction Mobilization, Design Mobilization and Provisional Sum (Schedule C). Values include executed modifications and change orders.

## PROJECT PROGRESS STATUS (Cont.)



## **MAJOR EQUIPMENT DELIVERY STATUS**

### **Light Rail Vehicles**

Metro is procuring four (4) LRVs for the Project. The vehicles will be built and delivered by Kinkisharyo International, LLC under Option 2 of Contract P3010. LRV design and design reviews as well as manufacturing of the prototype vehicles continued this period. Project deliveries are anticipated no later than February 2020.

### **UFS (Universal Fare System) & TVM (Ticket Vending Machines)**

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 is 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.

## DESIGN-BUILDER'S (C0980) LONG LEAD ITEM LIST

Activity Name	Early Finish	Need Date
FAB/DELIV EMERGENCY VENTILLATION FANS - HOPE (4)	1-Jun-18	28-Jun-19
FAB/DELIV EMERGENCY VENTILLATION FANS - BROADWAY (4)	1-Jun-18	12-Dec-19
FAB/DELIV ELEVATORS - 2ND/BROADWAY	4-Jun-18	21-Mar-21
FAB/DELIV 2ND/HOPE TPSS	8-Jun-18	17-Apr-19
FAB/DELIV OCS POLES / EQUIPMENT	8-Jun-18	29-Dec-20
FAB/DELIV OCR FOR TUNNEL	8-Jun-18	29-Jan-21
FAB/DELIV ESCALATORS - 2ND/BROADWAY	9-Jun-18	25-Feb-21
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 MASONRY SUBCONTRACTOR	24-Jun-19	21-Oct-20
PROCURE STEEL (PERMANENT) SUBCONTRACTOR	24-Jun-19	12-Mar-21
PROCURE DOORS & HARDWARE SUBCONTRACTOR	1-Jul-19	19-Feb-21
PROCURE TRACK SUBCONTRACTOR - PERMANENT	2-Jul-19	28-Jan-20
PROCURE GLAZING SUBCONTRACTOR	15-Jul-19	29-Apr-21
PROCURE ARCHITECTURAL PRECAST PAVER SUBCONTRACTOR	18-Jul-19	21-Apr-21
PROCURE STATION SIGNS SUBCONTRACTOR	23-Jul-19	22-Oct-21
PROCURE PRECAST COMM STRUCTURE PURCHASE ORDER	26-Jul-19	19-Apr-21
PROCURE STAINLESS STEEL SUBCONTRACTOR	2-Aug-19	18-Feb-21
PROCURE CAULKING & SEALANTS SUBCONTRACTOR	9-Aug-19	21-Jan-21
PROCURE METAL CEILING SUBCONTRACTOR	14-Aug-19	8-Apr-21
PROCURE SHEET METAL SUBCONTRACTOR	22-Aug-19	10-Jun-21
PROCURE PAINT SUBCONTRACTOR	4-Sep-19	8-Apr-21
PROCURE FLUID APPLIED WATERPROOFING SUBCONTRACTOR	4-Sep-19	3-Feb-21
PROCURE DRYWALL & FRAMING SUBCONTRACTOR	18-Sep-19	6-Oct-21
PROCURE FLOORING SUBCONTRACTOR	27-Sep-19	28-Oct-21
PROCURE TILE SUBCONTRACTOR	27-Sep-19	8-Mar-21
PROCURE SPRAY ON ACCOUSTICAL FINISH SUBCONTRACTOR	7-Oct-19	5-Mar-21
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
PROCURE TERRAZZO SUBCONTRACTOR	11-Nov-19	10-Nov-21
PROCURE PRECAST STRUCTURAL ELEMENTS SUBCONTRACTOR	18-Nov-19	11-Aug-21
PROCURE ARCHITECTURAL CONCRETE PAVING SUBCONTRACTOR	25-Nov-19	7-Apr-21
PROCURE AC SUBCONTRACTOR	12-Dec-19	28-May-21
PROCURE MILLING SUBCONTRACTOR	12-Dec-19	28-May-21
PROCURE PCC PAVING SUBCONTRACTOR	12-Dec-19	28-May-21
FAB/DELIV GLAZING SPIDERS - ALL STATIONS	18-Dec-19	19-May-21
PROCURE BALLASTED TRACK - NORTH ALAMEDA LEG	23-Dec-19	15-Sep-21

## DESIGN-BUILDER'S (C0980) LONG LEAD ITEM LIST (Cont.)

Activity Name	Early Finish	Need Date
PROCURE GRANITE STONework SUBCONTRACTOR	29-Jan-20	4-Oct-21
FAB/DELIV EMERGENCY BOOSTER FANS (12)	6-Feb-20	26-Aug-21
PROCURE PLATE PURCHASE ORDER	11-Aug-20	16-Oct-20
PROCURE MSE PANEL PURCHASE ORDER	11-Aug-20	16-Oct-20

## CRITICAL PATH NARRATIVE

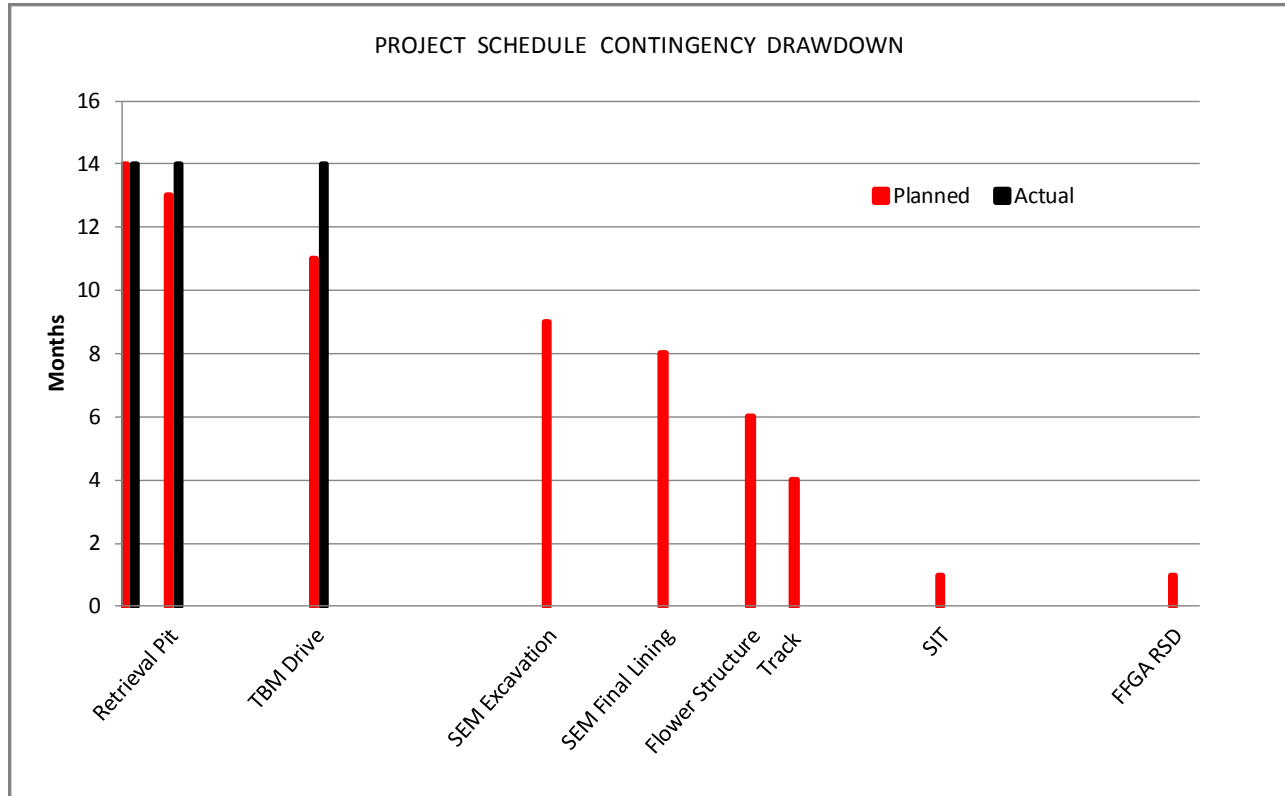
### **Critical Path (C0980):**

The critical path in *June* remained the same as portrayed since November 2017.

Excavation work on the east side of the Historic Broadway Station was completed and SEM crossover excavation commenced. The critical path continues through the SEM crossover structure east of the Historic Broadway Station. Once the crossover structure is complete, track work installation will follow. The critical path continues through systems installation and testing from 1st/Alameda to 7th/Flower, followed by systems integration testing and pre-revenue operations.

The critical path was *delayed three days due to a slower than anticipated start-up of SEM excavation and removal of three DSC piles during SEM crossover excavation.*

## PROJECT SCHEDULE CONTINGENCY DRAWDOWN



## PROJECT SCHEDULE CONTINGENCY DRAWDOWN ANALYSIS

The project schedule contingency drawdown model is based on the proposed FFGA RSD date of February 25, 2023.

Since the baseline schedule was re-cast in January 2017, 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 STATUS

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	250	249,281	250	247,316	1,479	146,728	707	253,457	4,176
20	STATIONS, STOPS, TERMINALS, INTERMODAL	354,268	219,477	0	229,919	-12	229,906	754	53,819	1	230,160	242
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	-300	598,417	155	580,906	4,916	420,973	-168	619,306	20,889
50	SYSTEMS	69,667	73,848	0	73,424	0	63,736	1,206	11,932	-743	75,055	1,631
	CONSTRUCTION SUBTOTAL (10-50)	846,343	920,468	-50	1,151,041	393	1,121,864	8,355	633,451	-202	1,177,978	26,937
60	ROW, LAND, EXISTING IMPROVEMENTS	115,889	74,208	0	92,742	80	52,141	101	51,929	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	50	379,338	525	292,753	4,119	260,634	-16	387,415	8,078
	SUBTOTAL (10-80)	1,239,963	1,268,925	0	1,639,395	997	1,483,034	12,575	947,692	-218	1,658,079	18,684
90	UNALLOCATED CONTINGENCY	135,399	126,892	0	89,946	0	0	0	0	218	71,262	-18,684
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	997	1,483,034	12,575	947,692	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	-9	18,940	0	20,425	0
	TOTAL PROJECTS 400228 & 460228 (EVN/PLAN'G)	0	24,200	0	26,500	0	26,500	-9	25,015	0	26,500	0
	400228, 460228, 860228 TOTAL	1,402,932	1,427,132	0	1,770,142	997	1,509,534	12,566	972,707	0	1,770,142	0

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 06/30/2018. ACTUALS FROM JUNE 2018 ARE PRELIMINARY DUE TO PENDING FISCAL YEAR-END CLOSURE. METRO AND TRIBUNE AGREED ON REIMBURSEMENT OF ~\$1.6 MILLION RELATED TO 2ND/BROADWAY OVERBUILD.

## PROJECT COST ANALYSIS – 860228

### Original Budget:

The Original Budget of \$1.427 billion reflects the April 2014 Board Approved Life-of-Project (LOP), 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 \$997 thousand this period to \$1.51 billion which represents 85.3% of the Current Budget. The increase is related to RCC executed modifications, *Real Estate and Professional Services*.

### Expenditures:

Expenditures are cumulative through *June* 2018. Expenditures increased by \$12.6 million this period for costs associated with C0980 Design Build contract, Engineering Management Support, Metro Project Administration, Construction Management Support Service, Legal Services, Third Party Master Cooperative Agreements with the City of LA, Community Relations, and Environmental Consultant Services. The \$972.7 million in expenditures to date represents 55.0% of the Current Budget.

### Current Forecast:

The total current forecast remains the same as the total current budget.

## PROJECT COST STATUS (Cont.)

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	0	10,480
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	0	10,480
60	ROW, LAND, EXISTING IMPROVEMENTS	27,748	0	27,748	0	27,748	0	22,498	0	0	27,748
70	VEHICLES	0	0	0	0	0	0	0	0	0	0
80	PROFESSIONAL SERVICES	650	0	650	0	650	26	308	0	0	650
SUBTOTAL (10-80)		38,878	0	38,878	0	38,878	26	22,806	0	0	38,878
90	UNALLOCATED CONTINGENCY	1,113	0	1,113	0	0	0	0	0	0	1,113
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	26	22,806	0	0	39,991
861228 TOTAL		39,991	0	39,991	0	38,878	26	22,806	0	0	39,991

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 06/30/2018. ACTUALS FROM JUNE 2018 ARE PRELIMINARY DUE TO PENDING FISCAL YEARE-END CLOSURE.

## PROJECT COST ANALYSIS – 861228

**Original Budget:**

The Original Budget, Current Budget, and Current Forecast reflect the Board Approved Life-of-Project (LOP) budget established April 24, 2014.

**Current Budget:**

There is no change to the Budget for this period.

**Commitments:**

Commitments reflect actions through *June* 2018.

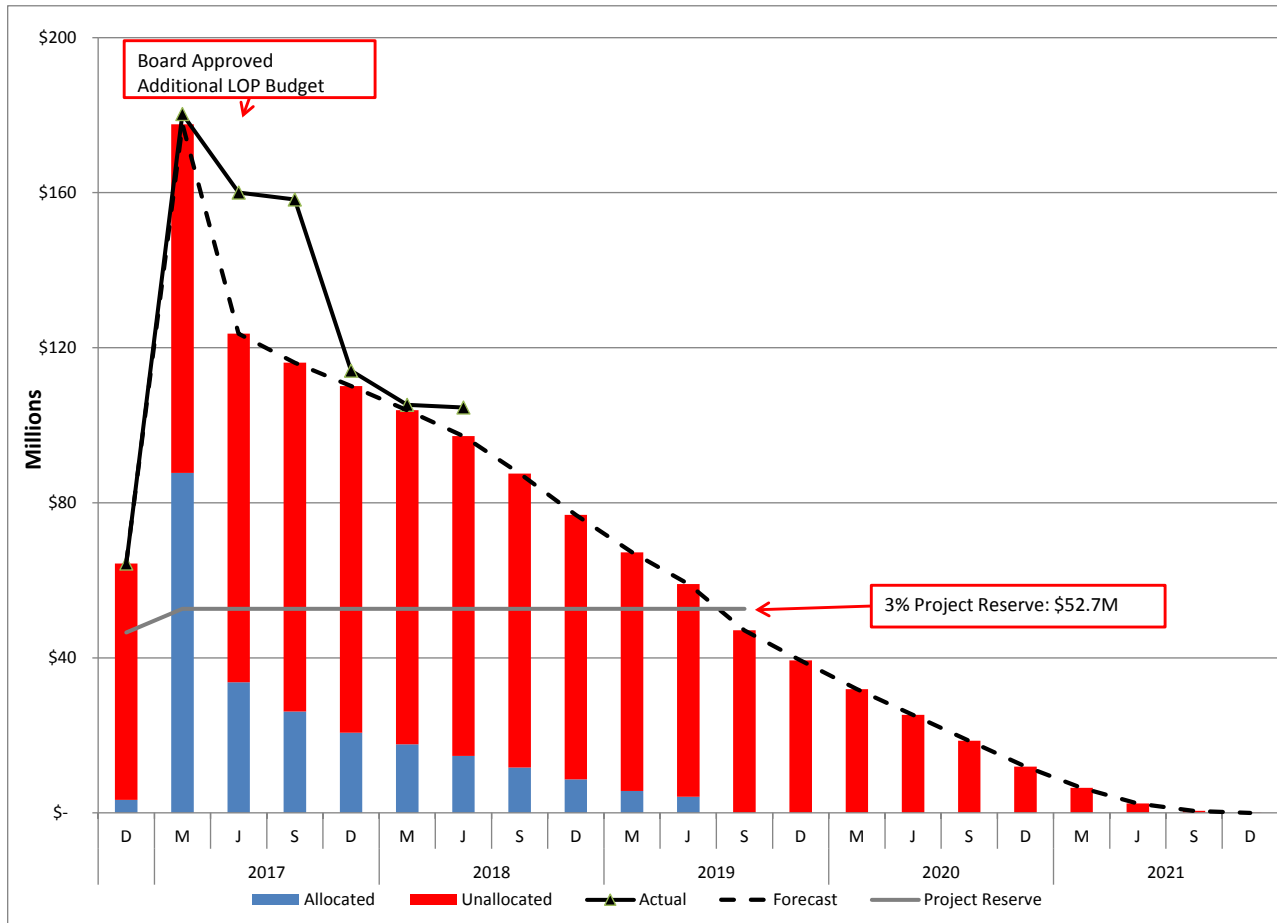
**Expenditures:**

Expenditures are cumulative through *June* 2018. Expenditures increased by \$26 thousand this period for costs associated with Community Relations. The \$22.8 million in expenditures through *June* 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 Life-of-Project Budget to \$1.756 billion, which included increasing the unallocated contingency to \$89 million and allocated contingency to \$92.8 million. A revised drawdown plan for unallocated contingency, correlated to anticipate risk trends, was developed to monitor and measure drawdowns moving forward.

Included in the project cost contingency 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.

The project cost contingency drawdown curve is based on a 2021 Revenue Service date.

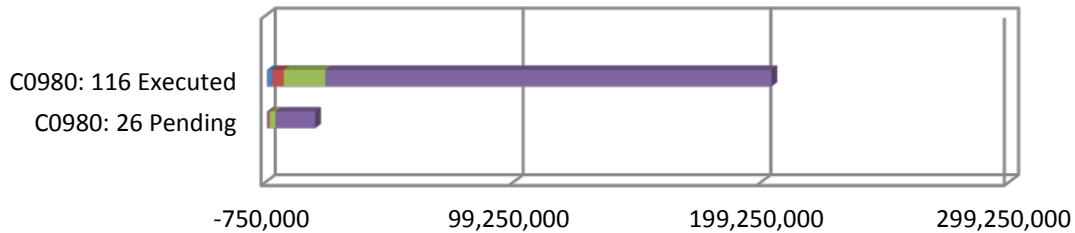
This month there was \$339 thousand drawdown from contingency. The remaining total project contingency (allocated and unallocated) remains as \$104.6 million.

## COST CONTINGENCY DRAWDOWN ANALYSIS (Cont.)

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	0	0	0	89,946
Allocated Contingency	86,345	92,809	(77,812)	(339)	(78,151)	14,658
<b>Total Contingency</b>	<b>211,263</b>	<b>182,754</b>	<b>(77,812)</b>	<b>(339)</b>	<b>(78,151)</b>	<b>104,603</b>

## SUMMARY OF CONTRACT MODIFICATIONS

### Contract Modifications (MODs) by Cost Level



	C0980		Total
	116 Executed	26 Pending	
■ Under \$100K	2,122,568	344,979	2,467,547
■ \$100K to \$250K	4,548,999	715,650	5,264,649
■ \$250K to \$1M	16,761,970	2,230,000	18,991,970
■ Over \$1M	180,009,237	16,077,878	196,087,115
<b>Total Contract MODs</b>	<b>203,442,774</b>	<b>19,368,507</b>	<b>222,811,281</b>
<b>Contract Award Amount</b>	<b>927,226,995</b>	<b>927,226,995</b>	
<b>% of Contract MODs</b>	<b>21.9%</b>	<b>2.1%</b>	

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 *sixteen* (116) changes with a total value of \$203.4 million have been executed since NTP of Contract C0980. An additional twenty-six (26) changes, with a total estimated value of \$19.3 million are pending.

## DISADVANTAGED BUSINESS ENTERPRISE (DBE) STATUS

### Contract C0980 Regional Connector Transit Project Design-Build

As of May 2018:

- **DBE Goal – Design**  
 A numerically expressed percentage of funds apportioned to Design Contracts calculated based upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area: 20%
  - **Current DBE Commitment Design**  
 Total DBE Committed Dollars divided by Total Contract Value for Design or Construction \$13.8M  
(22.63%)
  - **Current DBE Participation**  
 Total amount paid to date to DBEs divided by the amount paid to date to Prime: 27.02%
- Twelve (12) Design DBE sub-consultants have been identified to date.

- **DBE Goal – Construction**  
 A numerically expressed percentage of funds apportioned to Construction Contracts calculated based upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area: 18%
  - **Current DBE Commitment Construction**  
 Contract commitment divided by current contract value for Construction: \$191.9M  
(18%)
  - **Current DBE Participation**  
 Total amount paid to date to DBEs divided by the amount paid to date to Prime: 12.46%
- Seventy-six (76) Construction DBE sub-contractors have been identified to date.

## PROJECT LABOR AGREEMENTS (PLA) STATUS

### Contract C0980 Regional Connector Transit Project Design-Build

As of May 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** 58.36%
- **Apprentice Worker Goal**  
 Construction work to be performed by Apprentices 20.00%
- **Apprentice Worker Current Attainment** 16.27%
- **Disadvantaged Worker Goal**  
 Construction work to be performed by Disadvantaged Workers who are residents of the United States 10.00%
- **Disadvantaged Worker Current Attainment** 7.14%

## FINANCIAL/GRANT STATUS

### Status of Funds Anticipated

June 2018

<b>FEDERAL - CMAQ</b>	METRO SUBMITTED ON NOVEMBER 25, 2013 A GRANT APPLICATION OF \$64.0M TO THE FTA. GRANT APPROVAL WAS EXECUTED ON SEPTEMBER 24, 2014. FUNDS ARE AVAILABLE FOR DRAW DOWN. ADDITIONAL CMAQ FUNDS WILL BE OBLIGATED IN FY2018/2019.
<b>FEDERAL - SECTION 5309 NEW STARTS</b>	METRO SUBMITTED ON NOVEMBER 25, 2013 A GRANT APPLICATION OF \$65.0 M TO THE FTA. GRANT APPROVAL WAS EXECUTED ON SEPTEMBER 23, 2014. METRO SUBMITTED ON JUNE 11, 2015 A GRANT AMENDMENT OF \$100M. GRANT AWARDED AUGUST 2015. FUNDS ARE AVAILABLE FOR DRAW DOWN. METRO SUBMITTED A GRANT AMENDMENT OF \$100M IN JULY 2016. GRANT AMENDMENT WAS EXECUTED ON AUGUST 18, 2016. FUNDS ARE AVAILABLE FOR DRAW DOWN. METRO SUBMITTED A GRANT AMENDMENT OF \$100M IN JULY 2017. GRANT AMENDMENT WAS EXECUTED ON SEPTEMBER 22, 2017 AND FUNDS ARE AVAILABLE FOR DRAWDOWN
<b>MEASURE R - TIFIA LOAN:</b> (Transportation Infrastructure Finance & Innovation Act)	A TIFIA LOAN AGREEMENT BETWEEN THE DEPARTMENT OF TRANSPORTATION AND METRO FOR \$160M WAS EXECUTED ON FEBRUARY 20, 2014. THE FIRST DISBURSEMENT OF \$61,864,368 WAS SPLIT INTO TWO PARTS. RECEIVED THE FIRST PAYMENT OF \$25.2 MILLION 4TH QUARTER FY2016. RECEIVED THE SECOND PAYMENT OF \$36.7 MILLION 1ST QUARTER FY2017. THE SECOND DISBURSEMENT OF \$55.9 MILLION IS AVAILABLE AND WILL BE SPLIT INTO TWO PARTS. WE RECEIVED THE FIRST PAYMENT OF \$29.7 MILLION FIRST QUARTER FY2018 WE RECEIVED THE SECOND PAYMENT OF \$26.2 MILLION SECOND QUARTER FY2018 THE THIRD DISBURSEMENT OF \$17.9 MILLION WILL BE AVAILABLE SECOND QUARTER FY2019.
<b>CITY OF LA</b>	FUNDING AGREEMENT OF \$42M WITH THE CITY OF LA WAS APPROVED IN JUNE 2014. THE FIRST PAYMENT DRAWDOWN OF \$5.0M WAS IN JUNE 2016. THE SECOND PAYMENT DRAWDOWN OF \$7.0M WAS BILLED IN JUNE 2017. THE THIRD PAYMENT DRAWDOWN OF \$6.0M WAS BILLED IN MARCH 2018.

### Status of Funds by Source

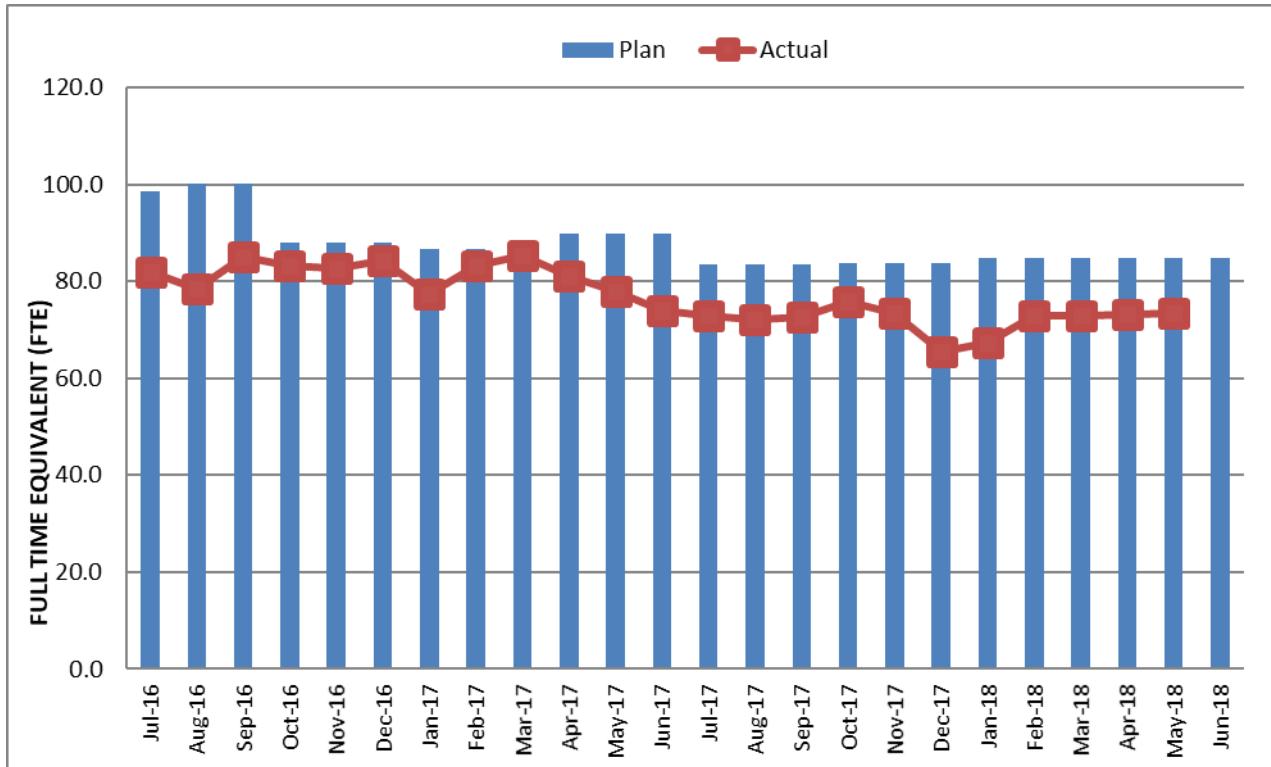
June 2018

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%	\$362.223	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	53%	\$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	\$252.657	92%	\$170.814	53%	\$170.814	62%
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%
<b>TOTAL</b>	<b>\$1,427.132</b>	<b>\$1,755.840</b>	<b>\$1,093.712</b>	<b>\$1,509.534</b>	<b>86%</b>	<b>\$972.707</b>	<b>55%</b>	<b>\$968.237</b>	<b>55%</b>

EXPENDITURES ARE CUMULATIVE THROUGH JUNE 30, 2018. ACTUALS FROM JUNE 2018 ARE PRELIMINARY DUE TO PENDING FISCAL YEAR-END CLOSURE.  
METRO AND TRIBUNE AGREED ON REIMBURSEMENT OF 1.6 MILLION RELATED TO 2ND/BOARDWAY OVERBUILD.  
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)

## STAFFING STATUS

### TOTAL PROJECT STAFFING – METRO AND CONSULTANTS



Data through May 2018

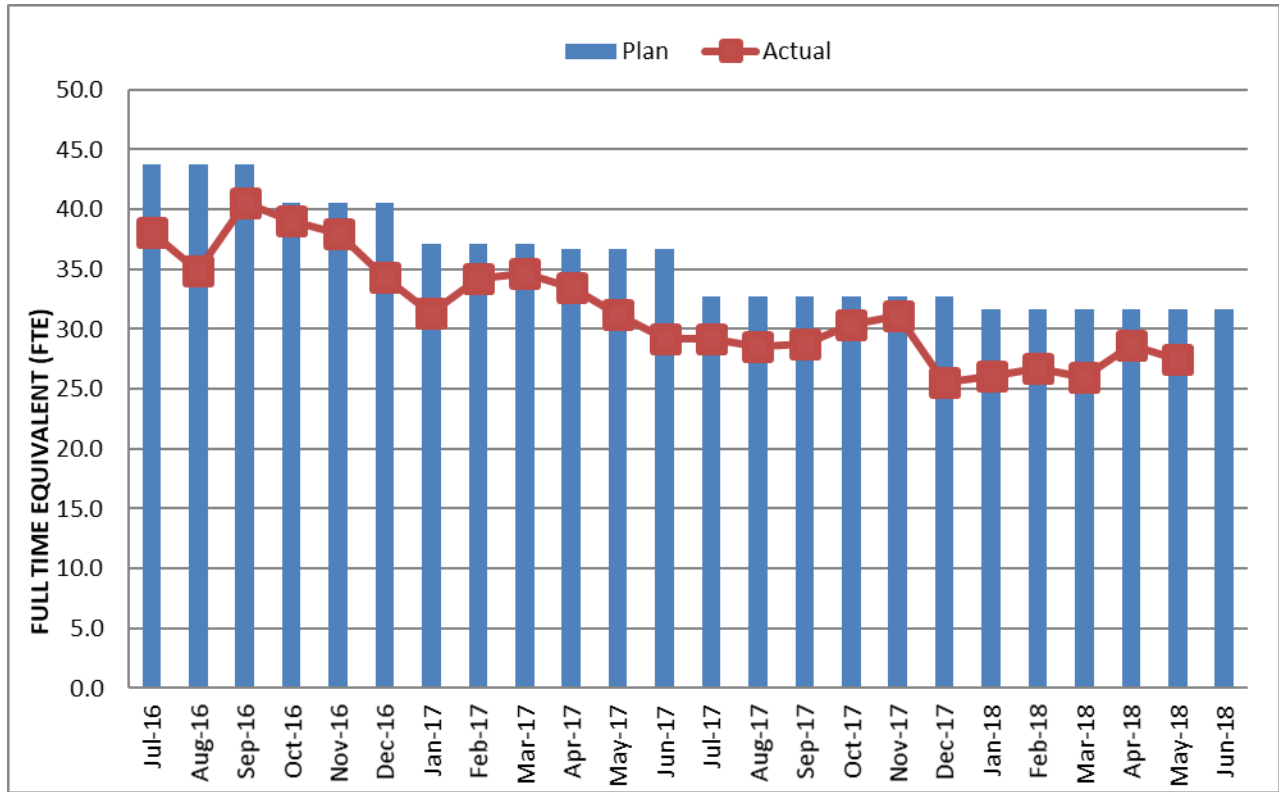
### TOTAL PROJECT STAFFING

The overall FY18 Total Project Staffing plan averages 84.2 FTE's per month.

For May 2018, there were a total of 27.5 actual FTEs for Metro's Project Administration staff and 46.0 FTEs for consulting staff. The total actual project staffing for May 2018 was 73.5 FTEs versus FTEs planned (84.8).

The shortfall in staffing has not impacted Metro's ability to effectively manage the Project. Review of staffing plans is on-going to ensure needs are addressed.

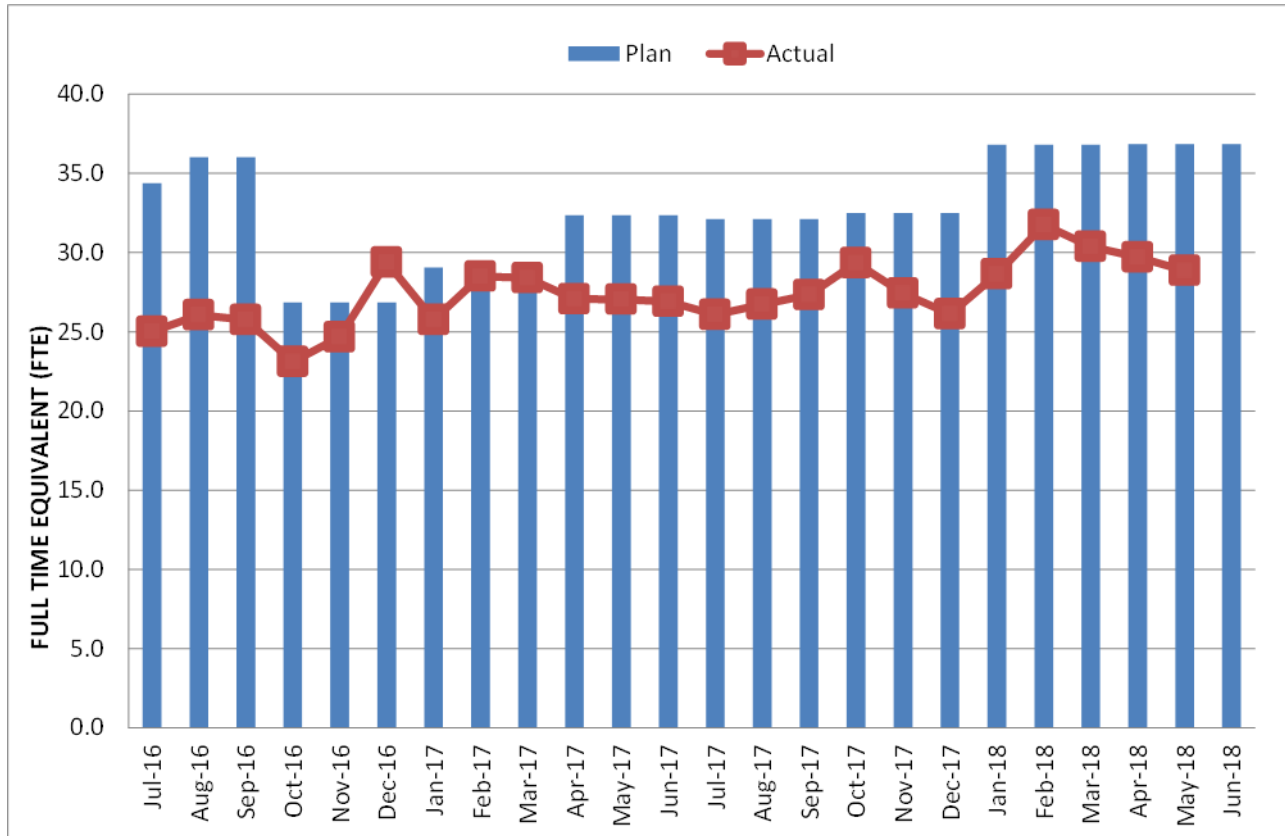
### STAFFING STATUS (Cont.) METRO STAFF



Data through May 2018

## STAFFING STATUS (Cont.)

### CONSTRUCTION MANAGEMENTSUPPORT SERVICES CONSULTANT

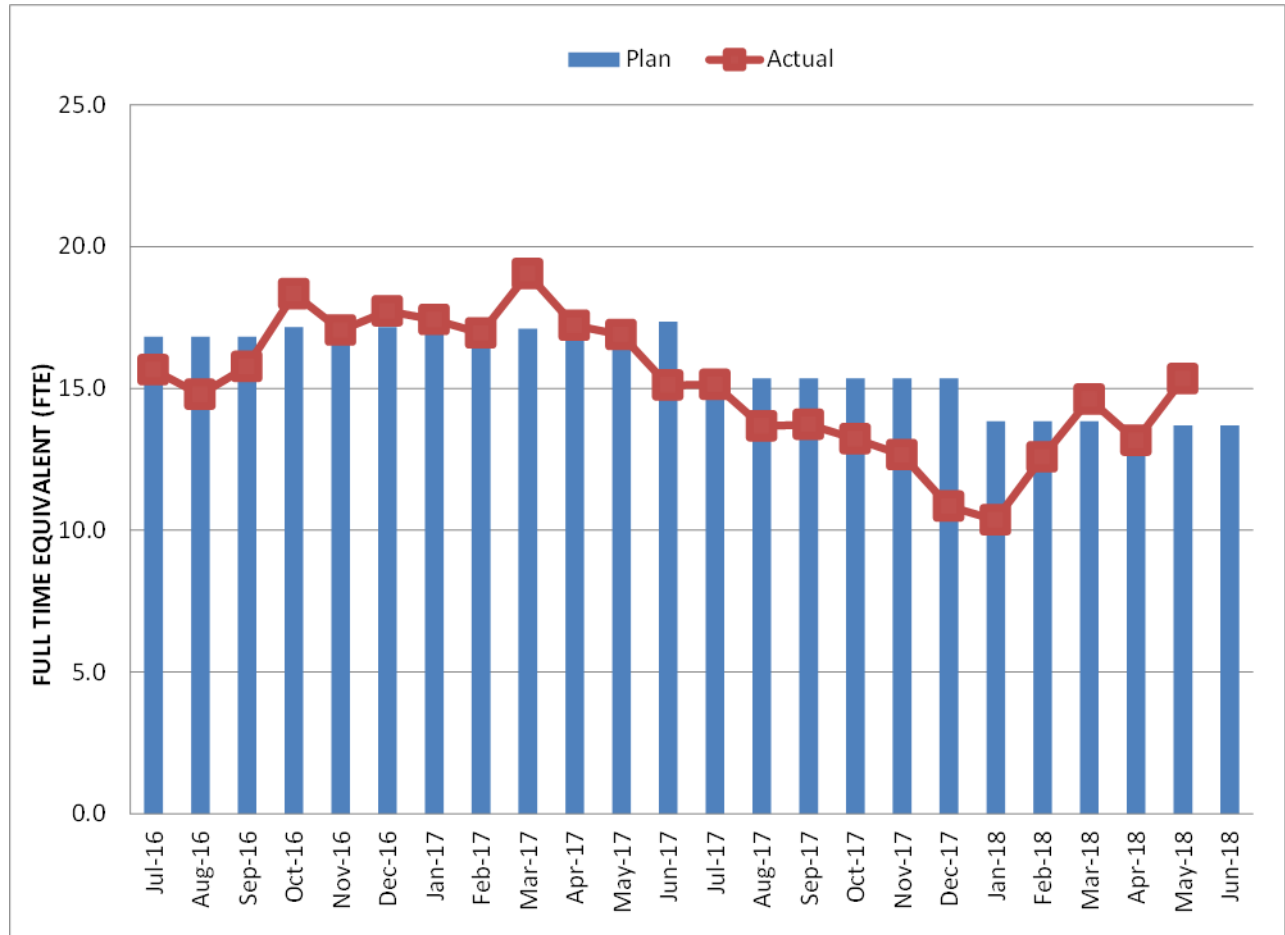


Data through May 2018

**Note:**

- a) The Actual FTEs for the month are based on the FTE hours submitted in the invoice for that month.

### STAFFING STATUS (Cont.) ENGINEERING SERVICES CONSULTANTS

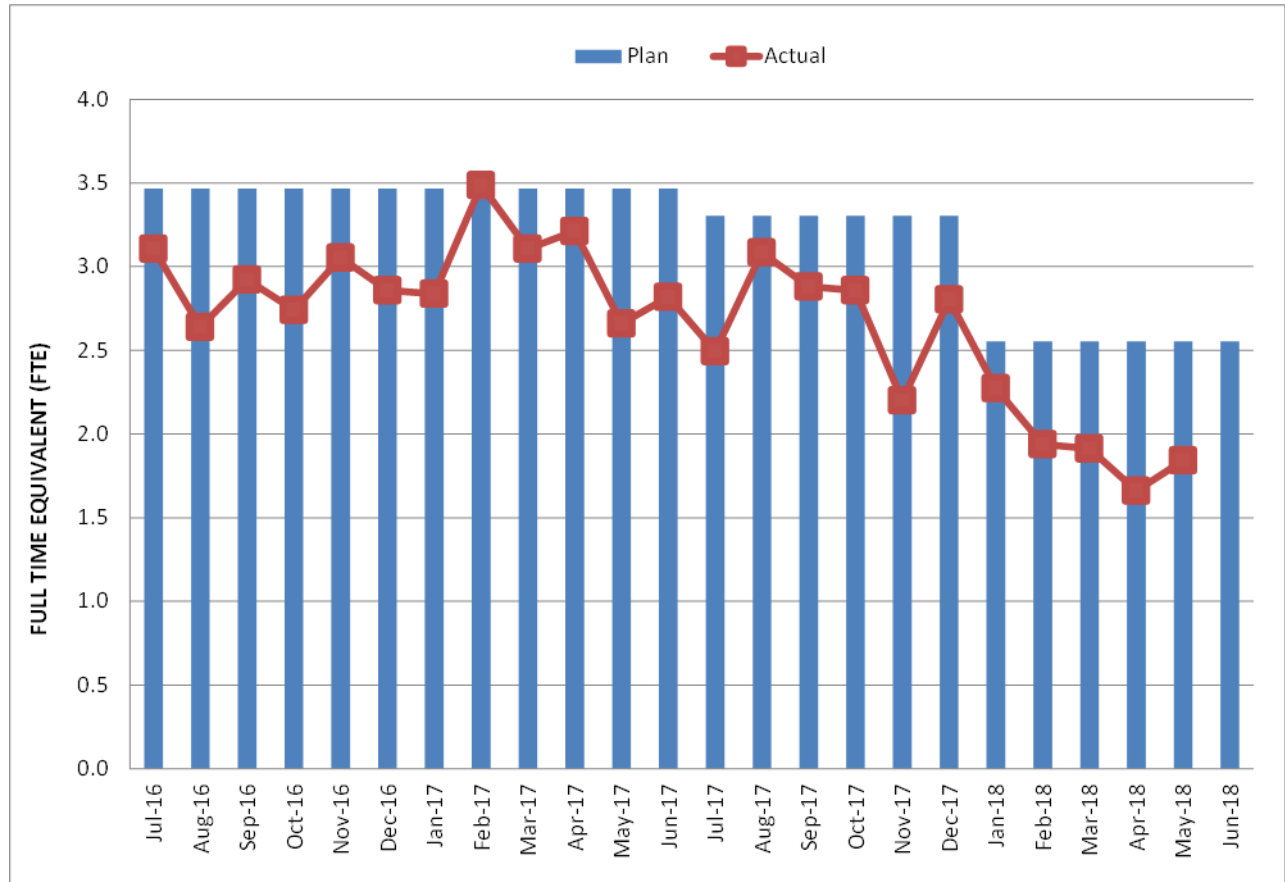


Data through May 2018

**Note:**

- a) The Actual FTEs for the month are based on the FTE hours submitted in the invoice for that month.

### STAFFING STATUS (Cont.) PROJECT MANAGEMENT SERVICES CONSULTANTS



Data through May 2018

## REAL ESTATE STATUS

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	
<b>Sub Total</b>	<b>34</b>	<b>21</b>	<b>7</b>	<b>23</b>	<b>23</b>	<b>12</b>	<b>5</b>	<b>20</b>	<b>1</b>
Pedestrian Bridge	420-1, 420-2, 420-3								1
Mangrove Fan Plant	TBD								1
<b>Grand Total</b>	<b>36</b>	<b>21</b>	<b>7</b>	<b>23</b>	<b>23</b>	<b>12</b>	<b>5</b>	<b>20</b>	<b>3</b>

## REAL ESTATE ACQUISITION

### OPEN REAL ESTATE MATTERS

*No changes to below items for the month of June.*

#### **City of Los Angeles (Mangrove Parcels)**

- An offer was made on March 16, 2018 and Metro is awaiting a response from the City. The Project requested that Real Estate proceed to exercising the option to extend the 5-year easement for an additional three (3) years, however the city wants to defer negotiations of the extension until the fan plant transaction is completed.

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

- LADWP has agreed to a compromise in the valuation of the Property. The LADWP Board approved the recommended purchase price at its June 22nd meeting. Staff is working with County Counsel and LADWP on the Purchase and Sale Agreement.
- The Project and LADWP are working on an agreement regarding the mitigation requirements and the cost associated with the work. Follow-up interface between the parties continue.

## QUALITY ASSURANCE STATUS

### C0980 Regional Connector D/B

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

- 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 performed a surveillance of Concrete Wall Pour 90 at Grand Av Arts/Bunker Hill Station. The concrete placement was acceptable. No anomalies were noted.*
- *Metro QA performed a surveillance of the 2nd Lift Concrete placement for Cross Passage #3. After form removal it was determined that the concrete was defective due to non-consolidation of the concrete. NCR-0041 was drafted by RCC and is now with the Engineer of Record to determine what repairs will be performed to bring the concrete to acceptable standards. A follow-up surveillance will be performed by Metro QA during the repair process.*
- *Metro QA conducted the yearly audit of the RCC Quality Management System. Three (3) findings were issued to RCC. Finding #1 was regarding the document approval and control process; items identified during an audit should have been subject to a "Finding" and a corrective action request issued. Finding #2 was, in some cases, for verification for closure of NCRs not per actual implemented correction/repair. Finding #3 was for documents missing form numbers and being out of control or not following the forms as referenced in the RCC Quality Procedure Manual. Three (3) Quality Action Requests were issued, one for each finding. Metro Quality Management met with RCC Quality Management regarding RCC's response to the QARs. Metro Quality Management will determine any necessary action to take regarding these responses if necessary.*
- *RCC NCR #38 for a Damaged Conduit at 1st/Central Station remains open. This NCR is awaiting repair from RCC Construction.*
- *Concrete aggregate for concrete mix designs requirement 1" aggregate have failed testing repeatedly. RCC is to meet with Robertson's – the aggregate and concrete supplier. The results of that meeting will be reported in the next reporting period.*
- RCC testing performed to date are as follows:
  1. Portland cement concrete 28-day test results: 1105; number accepted: 1105
  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: 14,045; number accepted: 14,045

## ENVIRONMENTAL STATUS

- 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 Best Management Practices. Weather was dominantly dry, and prone to favor fugitive dust conditions. Therefore, daily street sweeping continued throughout the month.
- Metro *will review* the 21<sup>st</sup> Quarterly Mitigation *and Monitoring Report covering February 2018 through April 2018 with the PMOC next month. The team has also begun preparation of the 22nd Quarterly Mitigation Monitoring and Reporting Plan covering May 2018 to July 2018 and will be submitting the report to the FTA no later than August 14, 2018.*
- Metro has begun preparation of the 7th Semi-Annual Cultural Resources Report. The report will be submitted to the FTA and SHPO no later than July 31, 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, planning has begun to monitor noise and vibration on 2nd Street adjacent to sensitive receptors as the work advances towards the Higgins Building.*

## CONSTRUCTION AND COMMUNITY RELATIONS STATUS

### Construction Relations

- Responded and addressed project related inquiries from the public received on the project 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: *Sidewalk repair on Flower St*, *geotechnical monitor installation at 2nd/Broadway*, *deck panel repairs on Broadway and 1<sup>st</sup>/Alameda*, and *fire testing and rescue drills at 1st/Central and 2nd/Broadway*.
- Distributed *nine (9)* 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 *51* stakeholders throughout the project alignment on the above activities.
- Provided updates on the progress of cut & cover *activities* on *Flower St* and the *station construction at Hope St at the Community Leadership Council Flower St/Financial District and Grand Ave Arts/Bunker Hill Station*. Updates on *Eat, Shop, Play* business mitigation accomplishment for the month of *June* were also discussed.
- 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

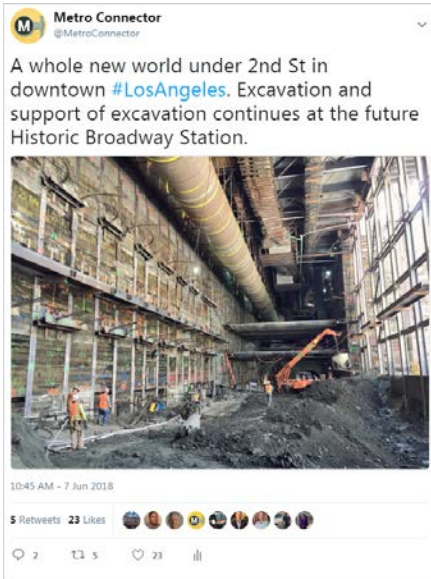
- Promotion of local businesses this month included *Rock & Reilly's Lunch Meet-up on Flower St*, *Vendor Day at Metro Headquarters with the participation of The Library Store* and catering opportunities for *Cherry Pick Café* at two *Metro sponsored events* valued at over *\$4,000*.



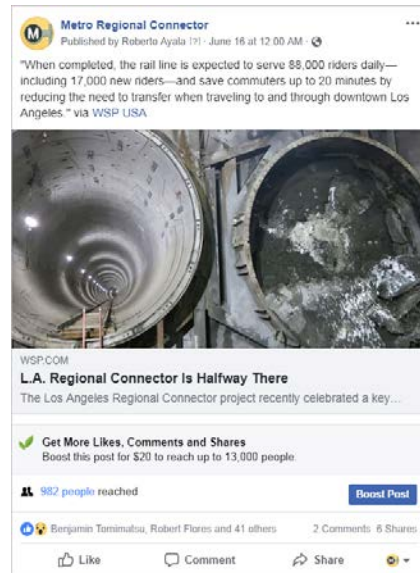
## CONSTRUCTION AND COMMUNITY RELATIONS STATUS (Cont.)

### Social Media Outreach and Marketing Efforts

- Trending stories on social media included *exclusive views of the construction of the future Historic Broadway Station under 2nd St* and a *post on the mobility benefits Regional Connector will have on LA County.*



3.0k impressions, 176 engagements



982 people reached; 52 reactions, 72 post clicks

### Community Relations

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

## CREATIVE SERVICES STATUS

### Art Program

- Participated in design coordination meetings
- *Coordinated with project team and Procurement in preparation for the release of RFPs for mosaics fabricators to translate artists' designs for installation on the concourse of two stations.*
- Continued to support mitigation efforts
- Continued design development for corridor artworks

### Signage & Environmental Graphic Design

- Responded to RFIs and Submittals
- Participated in Design Build document reviews

## **SAFETY & SECURITY STATUS**

### **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 insure 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 *June 2018*.
- *During June RCC and Metro staff conducted a reconciliation of RCC work hours that deducted over and under reported hours by subcontractors. This review involved correcting 36 of the Project's 46 monthly totals. Total differences were an aggregate addition of 62,875 hours and the addition of one recordable injury upgraded from a First Aid case. New RCC and Project totals are reflected in the following paragraphs of this report.*
- *RCC reported 61,453 work hours for May 2018. RCC's total Contract to Date work hours through May 2018 are 2,310,013 with a total of thirteen (13) Recordable Injuries and no Lost Workday (Days Away) case injuries. The C0980 Contract Recordable Injury Rate is 1.13. The Bureau of Labor Statistics reports that the National Average Recordable Injury Rate is 2.8 for heavy civil construction projects.*
- *Total Contractors' to Date Work Hours, including both the C0980 and the completed C0981 AUR contract, through May 2018 is 2,421,072 hours with fourteen (14) recordable injuries. The Total Project Contractor Recordable Injury Rate is 1.16.*
- *Total Aggregate Project work hours for Contractors, Metro staff, and Support Services Consultants, through May 2018 is 3,065,288 with fifteen (15) Recordable Injuries and no Lost Workday (Days Away) injury cases. The Total Project Aggregate Safety Rate is 0.98.*

### THIRD PARTY AGREEMENT STATUS

Agency	Type of Agreement	Status/Comments
City of Los Angeles	Amendment to Master Cooperative Agreement	Parties will work under 2003 MCA.
Los Angeles Department of Water and Power	Amendment to Memorandum of Understanding	Metro and LADWP will continue to work under the terms of the previous Cooperative Agreement.
Los Angeles County Public Works	Letter of Agreement	Executed in April 2011
Caltrans	Amendment	Executed in August 2011
Private Utilities	LOA, MOU or UCA	All agreements in place with exception of Level 3, Qwest, XO Comm, Zayo and Time Warner. Metro is in discussion with those utilities to establish agreements.

### UTILITY RELOCATION STATUS

LADWP-Power Services *forecast* completion dates for cable pulling, splicing and removal of old facilities are in-line with *Metro* forecasts. Related updates are as follows:

- RCC is continuing to coordinate with LADWP for the relocation of the local LADWP electrical system in the 6th and Flower area. Metro continues to work with all impacted parties to facilitate coordination of the relocation design and construction in preparation for *completing* decking installation.
- Related to the 6<sup>th</sup>/Flower area, LADWP has completed all the intercept work, *cable pulling and splicing*, for Mainline A and B. LADWP is currently removing the old system.
- *LADWP power has completed the relocation of the fiber optic line which was completed mid-May 2018.*
- Metro, with the cooperation of LADWP Power, are currently in the design phase of the power relocation work for the Temple and Alameda intersection area. The designs were separated into three separate scopes of work. In addition, LADWP will need to relocate a fiber optic line that currently impacts the trainway tunnel. LADWP is currently verifying that there is enough slack to raise the fiber optic line which is 1" - 4" conduit to avoid a major relocation. The second fiber optic line that will need to be relocated is maintained by the Information Technology Agency (ITA). They are also currently verifying that there is enough slack to raise conduit to avoid conflict with the trainway tunnel.
- *Metro is in the planning process to assist LADWP with preparing traffic control plans for power relocation work at Alameda and Temple. No decision has been made on whether Metro will provide LADWP traffic control set up.*

## **C0980 UTILITY WORK STATUS**

RCC is currently coordinating with all affected utility owners to relocate their utilities by lowering in-place or support and protect to accommodate the Project. The majority of the remaining work where lowering in-place and hanging is occurring is at Flower Street. Similar efforts are planned at Temple/Alameda.

## **PEAK HOUR CONSTRUCTION VARIANCES**

Metro is actively pursuing extended hour variances/exemptions to accommodate Project needs by working with the City of Los Angeles, Bureau of Engineering, the Los Angeles Police Commission, the City of Los Angeles Department of Transportation and the City Council District 14th Office to obtain and maintain Peak Hour Exemptions.

### **Historic Broadway and Grand Av Art/Bunker Hill Stations:**

- As of May 8, 2017, Historic Broadway Station has entered steady state condition in which soldier piling/decking operations have been completed in the City ROW. Emphasis is now primarily on underground station construction until approximately the year 2021.

### **Flower Street Cut & Cover Area**

- Metro obtained an AM and PM peak hour exemption to place k-rail on the eastside of Flower Street (between 4th and 5th Sts.) to support above and below ground construction operations for decking along Flower Street. Approval was granted by the Board of Public works from October 1, 2016 to November 9, 2019.
- Metro obtained a Bureau of Engineering exemption on November 15, 2017, to allow construction work during AM and PM peak hours on Flower Street between 5th Street and Wilshire Boulevard from November 18, 2017 through November 10, 2019. This exemption was granted to accommodate the related Steady State traffic control plans, which were implemented November 18, 2017.

## **POLICE COMMISSION CONSTRUCTION VARIANCES**

Metro continues to work closely with the Los Angeles Police Commission and actively pursue new night/Sunday work hour variances as well as expanded geographic limits and time extensions for existing variances to accommodate Project needs.

In *June* 2018, LAPD approved time extensions for two (2) existing variances for the following locations:

- At Flower between *the* 5th Street *intersection* and Wilshire Boulevard, one (1) variance was extended for *the installation of decking*.
- At the Grand Av Arts/Bunker Hill Station box, one (1) variance was extended for *station invert*.

## **CPUC CROSSING SUMMARY**

In July 2016, Metro and RCC finalized the items that needed to be included in the checklist for the Safety Certification Status. The list involves both design and construction items below:

- Passenger Stations, Train Control and Signals, Traction Power, Overhead Catenary, Communications, Track and Structures, Vertical Transportation (elevators, escalators), Fire Life Safety Systems, Security Systems, and CPUC Specific Requirements.
- Metro and RCC staff have reached a consensus of each Systems Safety Certification item per discipline that needs to be included in the plan. These items have been inserted into a Microsoft Access Database for tracking, sorting, and distribution to key staff members for alerting of any potential issues that must be resolved. This will ensure that the completion of the Safety Certification Plan will be completed in a timely manner and not impact the Revenue Operation Date (ROD).

As of January 2017, the Safety Certification Checklist has been approved by Metro.

## 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

## CHRONOLOGY OF EVENTS (Cont.)

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 form 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

## CHRONOLOGY OF EVENTS (Cont.)

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)

## CHRONOLOGY OF EVENTS (Cont.)

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

## CHRONOLOGY OF EVENTS (Cont.)

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
<i>June 2018</i>	<i>LADWP Power completed cable pulling at 6<sup>th</sup>/Flower</i>
<i>June 2018</i>	<i>Completed underpinning related to the Historic Broadway Station</i>

## CONSTRUCTION CONTRACTS

<p><b>Description: Design-Build Contract</b>  <b>Contractor: Regional Connector Constructors</b></p>	<p><b>Contract No. C0980</b>  <b>Status as of: June 29, 2018</b></p>
<p><b>Work Completed:</b></p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Completed review of DU16 Broadway Wall B Action Plan</li> <li>• Completed review of 7<sup>th</sup>/Metro software application logic submittal</li> </ul> <p><b>Construction</b></p> <p><b>Historic Broadway (2nd/Broadway)</b></p> <ul style="list-style-type: none"> <li>• Completed underpinning columns</li> </ul> <p><b>Flower Street</b></p> <ul style="list-style-type: none"> <li>• Completed LADWP Power cable pulling at 6<sup>th</sup>/Flower intersection</li> </ul>	<p><b>Major Activities (In Progress):</b></p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Preparation of DU6 Grand Av Arts/Bunker Hill Pedestrian Bridge 100% Design Submittal</li> <li>• DU4 Civil Segment A AFC Design Submittal to be approved</li> <li>• Preparation of DU5 Civil Segment B AFC Design Submittals</li> <li>• Preparation of DU12 Radio AFC Design Submittal</li> <li>• Coordination with Eastside Access Project team relating to Alameda Esplanade</li> </ul> <p><b>Construction</b></p> <p><b>Tunnel &amp; SEM</b></p> <ul style="list-style-type: none"> <li>• Cross passage final lining</li> <li>• Tunnel invert concrete</li> <li>• SEM Cavern excavation</li> </ul> <p><b>Little Tokyo/Art District (1st/Central)</b></p> <ul style="list-style-type: none"> <li>• Excavation of Little Tokyo/Arts District Station</li> <li>• Excavation of WYE and 1<sup>st</sup> Street cut and cover</li> </ul> <p><b>Historic Broadway (2nd/Broadway)</b></p> <ul style="list-style-type: none"> <li>• Level 8 excavation of Historic Broadway Station</li> <li>• Entrance structure concrete foundation</li> </ul> <p><b>Grand Av/Arts/Bunker Hill (2nd/Hope)</b></p> <ul style="list-style-type: none"> <li>• Concourse level exterior walls</li> <li>• Sump pits and invert at hammer heads</li> </ul> <p><b>Flower Street</b></p> <ul style="list-style-type: none"> <li>• Remaining piles and temporary decking at 6<sup>th</sup>/Flower</li> <li>• Excavation of Flower Street North (between 4<sup>th</sup> &amp; 5<sup>th</sup> Street)</li> <li>• Excavation of Flower Street South (between 5<sup>th</sup> &amp; 6<sup>th</sup> Street)</li> </ul> <p><b>Project-wide</b></p> <ul style="list-style-type: none"> <li>• Geotechnical equipment installation and monitoring</li> <li>• Preparation of submittals and traffic control plans, including regular meetings with Stakeholders to include LADOT and City Council District 14</li> </ul>

## CONSTRUCTION CONTRACTS (Cont.)

<p><b>Description: Design-Build Contract</b>  <b>Contractor: Regional Connector Constructors</b></p>	<p><b>Contract No. C0980</b>  <b>Status as of: June 29, 2018</b></p>
<p><b>Areas of Concern:</b>                  Support of excavation, utility protection and decking on Flower - south of 6th Street - is being prosecuted during fourteen (14) weekend full closures of the area. These operations are key to effect early civil/structural cross-over tasks at 7th/Metro Station in Spring 2019.</p> <p>Maintaining the pace of the weekend operations is crucial as the Spring 2019 interface at 7th/Metro is <i>fast-approaching</i>.</p>	<p><b>Upcoming Interim Milestones:</b></p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Preparation DU5 Civil Segment B AFC Design Submittal</li> <li>• Preparation of Grand Av Arts/Bunker Hill Pedestrian Bridge AFC Design Submittal</li> <li>• Review and approval of DU12.1 Radio AFC Design Submittal</li> </ul> <p><b>Construction</b></p> <p><b>Tunnel &amp; SEM</b></p> <ul style="list-style-type: none"> <li>• Cross passage final lining</li> <li>• Tunnel invert and walkways</li> <li>• SEM Cavern excavation</li> </ul> <p><b>Little Tokyo/Art District (1st/Central)</b></p> <ul style="list-style-type: none"> <li>• Excavation of Little Tokyo/Arts District Station</li> <li>• Excavation of WYE and 1<sup>st</sup> Street cut and cover</li> </ul> <p><b>Historic Broadway (2nd/Broadway)</b></p> <ul style="list-style-type: none"> <li>• Level 8 excavation of Historic Broadway Station</li> <li>• Entrance structure concrete foundation placement</li> </ul> <p><b>Grand Av/Arts/Bunker Hill (2nd/Hope)</b></p> <ul style="list-style-type: none"> <li>• Concourse level exterior walls</li> <li>• Sump pits and invert at hammer heads</li> <li>• Exterior walls at hammer heads</li> </ul> <p><b>Flower Street</b></p> <ul style="list-style-type: none"> <li>• Remaining piles and temporary decking on Flower at 6<sup>th</sup> Street and southwards</li> <li>• Excavation of Flower Street South (between 5<sup>th</sup> &amp; 6<sup>th</sup> Street)</li> <li>• Concrete work of Flower North (between 4<sup>th</sup> and 5<sup>th</sup> Street)</li> </ul> <p><b>Project-wide</b></p> <ul style="list-style-type: none"> <li>• Complete placement of geotechnical monitoring instrumentation along the alignment</li> </ul>



## CONSTRUCTION PHOTOS



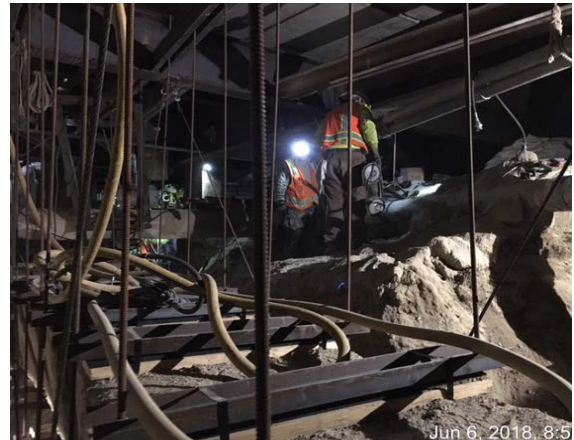
Underpinning of LA Times Building complete



SEM mining for crossover cavern at  
Historic Broadway Station



Cross Passage construction underway



Water/Strut installation under Central Deck



Excavation and lagging under Flower Street

## **APPENDIX**

### **COST AND BUDGET TERMINOLOGY**

#### **Project Cost Descriptions**

ORIGINAL BUDGET	The Original Project Budget established upon Board approval of Life-of-Project (LOP) budget, plus Finance Costs.
CURRENT BUDGET	The Original Budget plus all approved budget amendments.
COMMITMENTS	The total of actual contracts awarded, executed change orders or amendments, approved work orders of Master Cooperative Agreements, and other Metro actions which have been spent or result in the obligation of specific expenditures at a future time.
EXPENDITURES	The total dollar amount of funds expended by Metro for contractor or consultant invoices, third party invoices, staff salaries, real estate and other expenses that is reported in Metro's Financial Information System (FIS).
CURRENT FORECAST	The best estimate of the final cost of the project when all checks have been issued and the project is closed out. Current Forecast is composed of actual costs incurred to date, the best estimate of work remaining and a current risk assessment for each budgeted cost item.

#### **Cost Report by Element Descriptions**

CONSTRUCTION	Includes construction contracts. Cost associated with Guideways, Stations, Sitework/Special Conditions and Systems.
RIGHT OF WAY VEHICLES	Includes purchase cost of parcels, easements, right-of-entry permits, escrow fees, contracted real estate appraisals and tenant relocation.
	Includes the purchase of LRT vehicles and spare parts for the project.
PROFESSIONAL SERVICES	Includes design engineering, project management assistance, construction management support services, legal counsel, agency staff costs, and other specialty consultants.
CONTINGENCY	A fund established at the beginning of the Project to provide for anticipated but unknown additional costs that may arise during the course of the project.
PROJECT REVENUE	Includes all revenue receivable to the Metro as a direct result of Project activities. This includes cost sharing construction items, insurance premium rebates, and the like.

## APPENDIX

### LIST OF ABBREVIATIONS AND ACRONYMS

AFC	Approved for Construction
APE	Advanced Preliminary Engineering
ATC	Automatic Train Control
ATSAC	Automated Traffic Surveillance and Control
AUR	Advanced Utility Relocation
BAFO	Best and Final Offer
BIM	Building Information Modeling
CADD	Computer Aided Drafting and Design
CALTRANS	California Department of Transportation
CAR	Corrective Action Request
CCTV	Closed Circuit Television
CD	Calendar Day
CEQA	California Environmental Quality Act
CM	Construction Manager
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CN	Change Notice
CO	Change Order
COLA	City of Los Angeles
CPM	Critical Path Method
CPUC	California Public Utilities Commission
CQWP	Construction Quality Work Plan
CR	Camera Ready
CSPP	Construction Safety Phasing Plan
CTC	California Transportation Commission
CUD	Contract Unit Description
DB	Design Build
DBB	Design Bid Build
DDR	Design Deviation Request
DOT	Department of Transportation
DSC	<i>Differing Site Condition</i>
DWP	Department of Water and Power
ECI	Engineering Change Instruction
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EOR	Engineer of Record
EPB TBM	Earth Pressure Balance Tunnel Boring Machine
FAR	Federal Acquisition Regulation
FD	Final Design
FEIS	Final Environmental Impact Statement
FEIR	Final Environmental Impact Report
FFGA	Full Funding Grant Agreement
FIS	Financial Information System
FLSR	Fire Life Safety Report
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration

## APPENDIX

### LIST OF ABBREVIATIONS AND ACRONYMS (Cont.)

FSEIR	Final Supplemental Environmental Impact Report
FSEIS	Final Supplemental Environmental Impact Statement
FTA	Federal Transit Administration
FTE	Full Time Equivalent
GBN	Ground Borne Noise
GBR	Geotechnical Baseline Report
GDSR	Geotechnical Design Summary Report
HABS/HAER	Historical American Building Survey / Historical American Engineering Record
IFB	Invitation for Bid
IPMO	Integrated Project Management Office
JV	Joint-Venture
LA	Los Angeles
LABOE	Los Angeles Bureau of Engineering
LABOS	Los Angeles Bureau of Sanitation
LABSL	Los Angeles Bureau of Street Lighting
LACFCD	Los Angeles County Flood Control District
LACMTA	Los Angeles County Metropolitan Transportation Authority
LADOT	Los Angeles Department of Transportation
LADPW	Los Angeles Department of Public Works
LADWP	Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAPD	Los Angeles Police Department
LNTP	Limited Notice to Proceed
LONP	Letter of No Prejudice
LOP	Life-of-Project
LPA	Locally Preferred Alternative
LRT	Light Rail Transit
LRTP	Long Range Transportation Plan
LRV	Light Rail Vehicle
MCA	Master Cooperative Agreement
MIS	Major Investment Study
MMRP	Mitigation Monitoring and Reporting Program
MOU	Memorandum of Understanding
MPSR	Monthly Project Status Report
N/A	Not Applicable
NCR	Non-conformance Report
NEPA	National Environmental Protection Act
NOD	Notice of Determination
NPDES	National Pollution Discharge Elimination System
NTE	Not to Exceed
NTP	Notice to Proceed
OCC	Operations Control Center
OCR	Overhead Conductor Rail
OCS	Overhead Catenary System

## APPENDIX

### LIST OF ABBREVIATIONS AND ACRONYMS (Cont.)

OSHA	Occupational Health and Safety Administration
PA/VMS	Public Address/Visual Messaging Sign
PCTL	Precast Concrete Tunnel Lining
PE	Preliminary Engineering
PEER	Permit Engineering Evaluation Report
PIP	Project Implementation Plan
PLA	Project Labor Agreement
PM	Project Manager
PMOC	Project Management Oversight Consultant
PMP	Project Management Plan
PR	Project Report
PSR	Project Study Report
QA	Quality Assurance
QAR	Quality Assurance Report
QC	Quality Control
QPSR	Quarterly Project Status Report
RAMP	Real Estate Acquisition Management Plan
RCC	Regional Connector Contractors
RCMP	Risk and Contingency Management Plan
RFC	Request for Change
RFP	Request for Proposals
RHA	Risk Hazard Analysis
ROC	Rail Operations Center
ROD	Record of Decision
ROM	Rough Order of Magnitude
RON	Resolution of Necessity
ROW	Right-Of-Way
RSD	Revenue Service Date
SCAQMD	Southern California Air Quality Management District
SCADA	Supervisory Control and Data Acquisition
SCC	Standard Cost Category
SCG	Southern California Gas Company
SEIS	Supplemental Environmental Impact Statement
SEM	Sequential Excavation Method
SHPO	State Historic Preservation Office
SIT	System Integration Testing
SOE	Support of Excavation
SOQ	Statement of Qualification
SOV	Schedule of Values
SOW	Statement of Work
SP	Special Provision
SSMP	Safety and Security Management Plan
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Train Control Center

## APPENDIX

### LIST OF ABBREVIATIONS AND ACRONYMS (Cont.)

TCE	Temporary Construction Easement
TCP	Traffic Control Plan
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TPSS	Traction Power Substation
TVA	Threat Vulnerability Analysis
TVM	Ticket Vending Machine
UFS	Universal Fare System
UST	Underground Storage Tank
USDOT	United States Department of Transportation
VE	Value Engineering
WATCH	Work Area Traffic Control Handbook
WBS	Work Breakdown Structure
WP	Work Package
WTCP	Worksite Traffic Control Plan
YOE	Year of Expenditure