

Los Angeles County
Metropolitan Transportation Authority

Regional Connector Transit Project

QUARTERLY PROJECT STATUS REPORT

June 2019



REGIONAL CONNECTOR TRANSIT PROJECT

QUARTERLY PROJECT STATUS REPORT

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June 2019

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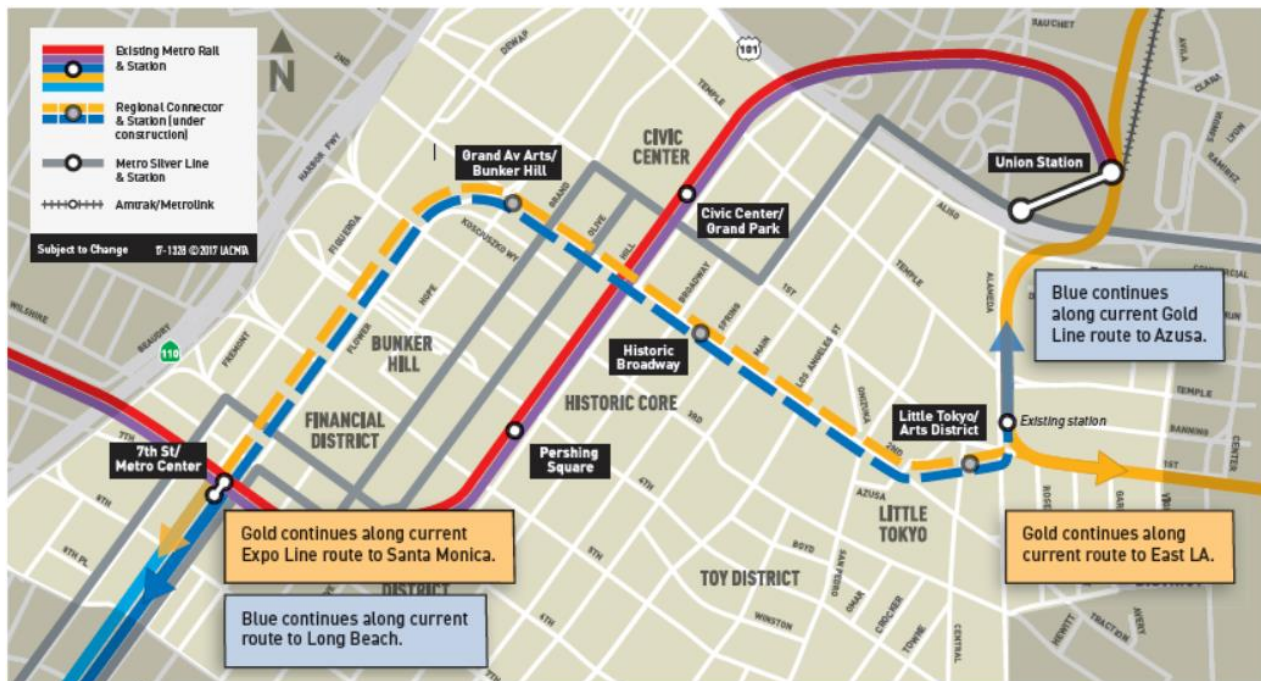
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PROJECT OVERVIEW

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 20, 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 supportive of 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 have 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 and supervisors across the regions has surfaced as a key component to rail activation. This training will require dedicated time during rail activation to ensure safety.

Planning efforts have outlined a sequence of dependent testing, training, simulation, and safety certification. From the sequence, a twenty-week schedule has been developed to guide the testing, rail activation and start-up. The twenty weeks are initiated by the Project's issuance of the Substantial Completion milestone to RCC.

EXECUTIVE SUMMARY

In *June*, the Project achieved 57.5% completion based on earned value measurements for design and construction. The focus of the Project is on *facilitating advancement* of construction activities *throughout the alignment*.

The following is an overview of current design and construction activities.

Design Status

Ninety-nine percent (99.9%) of the Final Design has been completed. To advance construction activities critical to the construction schedule, the Civil B (DU5) design package was split into two packages identifying time sensitive utility work. *The APDU was approved in June 2019*. The Project will continue to work with RCC and City Agencies to resolve comments on the remaining DU5 *Civil B - Street Restoration* package.

Construction Status

1st Street Cut & Cover Tunnel & U-Channel: *Continued* invert construction.

Wye Structure: *Started* exterior wall construction.

Little Tokyo/Arts District Station: The exterior walls at the lower ancillary and station box area continued. The concrete placement of exterior walls at the lower ancillary and station box area is expected to be complete in *July*.

Bored Tunnels: *Completed the placement of the floating slab curb in the right tunnel segment from Historic Broadway Station to Grand Av Arts/Bunker Hill Station. The placement of the floating slab curb in the left tunnel will begin in July 2019 and is expected to be completed by August 2019.*

Historic Broadway Station: *In the station box area, continued the concrete placement of platform level west walls and continued the installation of vertical shoring and rebar placement for the concourse level deck. In the entrance lower ancillary area, continued the rebar installation for the concourse level interior walls and columns. Completed the concrete placement of the entrance lower ancillary exterior walls and four of six deck pours at the west station box concourse level.*

Crossover Cavern: The installation of HDPE continued. Completed invert concrete in *three* of five pour areas. Continued invert rebar in the next pour area.

Grand Av Arts/Bunker Hill Station: *In the west station box area, completed the west concourse level deck and continued rebar installation for the concourse exterior walls. In the east station box area, completed the concourse level exterior walls and started interior walls. In the center station box area, continued lower ancillary level deck rebar installation. In the entrance area, completed the lower ancillary deck and started exterior walls.*

Flower Cut & Cover Tunnel: The installation of the exterior and interior walls at the north section (4th Street to 5th Street) continued. In the south section, the installation of excavation support from 5th/Flower to 7th/Metro Center progresses. The excavation of the south section (5th Street to 7th/Metro Center Station) continues and is expected to be complete by August 2019.

Cost and Schedule Summary

As of the reporting date, RCC is late in submitting the May 2019 Schedule Update.

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	03/23/22	9 days

On the Project Master Schedule, the primary critical path has shifted from the South Flower Street Cut & Cover tunnel excavation future Little Tokyo/Arts District Station concrete to the future Little Tokyo/Arts District Station concrete.

To maintain access between the lower ancillary and the track level station box, a section of the lower ancillary walls was not completed. The construction sequence was modified to construct the east exit/vent slab prior to completing the lower ancillary walls. After the east exit/vent slab is completed, the lower ancillary exterior walls can proceed followed by the west exit/vent slab.

After station concrete and backfill are completed, the critical path continues at the future Little Tokyo/Arts District Station through the removal of the temporary decking and pin pile removal at 1st/Alameda. Track provisioning will begin after the pin piles are removed and will be followed by the critical OCS and train control installations. After the majority of the systems installations are complete, systems integration will commence and continue through pre-revenue testing. A summary graphic of the critical path is found on Page 13.

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 an increase to 8% now anticipated. 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 14.

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 plans the complex rail activation and certification process; coordination with all stakeholders in both planning and executing tasks continue. Start-up requirements are similarly being addressed between the Project and Operations' Liaison staff. Operator training will likely govern the pre-revenue operations period. Detailed monitoring of progress will continue.

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 continues to actively engage 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 with impacted stakeholders during this long-term steady state construction. *Early planning for the street restoration phase continues.*

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

Status/Action: The Project is proceeding with addressing City comments in the final design. In finalizing the second Restoration AFC (DU5) submittal. Metro has held a series of informal comment resolution meetings with the City on new comments prior to their formal response. The second AFC submittal is expected to be approved in August 2019.

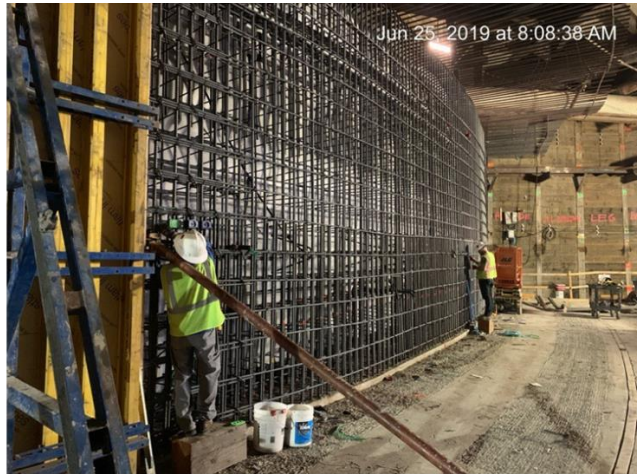
Item 4: Design comments from the over-build developer at the Historic Broadway Station has led to design revisions with potential cost impacts.

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. As the final package is accepted, an assessment of related construction costs is now underway. Additionally, a new Change Notice has been forwarded to RCC to solicit a cost and schedule proposal for the added scope. The assessment will identify cost increases in construction activities, and guide negotiations for additional funding reimbursement from the overbuild owners.

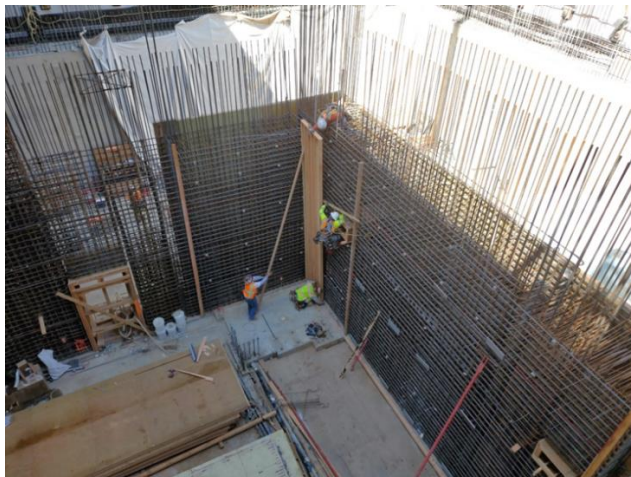
Project Construction Photos



Formed Floating Slab Curb in left tunnel



North exterior walls in Wye (Little Tokyo/Arts District Station)



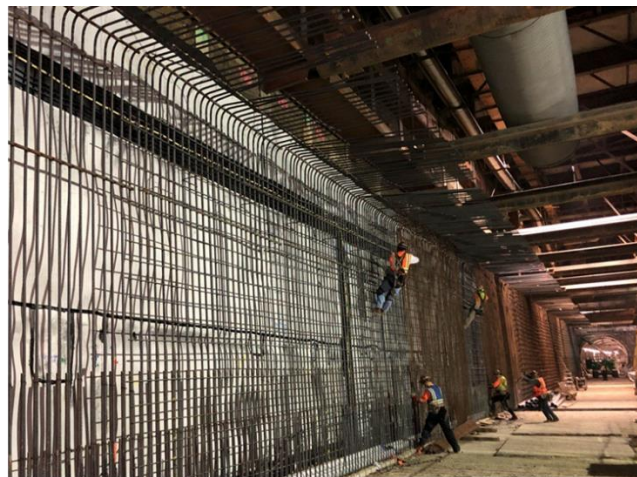
Interior wall forming in entrance structure at Historic Broadway Station



Scaffolding setup in SEM Cavern



MEP conduit installation at ancillary deck level of Grand Av Arts/Bunker Hill Station

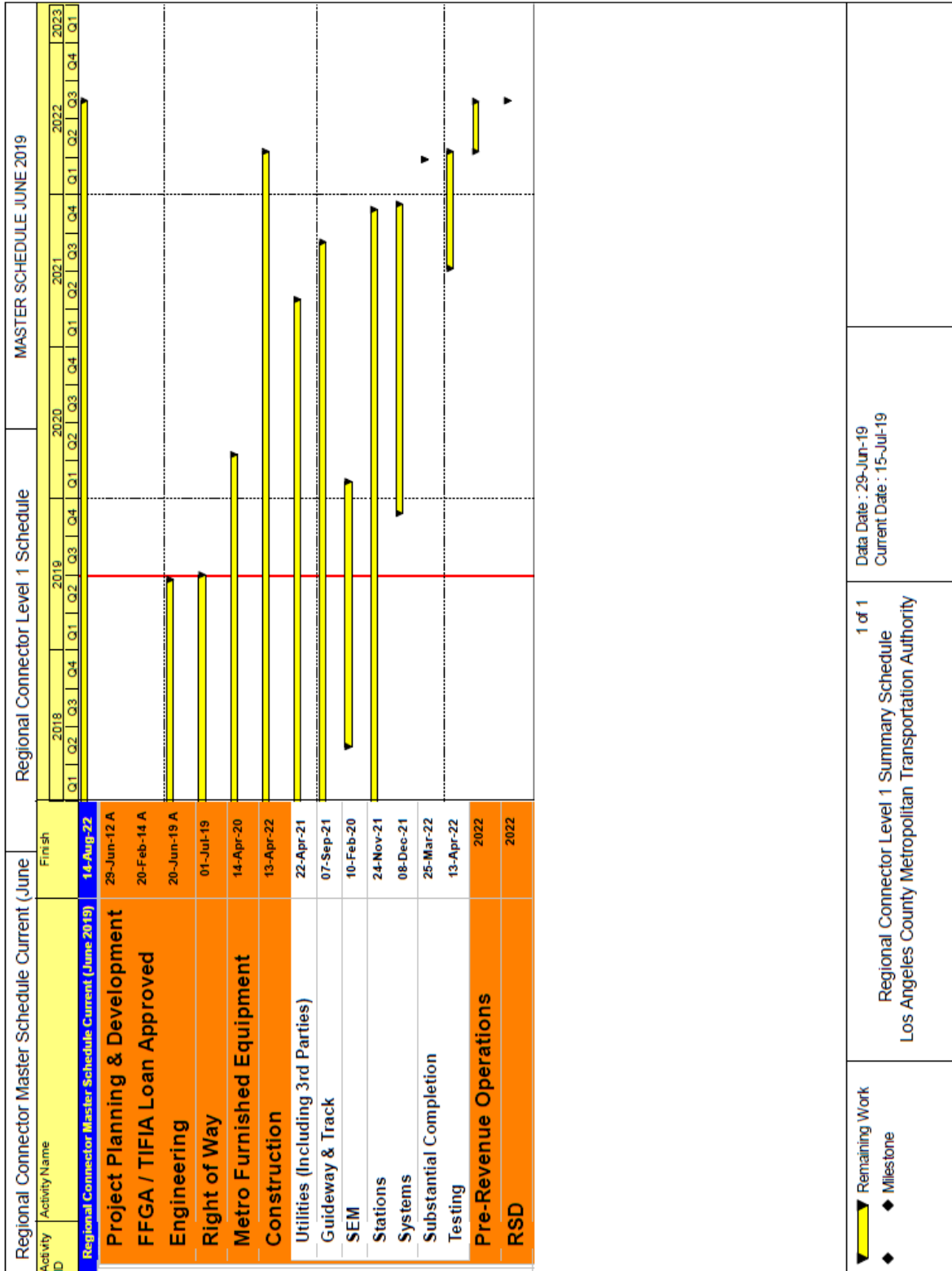


Rebar installation for wall at north Flower St

PROJECT UPDATE

PROJECT SCHEDULE

Project Summary Schedule



1 of 1
Regional Connector Level 1 Summary Schedule
Los Angeles County Metropolitan Transportation Authority

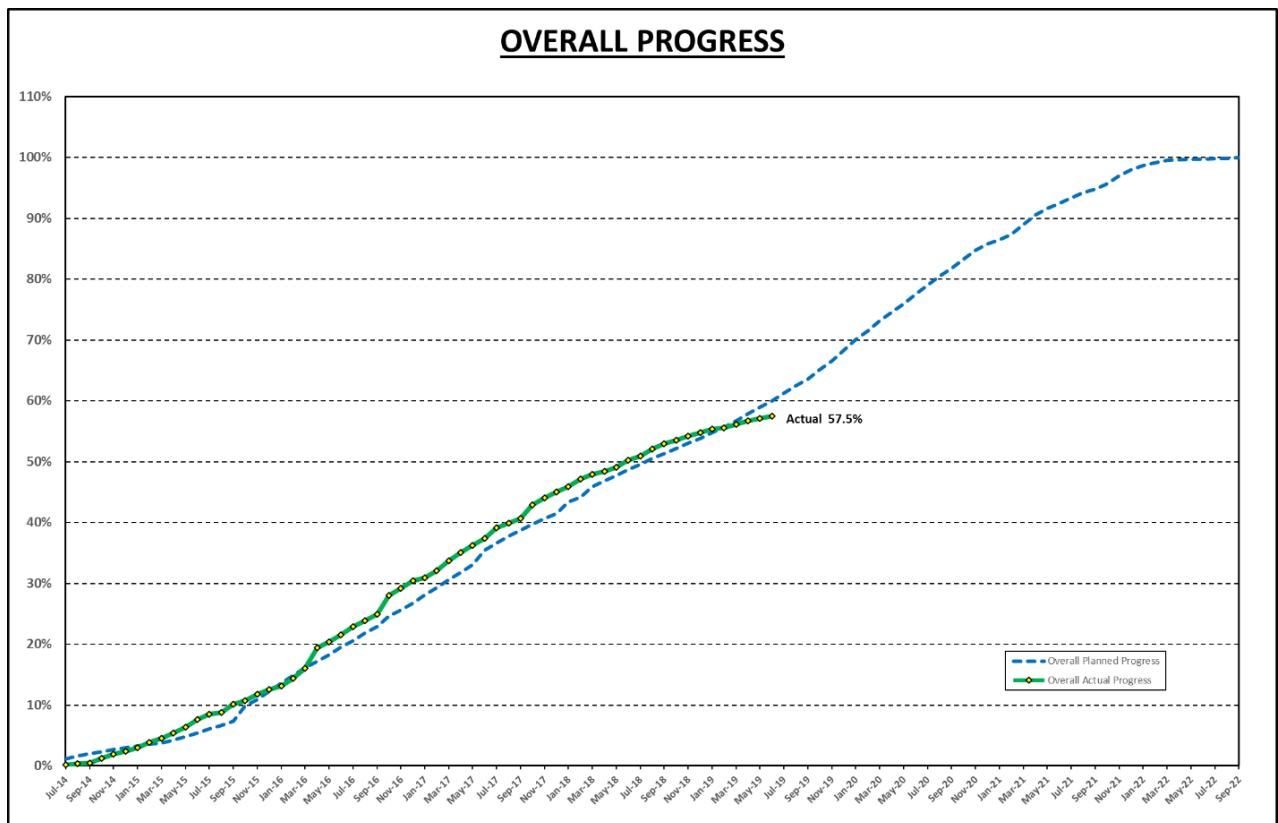
Data Date : 29-Jun-19
Current Date : 15-Jul-19

Progress Summary

	Status	Change from Last Month	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	99.9%	0.0%	Remaining design is not impacting the critical path
Construction Contracts Progress:			
Contract C0981R & C0980	55.0%	0.4%	

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	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Complete Right Tunnel Floating Slab Track Curb	06/28/19 A	⬡					
Complete Concourse Level Deck at Grand Ave / Bunker Hill Station	07/08/19		⬡				
Complete 1st Street Tunnel / U-Channel Tunnel Invert	07/15/19		⬡				
Complete SEM Invert Concrete	07/19/19		⬡				
Complete Ancillary Lower Level Exterior Walls at Little Tokyo / Art District Station	08/09/19			⬡			
Complete West Concourse Level Deck at Historic Broadway Station	08/12/19			⬡			
Complete South Flower Cut & Cover Tunnel Excavation	08/20/19			⬡			
Complete West Ancillary Deck at Little Tokyo / Art District Station	09/09/19				⬡		
Complete West Ancillary Mid-Level Interior Walls at Little Tokyo / Art District Station	10/07/19					⬡	
Complete Wye Cut & Cover Tunnel Walls	10/08/19					⬡	
Complete North Flower Cut & Cover Tunnel Walls	10/24/19					⬡	
Complete Lower Ancillary Level Walls at Grand Ave / Bunker Hill Station	11/22/19						⬡

 MTA Staff
  MTA Board Action
  FTA (Federal)
  Utility Company
 Other Agencies
  Contractors
  Design Consultant
  C0980 D/B Contractor
 * New

'A' following date is actual and completed

Major Equipment Delivery

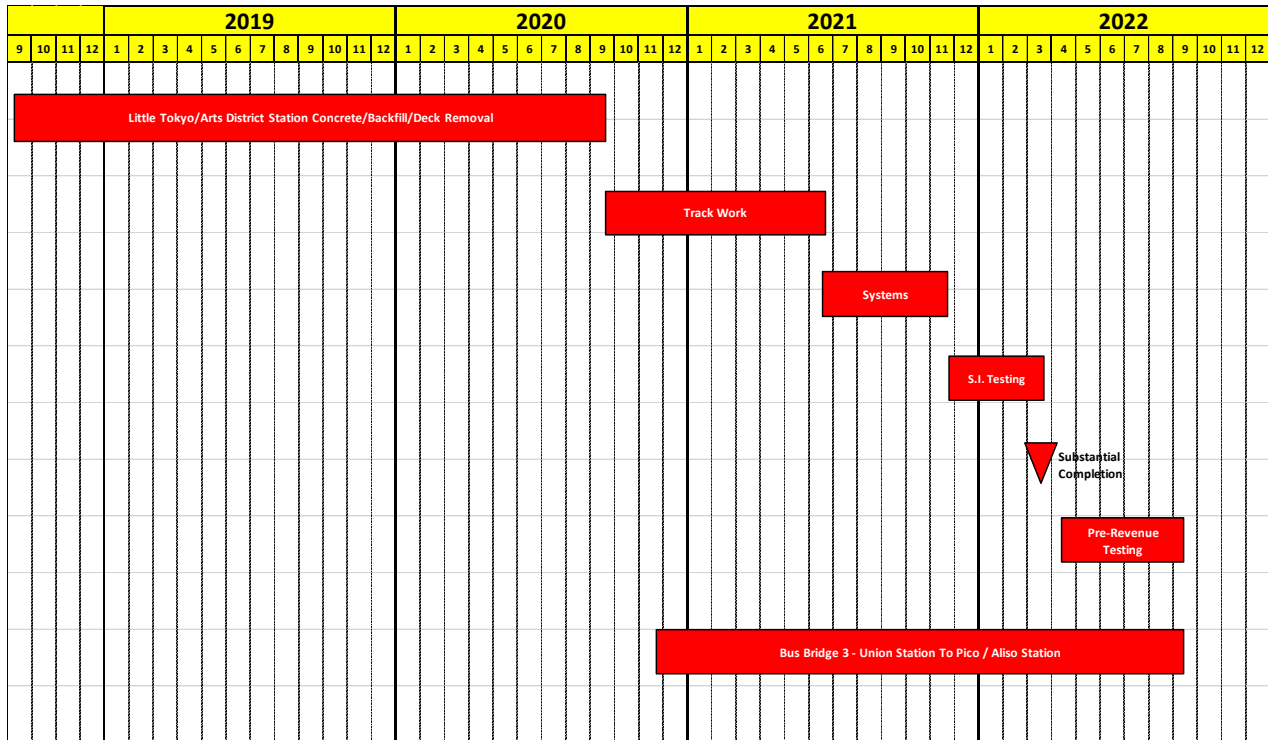
Metro Supplied Equipment

Equipment	Initial Procurement	Scheduled Delivery	Scheduled Installation
LRT Vehicles	(NTP) 08/20/2012	Option 2 02/26/2020	N/A
Ticket Vending Machines	~ 01/30/2018	03/29/19 (warehoused)	05/25/2021 ~08/26/2021

Design/Builder Equipment Delivery Requirements

Activity Name	Finish	Need Date
FAB/DELIV OCR FOR TUNNEL	05-Oct-18 A	3-Mar-21
FAB/DELIV TRAIN CONTROL CABLE	05-Oct-18 A	7-Aug-20
FAB/DELIV HIGH VOLTAGE DISCONNECT - 1ST & CENTRAL	1-Apr-19	5-Nov-19
FAB/DELIV ATC FO CABLE	12-Apr-19	12-Apr-21
FAB/DELIV 2ND/HOPE UNIT SUBSTATION AND TRANSFORMER	7-Jun-19	8-Nov-19
FAB/DELIV TRAIN CONTROL EQUIPMENT	28-Jun-19	5-Nov-20
FAB/DELIV LIGHT FIXTURES - BROADWAY STA	23-Jul-19	25-Jun-21
FAB/DELIV LIGHT FIXTURES - CENTRAL STA	23-Jul-19	25-Jun-21
FAB/DELIV LIGHT FIXTURES - HOPE STA	23-Jul-19	2-Jul-21
FAB/DELIV EMERGENCY VENTILLATION FANS - HOPE (4)	5-Sep-19	3-Jan-20
FAB/DELIV 2ND/BROADWAY TPSS	6-Sep-19	29-Jul-20
FAB/DELIV 2ND/HOPE TPSS	6-Sep-19	9-Mar-20
FAB/DELIV EDGE LIGHTING - BROADWAY STA	18-Sep-19	15-Mar-22
FAB/DELIV EDGE LIGHTING - CENTRAL STA	18-Sep-19	30-Apr-21
FAB/DELIV EDGE LIGHTING - HOPE STA	18-Sep-19	15-Mar-22
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 144 FO CABLE	30-Oct-19	17-Aug-20
FAB/DELIV CCTV CABLE	30-Oct-19	17-Aug-20
FAB/DELIV CCTV DEVICES	30-Oct-19	17-Aug-20
FAB/DELIV COMMUNICATIONS UPS	30-Oct-19	21-Jul-21
FAB/DELIV FEMS CABINETS	30-Oct-19	22-Jul-21
FAB/DELIV FEMS CABLE	30-Oct-19	28-Jul-21
FAB/DELIV FIRE ALARM CABLE	30-Oct-19	17-Aug-20
FAB/DELIV FIRE ALARM DEVICES	30-Oct-19	17-Aug-20
FAB/DELIV GAS DETECTION CABLE	30-Oct-19	17-Aug-20
FAB/DELIV GAS DETECTION DEVICES	30-Oct-19	17-Aug-20
FAB/DELIV IDS CABLE	30-Oct-19	17-Aug-20
FAB/DELIV IDS DEVICES	30-Oct-19	17-Aug-20
FAB/DELIV RADIO CABLE	30-Oct-19	17-Aug-20
FAB/DELIV RADIO DEVICES	30-Oct-19	17-Aug-20
FAB/DELIV RADIO TOWER & ANTENNAE	30-Oct-19	23-Jul-21
FAB/DELIV SCADA RTU	30-Oct-19	11-Jul-22
FAB/DELIV SEISMIC DETECTION DEVICES	30-Oct-19	7-Jun-21
FAB/DELIV SPLICE ENCLOSURES & PATCH PANELS	30-Oct-19	4-Jun-21
FAB/DELIV TELEPHONE CABLE	30-Oct-19	17-Aug-20
FAB/DELIV TELEPHONE DEVICES	30-Oct-19	17-Aug-20
FAB/DELIV TPIS CABLE	30-Oct-19	10-Jun-21
FAB/DELIV TPIS DEVICES	30-Oct-19	23-Jun-21
FAB/DELIV 2ND/BROADWAY UNIT SUBSTATION AND TRANSFORMER	12-Nov-19	9-Apr-20
FAB/DELIV ELEVATORS - 1ST/CENTRAL	30-Nov-19	4-Mar-21
FAB/DELIV ELEVATORS - 2ND/BROADWAY	30-Nov-19	20-Apr-21
FAB/DELIV ELEVATORS - 2ND/HOPE	30-Nov-19	27-Jun-21
FAB/DELIV OCS POLES / EQUIPMENT	15-Jan-20	28-Jan-21
FAB/DELIV ESCALATORS - 2ND/BROADWAY	27-Jun-20	28-Mar-21

Critical Path (C0980)



This month, the critical path shifted from the *South Flower Cut & Cover Tunnel* to the future Little Tokyo/Arts District Station.

Upon the completion of the structure backfill and the temporary deck/pin pile removal at the east end of the station, 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.

Bus Bridge 3 – Union Station to Pico/Aliso Station will start as late as possible to minimize the disruption to the existing Gold Line service. The Bus Bridge will begin with demolition of the existing Gold Line facilities and systems within the limits of the Regional Connector Project. During the Bus Bridge, the cut and cover guideway along Alameda together with the Fan Plant will be constructed. Track and systems will follow to integrated testing. The Bus Bridge will end when the Regional Connector Revenue Service starts.

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	251,083	1,851	177,233	2,199	269,538	20,257
20	STATIONS, STOPS, TERMINALS, INTERMODAL	354,268	219,477	0	229,919	0	229,993	1,002	72,109	1,790	232,354	2,436
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	104	578,481	2,680	462,607	155	625,379	26,962
50	SYSTEMS	69,667	73,848	0	73,424	11	67,722	9	16,753	2,800	79,862	6,437
	CONSTRUCTION SUBTOTAL (10-50)	846,343	920,468	0	1,151,041	115	1,127,279	5,543	728,701	6,943	1,207,132	56,091
60	ROW, LAND, EXISTING IMPROVEMENTS	115,889	74,208	0	92,742	27	52,498	24	52,439	0	69,189	-23,553
70	VEHICLES	16,275	16,275	0	16,275	0	16,275	183	6,145	0	16,275	0
80	PROFESSIONAL SERVICES	261,455	257,973	0	379,338	1,887	305,611	2,423	287,952	-455	391,398	12,061
	SUBTOTAL (10-80)	1,239,963	1,268,925	0	1,639,395	2,029	1,501,663	8,172	1,075,237	6,488	1,683,994	44,599
90	UNALLOCATED CONTINGENCY	135,399	126,892	0	89,946	0	0	0	0	-6,488	45,347	-44,599
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	2,029	1,501,663	8,172	1,075,237	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	0	18,988	0	20,425	0
	TOTAL PROJECTS 400228 & 460228 (EVN/PLAN'G)	0	24,200	0	26,500	0	26,500	0	25,063	0	26,500	0
	400228, 460228, 860228 TOTAL	1,402,932	1,427,132	0	1,770,142	2,029	1,528,162	8,172	1,100,300	0	1,770,142	0

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 06/30/2019. JUNE ACTUALS ARE DRAFE DUE TO ACCOUNTING HAS NOT CLOSED THE FISCAL YEAR. 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 \$2.03 million this month to \$1.53 billion which represents 86.3% of the Current Budget. The overall increase is related to several transactions including executed modifications for RCC, *extended additional funding to Project Management Assistance (PMA)*, *awarded mosaic artwork fabrication to Mosaicos Venecianos De Mexico*, *award task order to PWAC for lowering of Zayo conduits*, *increased funding to real estate appraisal and \$1M mitigation to Bureau of Sanitation for sewer/tunnels interface issues on Flower Street*.

Expenditures:

Expenditures are cumulative through June 2019. June actuals are still preliminary as Accounting has not closed the fiscal year. Expenditures increased by \$8.17 million this month for costs associated with C0980 Design Build Contract, Engineering Management Support, Metro Project Administration, Construction Management Support Services, Third Party Master Cooperative Agreements with the City of LA, Community Relations, and

Environmental Consultant Services. \$1.10 billion in expenditures to date represent 62.2% 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	SITework & SPECIAL CONDITIONS	0	0	0	0	0	0	0	0	0	0
50	SYSTEMS	0	0	0	0	0	0	0	0	0	0
	CONSTRUCTION SUBTOTAL (10-50)	10,480	0	10,480	0	10,480	0	0	0	10,480	0
60	ROW, LAND, EXISTING IMPROVEMENTS	27,748	0	27,748	0	27,748	0	22,470	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	370	0	650	0
	SUBTOTAL (10-80)	38,878	0	38,878	0	38,878	2	22,840	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	2	22,840	0	39,991	0
	861228 TOTAL	39,991	0	39,991	0	38,878	2	22,840	0	39,991	0

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 06/30/2019.

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 this month.

Commitments:

Commitments reflect actions through *June* 2019.

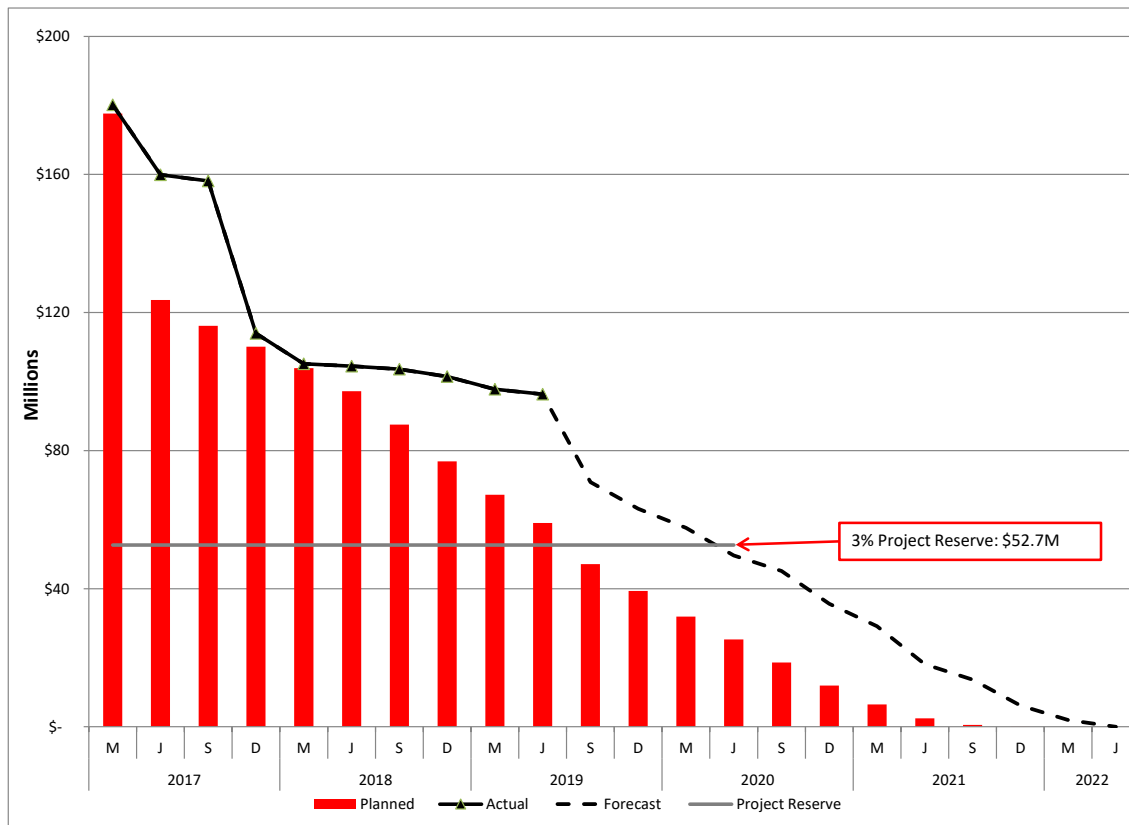
Expenditures:

Expenditures are cumulative through *June* 2019. Expenditures increased by a net \$2 thousand this month through adjustments for costs associated with Community Relations. The cumulative \$22.8 million in expenditures through *June* 2019 represent 57.1% of the Current Budget.

Current Forecast:

There was no change to the forecast for this month.

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 LOP Budget. Metro’s Board is to be notified when it becomes necessary to drawdown contingency below the threshold to cover Project costs.

In *June*, there was a drawdown of \$0.67 million from contingency. The remaining total project contingency (allocated and unallocated) stands at \$96.35 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	(38,111)	(6,571)	(44,682)	45,264
Allocated Contingency	86,345	92,809	(47,632)	5,905	(41,726)	51,082
Total Contingency	211,263	182,754	(85,743)	(666)	(86,409)	96,346

RISK MANAGEMENT

Summary of Risks

During this quarterly reporting period, *nine (9)* active risk were closed and *nine (9)* new risks were identified. There are *forty-six (46)* risks being managed in the next quarter.

Of the *forty-six (46)* risks, *twenty-three (23)* are scored as medium and *twenty-three (23)* as low.

Top Risks

The table below shows the Project's top risks as of *June 2019*:

Risk ID	SCC	Risk Description	Risk Rating
304	10	Unknown obstructions may be encountered during station or cut/cover guideway excavation, or Support of Excavation installation; delays may ensue.	9
311	40	Commonwealth Agreement may impact costs due to extended "construction phase"	8
500	50	Late redundancy requirements raise radio costs above forecast	8
514	30	Fan Plant final modification negotiated above 12M. Costs shown are above the current forecast and adjustment	8

Risk Score Changes

No active risks had a risk scoring assessment changes this quarter.

Closed Risks

Nine (9) risks were closed on the Project's Risk Register during the quarter.

Risk ID	SCC	Risk Description	Risk Rating
357	90	Steiny bankruptcy left RCC without Elec/Comm subcontractor. Lack of constructability review relating to Elec/Comm design may have schedule implication	0
359	40	LA BSS increasing Street Damage Restoration Fee (SDRF) may have cost implications.	4
360	40	Installation of 34.5kv trainway feeder along 7th St and Flower Street may have cost implication due to conflict with other utilities on Flower Street.	0.5
375	40	Art program may require additional funding to fabricate and install art works as costs are trending higher than anticipated.	1.5
435	50	Capability of Comm subcontractor is untested against Metro standards -particularly with command and control protocols and related programing; may lead to issues challenging schedule and cost objectives	4.5
470	60	Costs related to lease extension for Mangrove Yard as indicated by COLA exceed current forecast allocated.	12.5
490	10	CPUC advice on gaps in tunnel walkways is inconsistent with relevant design criteria; issue could impact scope, schedule and costs	4
354	40	Bike lane changes along 1st St may differ from Little Tokyo community expectations and result in schedule cost impact	2
430	10	Day-for-day schedule loss at Flower North due to over-excavation may impact overall schedule	1

Newly Identified Risks

Nine (9) new risks were identified and added to the Project’s Risk Register during the quarter.

Risk ID	SCC	Risk Description	Risk Rating
500	50	Late redundancy requirements raise radio costs above forecast	8
502	40	Temple Sewer Line total costs run higher due to offset constructibility issues and depth	6
504	80	Estimate for Little Tokyo community mitigations for extended Bus Bridge cost rises \$100k per month; costs shown are above the current forecast	3
506	50	Across all interfaces with existing LRT lines, cut-over integration challenges exceed allowances in current forecast (excludes Comm). Costs shown are above the current forecast	2
508	40	Notwithstanding missed milestone, RCC claims delay against early completion	3
510	40	Tribune does not cover construction cost delta for design parameter changes in 2nd/Broadway Overbuild	3
512	40	COLA demands further betterments throughout balance of Project execution (includes LADWP). Cost shown are above the current forecast	2
514	30	Fan Plant final modification negotiated above 12M. Costs shown are above the current forecast and adjustment	8
518	10	Flower - South inefficiencies related to SOE, excavation and utility protection asserted by RCC may lead to cost exposurers	4

Risk Refresh Update

Metro completed the 50% Construction Risk Refresh with issuance of a draft report including background data, study bases and simulation results.

Following FTA protocols, the findings of the study indicated the target RSD of September 1, 2022 to be within three weeks of the simulated completion – correlated to the 65% probability level.

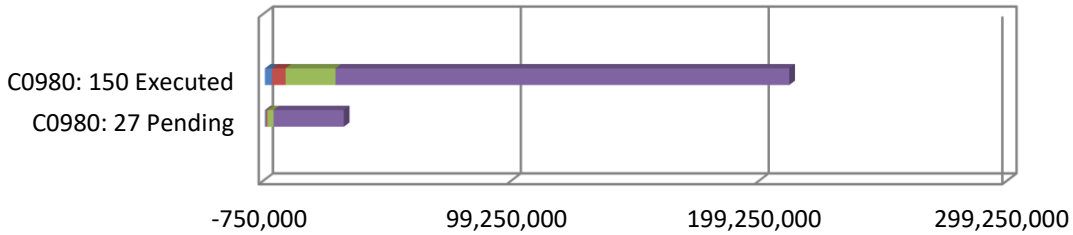
On the cost side, the top-down FTA model at the 65% probability range returned a forecast of \$1,662M – approximately \$69M below the Project’s cost forecast (excluding Finance costs).

Risk Management findings indicate a growing awareness and focus on threats and opportunities among the Project Team. Risk cost exposure was also reported to be trending lower than previous years – even though the number of identified risks has increased significantly.

Finalization of the Report is underway based on recent receipt of FTA/PMOC comments related to the above draft. It is expected to issue in July along with the other related documents.

Summary of Contract Modifications

Contract Modifications (MODs) by Cost Level



	C0980		Total
	150 Executed	27 Pending	
■ Under \$100K	2,871,813	423,000	3,294,813
■ \$100K to \$250K	5,471,107	600,000	6,071,107
■ \$250K to \$1M	20,124,298	2,475,650	22,599,948
■ Over \$1M	183,109,237	28,343,878	211,453,115
Total Contract MODs	211,576,455	31,842,528	243,418,983
Contract Award Amount	927,226,995	927,226,995	
% of Contract MODs	22.8%	3.4%	

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 *fifty* (150) changes with a total value of \$211.58 million have been executed since NTP of Contract C0980. An additional 27 changes, with a total estimated value of \$31.84 million, are pending.

DISADVANTAGED BUSINESS ENTERPRISE (DBE)

As of *May* 2019:

DBE Commitment – Design The percentage of funds apportioned to Design Contracts	22.63%
Current DBE Commitment Design Total DBE Committed Dollars divided by Total Contract Value for Design	\$14.4M (22.63%)
Current DBE Participation Total amount paid to date to DBEs divided by the amount paid to date to Prime	26.99%

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

DBE Commitment – Construction The percentage of funds apportioned to Construction Contracts	18%
Current DBE Commitment Construction Contract commitment divided by current contract value for Construction	\$194M (18%)
Current DBE Participation Total amount paid to date to DBEs divided by the amount paid to date to Prime	12.56%

Ninety-three (93) Construction DBE sub-contractors have been identified to date.

PROJECT LABOR AGREEMENTS (PLA)

As of *May* 2019:

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	16.77%
Disadvantaged Worker Goal Construction work to be performed by Disadvantaged Workers who are residents of the United States	10.00%
Disadvantaged Worker Current Attainment	9.38%

FINANCIAL/GRANT

Status of Funds by Source

June 2019

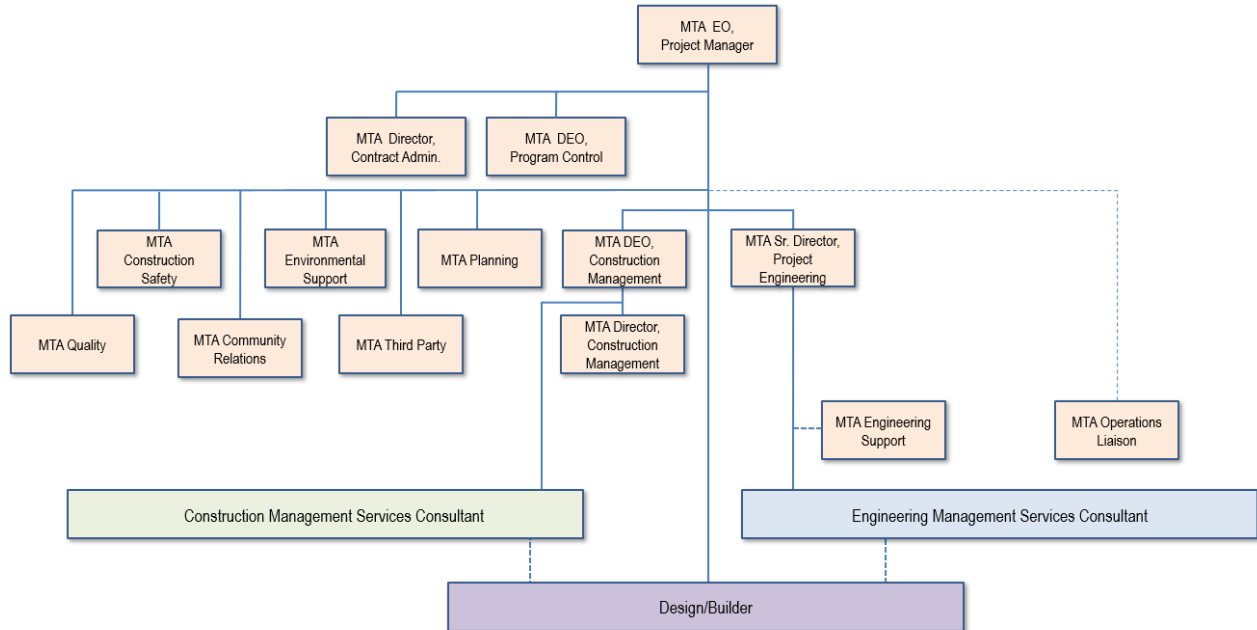
SOURCE	(A)	(B)	(C)	(D)	(D/B)	(E)	(E/B)	(F)	(F/B)
	ORIGINAL BUDGET	TOTAL FUNDS ANTICIPATED	TOTAL FUNDS AVAILABLE	COMMITMENTS \$	%	EXPENDITURES \$	%	BILLED TO FUNDING SOURCE \$	%
FEDERAL - CMAQ	\$64.00	\$218.11	\$64.00	\$128.91	59%	\$49.87	23%	\$46.02	21%
FEDERAL - SECTION 5309 NEW STARTS	\$669.90	\$669.90	\$465.00	\$669.90	100%	\$394.35	59%	\$391.04	58%
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	\$135.71	\$160.00	100%	\$135.71	85%	\$135.71	85%
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	\$262.74	96%	\$229.79	84%	\$220.29	80%
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	\$28.00	\$31.04	74%	\$28.00	67%	\$28.00	67%
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	\$8.55	20%	\$8.55	20%	\$8.55	20%
TOTAL	\$1,427.13	\$1,755.84	\$1,265.08	\$1,528.17	87%	\$1,100.30	58%	\$1,083.64	62%

NOTES:

1. EXPENDITURES ARE CUMULATIVE THROUGH JUNE 30, 2019
 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

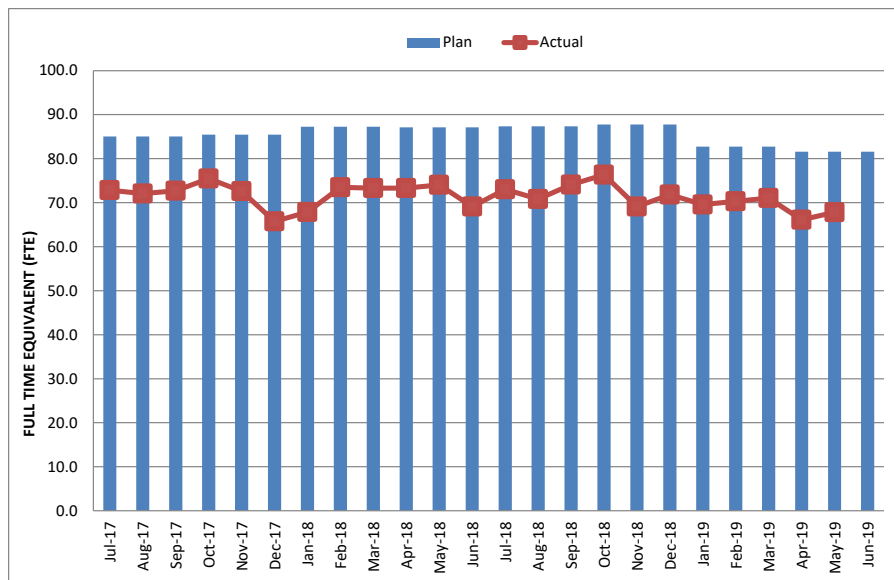
The D/B contract is being managed by a joint team of Metro and consultant personnel jointly located at the Integrated Project Management Office (IPMO).



Updated: 03/2019

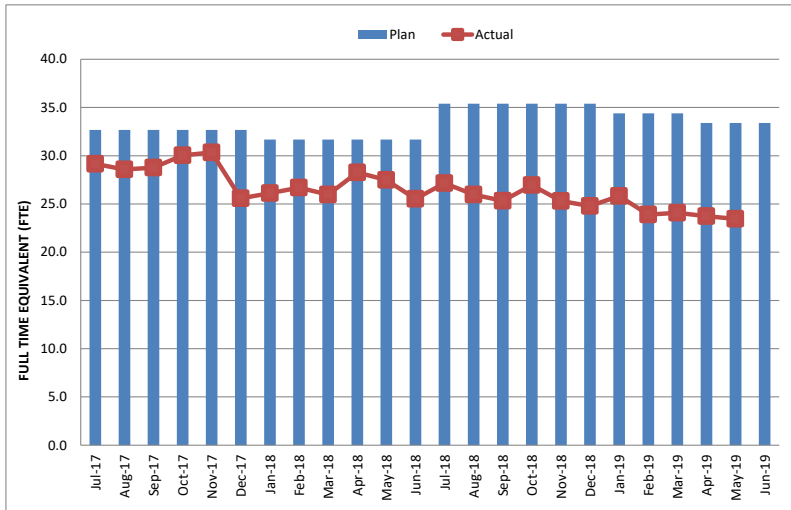
The overall FY19 Total Project Staffing plan averages 84.8 FTE's per month. The total actual project staffing for *May 2019* was 67.8; 23.5 actual FTEs for Metro's Project Administration staff and 44.3 FTEs for consulting staff. Review of staffing plans is on-going to ensure staffing needs are appropriately managed.

Total Project Staffing – Metro and Consultants

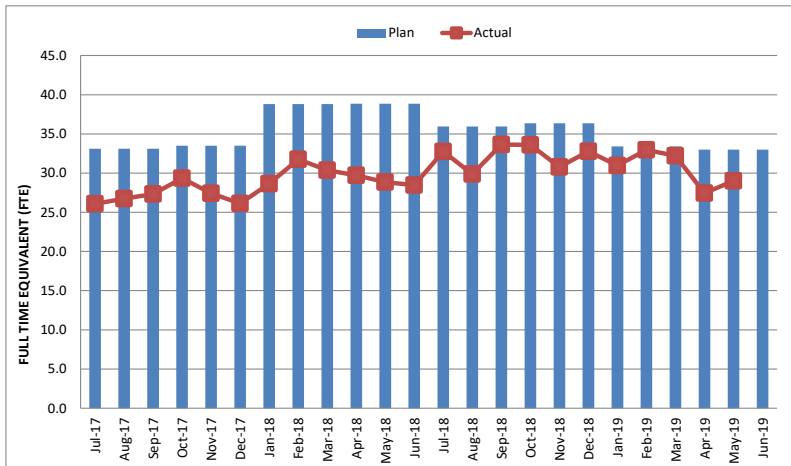


May actuals include 3.6 FTEs related to PMSS Services.

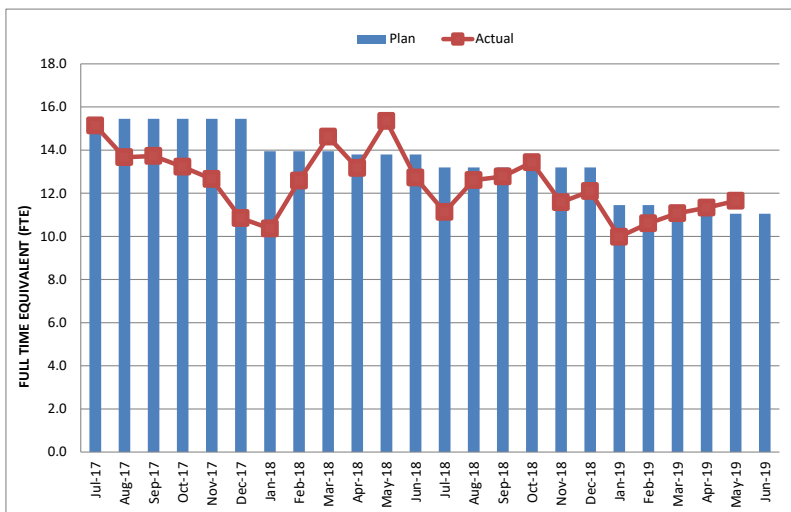
Metro Staff



CM Support Services Staff (Consultant)



Engineering Services Staff (Consultant)



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.

All above data through May 2019

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)

- Reconciliation of the TCE, along with all other Mangrove issues to include the Fan Plant and Metro-owned parcels, was reached in late April 2019. Timely access to the Fan Plant will be available for construction needs, and the yard TCE is extended into mid-2022 pending City Council, MTA Board and FTA approval for the Mangrove agreement.

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

- LADWP and Metro staff have agreed to terms and conditions. The formal agreement is to be approved by LADWP’s Board and the City Council.

QUALITY ASSURANCE

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
- Attended "Readiness Review" meetings with RCC
- *Metro QA conducted a surveillance (C980-Surv-2019-012) for the installation of Ancillary Deck 199-D at Grand Av Arts/Bunker Hill Station. No anomalies were noted during this surveillance.*
- *Metro QA conducted a surveillance (C980-Surv-2019-013) for the installation of East Wall #1 at the Flower St. Cut and Cover. This surveillance found no anomalies during the installation activities.*
- *Metro QA conducted a Quarterly Audit (C980-AUD-2019-002) of the RCC Quality Management System regarding Sub-contractors and As-Built Drawings. The Audit is in progress, any findings will be noted in the next reporting Period.*

RCC NCR 0065, issued in April 2019 due to improper curing practices on a wall that was placed at Historic Broadway Station, was closed after approval by the Engineer of Record and Metro for a Use-As-Is Disposition.

RCC NCRs 0038, 0041, 0044, 0047, 0052, 0053, 0054, 0056, 0057, 0058, 0059, 0061, 0064, 0066 and 0067 remain open with no change.

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 *June*, the weather was *primarily warm* and sunny with no recorded rain event. The sunny conditions increased the fugitive dust conditions and are logged daily by all construction areas. Daily street sweeping and increased water spraying of all sites continued for dust mitigation throughout the month.
- Metro submitted the 25th Quarterly Mitigation Monitoring and Reporting Plan covering February 2019 to April 2019 to the FTA on May 14, 2019. Metro staff and the PMOC *met on June 10th* to review supporting documentation for the 25th Quarterly Mitigation Monitoring and Reporting Plan. *A PMOC review report is forthcoming.*
- Noise and vibration spot checks continue to be conducted weekly at multiple sensitive locations, and at the location of new activities along the alignment. There have been inquiries from stakeholders adjacent to the future Grand Av Arts/Bunker Hill Station construction site; however, Metro/RCC's Community Relations team have been responsive and continue to actively address community concerns. There were also noise complaints as a response to recent construction of forms at the surface elevation at Broadway Station during swing shift. However, the sequence of activities was provided along with field adjustments to mitigate noise levels. Also, assembly of future forms will take place inside the cavern rather than at the surface elevation of the station. 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.
- SEM Cavern construction phase has reached a relatively low potential to produce ground-borne vibration and noise due to working on concrete placement and HDPE installation. Therefore, the vibration/seismic monitor was removed on May 8, 2019 from the Higgins Building adjacent to 2nd Street. However, a dedicated seismic monitor is still located in the basement of the Metropolitan News Building.

CONSTRUCTION AND COMMUNITY RELATIONS

Construction Relations

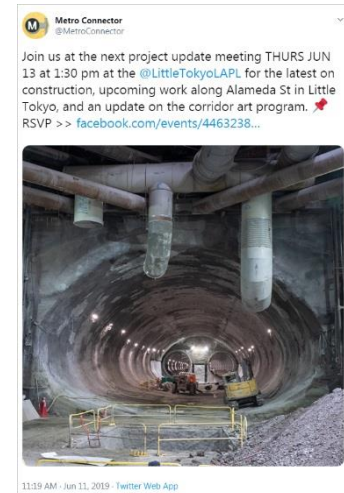
- Responded and addressed Project related inquiries from the public received via the hotline, email and during office hours at the Little Tokyo Community Office. Concerns were addressed by RCC and Metro project staff.
- Performed public outreach and construction coordination to impacted area stakeholders regarding the following construction activities: concrete placement throughout the alignment, utility relocation *and pile installation* work on Alameda at Temple.
- Distributed *thirteen (13)* construction notices to the public on the above activities through email and made it available on the Project website and social media outlets.
- Completed a total of *eleven (11)* construction coordination activities for access requests to perform geotechnical-monitor maintenance to on-site instruments and removal of BMPs.
- Provided weekly construction updates and coordinated work activities with *fourteen (14)* stakeholders throughout the alignment via email.
- *Hosted a public meeting to provide an update on the progress of construction project wide, including notable progress at each of the stations and cut & cover sites, presented on the 1st/Alameda street restoration closures planned to start December 7, 2019 and provided an update on construction mitigation activities under Eat, Shop, Play – a business mitigation program designed to enhance visibility of businesses impacted by construction. The Art Department provided an update on the development of art work at the different stations as well as the artists' public engagement activities.*
- Completed *nineteen (19)* briefings to local organizations and institutions in Little Tokyo and the Arts District on upcoming street restoration and closures at 1st and Alameda in an effort to initiate coordination during construction. *The following organizations were briefed: LTBA, LTCC, JACCC, Little Tokyo Leaders, Nishi Hongwanji Buddhist Temple, St. Francis Xavier Chapel, Go For Broke Monument, LTSC and LARABA.*
- 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

- *Held four (4) Lunch Meet-Ups at: Senor Fish, Cafecito Pura Vida, Mitsuru Sushi & Grill and Prime Pizza. Meet-Ups are an opportunity for the public to experience a new business along the project alignment impacted by construction and an opportunity to generate additional foot traffic for a business. The events are promoted through social media.*

Social Media Outreach

- Published *eleven (11)* newsletters including *thirteen (13)* construction updates, totaling 18.2k mailings.
- Trending stories on social media included new photos the crossover cavern at Broadway generating 1,817 impressions and 44 engagements, notice of the summer public meeting, and news of Expo Line service interruptions.



Community Relations

- Continued work with the monthly Little Tokyo Marketing & Business Task Force to promote special events in Little Tokyo. *Finalized* special programming workshops during Delicious Little Tokyo *taking place* in July.
- *Initiated* coordination efforts with Little Tokyo Business Association (LTBA) to market and promote Anime Expo and the Metro sponsored-shuttle service facilitating travel between the Convention Center and Little Tokyo.

CREATIVE SERVICES

Art Program

- Continued final design *deliverables* for corridor artworks
- Coordinated with RCC on art glass fabricator procurement
- Coordinated with RCC on final porcelain enamel steel art fabricator *contracting*
- Coordinated community stakeholders to generate narrative text and image assets for Atomic Café Interpretive Graphic Display
- Completed evaluation of glass mosaic fabricators and prepared for contracting
- Coordination for Project Community meeting hosted on June 13
- Coordination and participation for Arts District community event on June 15
- *Installed temporary artwork, created during artist-led community engagement event, at the Little Tokyo Service Center's Far East Lounge*
- *Planning for entry pavilion artwork at Grand Av/Arts Bunker Hill Station*
- Assessment of Project operating impacts to signage systemwide

SAFETY & SECURITY

C0980 Regional Connector

- Monitored RCC's pre-employment drug/alcohol testing and new employee safety orientation to *ensure* 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 *ensure* 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* during the month of *June 2019*.
- RCC reported *59,417* work hours for *May 2019*. RCC's total Contract to Date work hours through *May 2019* are *3,028,569* with a total of *15* Recordable Injuries and no Lost Workday (Days Away) case injuries. The C0980 Contract Recordable Injury Rate is *0.99*. 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 *May 2019* is *3,139,628* hours with *16* 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 *May 2019* is *3,842,750* with *17* 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
December 2018	RCC completed SEM right drift excavation

December 2018	RCC completed the Historic Broadway Station west invert
December 2018	RCC started tunnel walkways between the future Little Tokyo/Arts District Station to Historic Broadway Station
December 2018	RCC started the future Little Tokyo/Arts District Station east invert
December 2018	RCC completed Grand Av Arts/Bunker Hill Station mezzanine concrete
January 2019	RCC completed Grand Av Arts/Bunker Hill Station invert concrete
January 2019	RCC completed SEM center top drift excavation.
January 2019	RCC started Little Tokyo/Arts District Station west cable pit and sump pit
February 2019	RCC completed SEM excavation
February 2019	RCC completed platform level exterior walls at Grand Av Arts/Bunker Hill Station
February 2019	RCC started fire protection in tunnels
March 2019	RCC completed Little Tokyo/Arts District Station invert concrete
March 2019	RCC completed Bored Tunnels walkway concrete
April 2019	RCC completed Grand Av Arts/Bunker Hill Station east concourse deck concrete
April 2019	RCC completed 1 st Street Cut & Cover / U-Channel Level 1 excavation
May 2019	RCC completed North Flower Cut & Cover tunnel invert concrete
May 2019	RCC completed Wye Cut & Cover tunnel invert concrete
June 2019	<i>RCC completed Right Tunnel floating slab curb</i>