

Westside Purple Line Extension Section 2 Project



Metro®

WESTSIDE PURPLE LINE EXTENSION SECTION 2 PROJECT

MONTHLY 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).

MAY 2018

TABLE OF CONTENTS

	Page No.
Project Overview & Status.....	1
Management Issues.....	3
Project Alignment by Sections.....	4
Project Alignment Section 2.....	5
Base Project Scope.....	6
Project Status	
• Project Schedule	
○ Key Milestones Six-Month Look Ahead.....	8
○ Project Summary Schedule.....	9
○ Schedule Measurements.....	10
○ Overall Construction Progress Curve.....	11
○ Major Equipment Delivery.....	12
○ Design-Builder’s (C1120) Long Lead Item List.....	13
○ Critical Path Narrative.....	14
○ Project Schedule Contingency Drawdown.....	15
○ Project Schedule Contingency Drawdown Analysis.....	15
• Project Cost	
○ Project Cost Status.....	16
○ Project Cost Analysis.....	16
○ Project Cost Contingency Drawdown.....	17
○ Project Cost Contingency Drawdown Analysis.....	17
○ Race-Conscious Disadvantaged Business Enterprise (RC-DBE)	18
○ Project Labor Agreements (PLA) Status.....	18
○ Summary of Contract Modifications.....	19
• Financial/Grant	
○ Financial/Grant Status.....	20
○ Status of Funding Anticipated.....	20
• Staffing Status	
○ Total Project Staffing.....	21
○ Metro Staffing.....	22

TABLE OF CONTENTS (Continued)

	Page No.
• Construction Management Support Services Consultant.....	22
• Engineering Management Services Consultant.....	23
• Real Estate Status.....	24
• Quality Assurance Status.....	25
• Environmental Status.....	26
• Construction Relations Status.....	27
• Creative Services Status.....	27
• Safety & Security Status.....	28
• Third Party Agreement Status.....	29
• Advanced Utility Relocation Status.....	30
• Peak Hour and Nighttime Construction Variances.....	30
• Chronology of Events.....	31
• Construction Contracts	
◦ Contract C1120 Status	33
• Construction Photographs.....	34
Appendices	
• Cost and Budget Terminology.....	35
• List of Acronyms and Abbreviations.....	36

PROJECT OVERVIEW & STATUS

Section 2 of the Westside Purple Line Extension Project is the second of three sections to be designed and constructed as part of the Los Angeles County Metropolitan Transportation Authority (LACMTA) Measure R Program. The program was approved by Los Angeles County voters in November 2008 and provides a half-cent sales tax to finance new transportation projects. In April 2012, the three sections of the Project were environmentally cleared and adopted by LACMTA Board of Directors.

Section 2 will extend the future Wilshire/La Cienega Station that is part of the Westside Purple Line Extension Section 1 Project currently under construction to the Century City area. The Project is located entirely underground, primarily following Wilshire Boulevard, and includes the design and construction of approximately 2.59 miles of double-track heavy rail and two new stations as well as the purchase of 20 heavy rail vehicles. The Project also includes train controls, signals, traffic controls, communications, traction power supply and distribution, fare collection systems and equipment, acquisition of right-of-way, and utility relocations.

Design

The Engineering Management Services (EMS) team continues to provide design support for the Advanced Utility Relocation (AUR) work in Century City and Beverly Hills as well as real estate support services. The team is also supporting Metro in reviewing final design submittals, responding to RFI's, and assisting in the preparation of change notices.

The C1120 Contractor, Tutor Perini/O&G, a Joint Venture (TPOG), has mobilized the final design team, STV.

The design work has been identified into three distinct design unit packages. They are:

1. Design Package 1 – Utility/Civil Design at Launch Box in Century City
2. Design Package 2 – Remaining Utility Conflicts (Outside of Launch Box)
3. Design Package 3 (Volume 1) – Tunnel Reaches
Design Package 3 (Volume 2) – Stations
Design Package 3 (Volume 3) – Track & Systems

Metro, TPOG and STV are working together to identify advanced partial design units for design package 3 and proposed submittal dates to facilitate timely design review to support the project schedule.

Each design unit package will be submitted and evaluated at each of the following phases: 60%, 85%, 100%, Approved for Construction (AFC) and Issued for Construction (IFC). If required, critical design units can be advanced as Advanced Partial Design Units (APDU's) to support ongoing construction activities.

Design progress meetings are occurring weekly related to the design unit packages. Weekly design task force meetings (by individual discipline) began at the end of March 2018 and are scheduled to continue through design completion. TPOG is continuing with the required contractual submittals. *Design related submittals of note that TPOG has submitted this month are: Design Package 3 Volumes 2A and 2C – Station Architecture and MEP 60% design complete; Design Package 3 Volume 1 – Geotechnical Report 60% design complete; Design*

Package 3 Volume 1A – Tunnel Liner 85% design; Design Package 1D – Construction Staging at Launch Box 100% design complete; and BIM at Launch Box.

Final design is approximately 67% complete.

Major Contract Procurement

All construction contracts for the Project have been awarded.

Construction

Advanced Utility Relocations

Century City Constellation: *LADWP Power civil work began in May 2017 and is 80% complete.* AT&T duct bank and vault construction began in November 2017, and is anticipated to complete in Summer 2018. Cable pulling and splicing to follow for both utilities with an anticipated completion in 2019.

Wilshire/Rodeo: Southern California Gas (SCG) and AT&T work started on February 12, 2018, is ongoing and anticipated to complete in Summer 2018.

Contract C1120 – Tunnels, Stations, Trackwork and Systems (Design/Build)

Contract award was issued on January 31, 2017 and Notice to Proceed on April 26, 2017. TBM's purchase order has been executed.

Geotechnical investigations in the City of Beverly Hills started in late 2017 and are ongoing. Seventeen borings have been completed to date. Pre-construction surveys are ongoing.

Site preparation work at the future Wilshire/Rodeo Station entrance started in May 2018.

Other major construction activities to begin in the near future are the soldier pile installation for the TBM launch box and the TBM tunnel shaft at the eastern end of the Century City Constellation Station. This work is scheduled to begin in July 2018.

Demolition of 1940 and 1950 Century Park East, geotechnical fault line investigation borings, and removal of oil lines in Century City started in late May 2018.

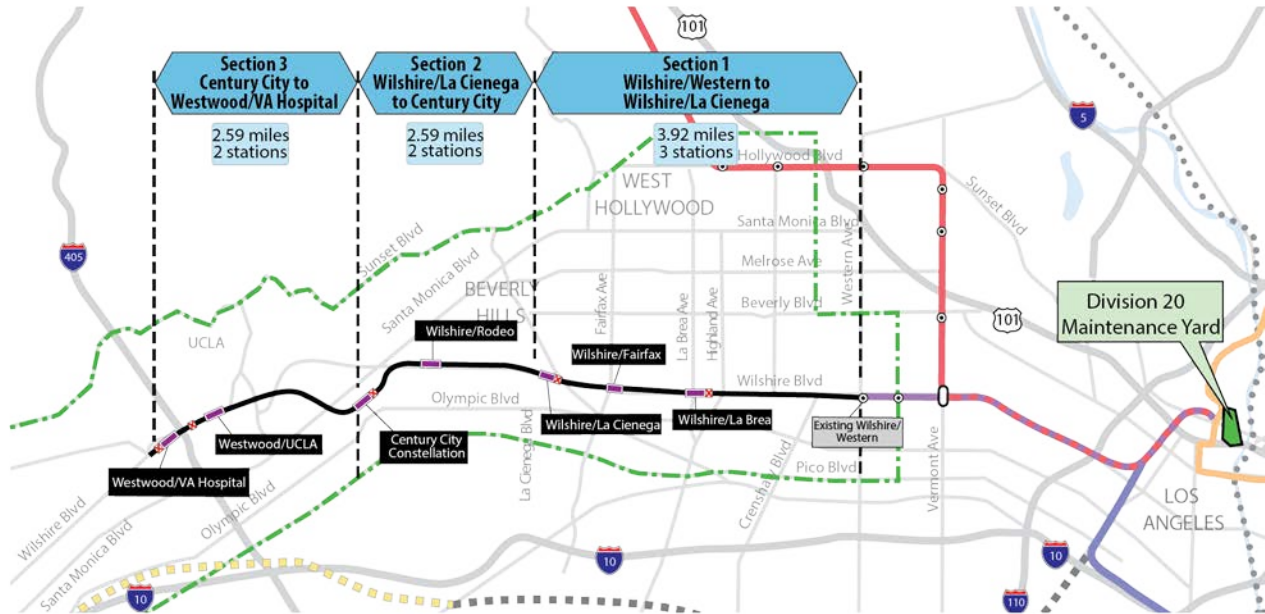
Sound wall installation at 2040 Century Park East (construction staging area) is in progress.

Beverly Hills City Council approved the Memorandum of Agreement (MOA) governing remaining third party utility relocation work on November 22, 2017. *Final MOA negotiations are ongoing with the City of Beverly Hills for the C1120 Contract and are anticipated to complete in Summer 2018.*

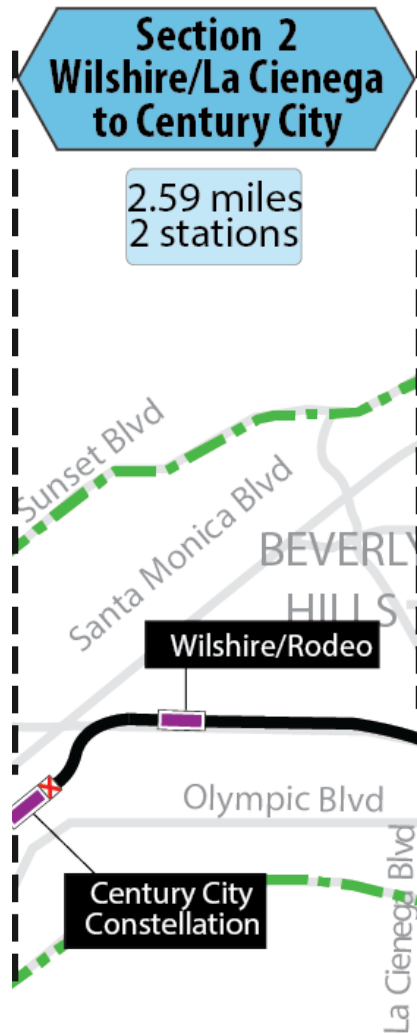
MANAGEMENT ISSUES

No management issues this period.

PROJECT ALIGNMENT BY SECTIONS



PROJECT ALIGNMENT SECTION 2



BASE PROJECT SCOPE

Section 2 of the Westside Purple Line Extension Project is the second of three sections to be designed and constructed as part of the Los Angeles County Metropolitan Transportation Authority (LACMTA) Measure R Program. The program was approved by Los Angeles County voters in November 2008 and provides a half-cent sales tax to finance new transportation projects. In April 2012, the three sections of the Project were environmentally cleared and adopted by LACMTA Board of Directors.

Section 2 will extend the future Wilshire/La Cienega Station that is part of the Westside Purple Line Extension Section 1 Project currently under construction to the Century City area. The Project is located entirely underground, primarily following Wilshire Boulevard, and includes the design and construction of approximately 2.59 miles of double-track heavy rail and two new stations as well as the purchase of 20 heavy rail vehicles. The Project also includes train controls, signals, traffic controls, communications, traction power supply and distribution, fare collection systems and equipment, acquisition of right-of-way, and utility relocations.

The Wilshire/Rodeo Station box will be under the center of Wilshire Boulevard beginning just east of South Canon Drive and extending to El Camino Drive. The entrance will be on the southwest corner of Wilshire Boulevard and Reeves Drive.

The Century City Constellation Station box will be under the center of Constellation Boulevard between Century Park East and Solar Way. A double crossover will be located east of this station. The entrance will be on the northeast corner of Constellation Boulevard and Avenue of the Stars. In lieu of tail tracks, safe breaking distance will be provided at the interim terminus station.

Contract C1120 – Tunnels, Stations, Trackwork, Systems and Systems Integration Testing

The procurement of this contract utilized a two-step approach with the submittal of qualification statements through a Request for Qualification (RFQ) process, prequalification of qualified proposers followed by the release of a Request for Proposals (RFP) soliciting technical and price proposals with an option at Metro's discretion for Best and Final Offers (BAFO).

The Design/Build contract provides for final design and construction of the infrastructure along the 2.59 mile alignment. Contract scope includes demolition and removal of structures and clearing sites to facilitate construction operations. The structures to be constructed include twin bored tunnels complete with cross-passages and walkways including all mechanical, electrical and finished work. A tunnel boring launch (TBM) shaft will be constructed at the Century City Constellation Station. Two underground stations are to be constructed with one double crossover location set east of the Century City Constellation (terminus) Station. Each station has a single entrance plaza with stairs, escalators and elevators which meet ADA requirements. The scope of work also includes all architectural finishes, mechanical and electrical systems and equipment including train control, traction power, communications, trackwork, system tie-in to the Wilshire/La Cienega Station (currently under construction), testing and commissioning.

BASE PROJECT SCOPE (Continued)

Metro Furnished Equipment




Metro has procured a separate contract to provide the 20 Heavy Rail Vehicles (HRV) and will procure a separate contract for the Universal Fare System (UFS) necessary to operate the Purple Line. The scope of the HRV contract includes design, manufacturing, testing and delivery of the vehicles. The scope of the UFS contract will include design, fabrication and installation of equipment at the two stations and system testing.

Start Up

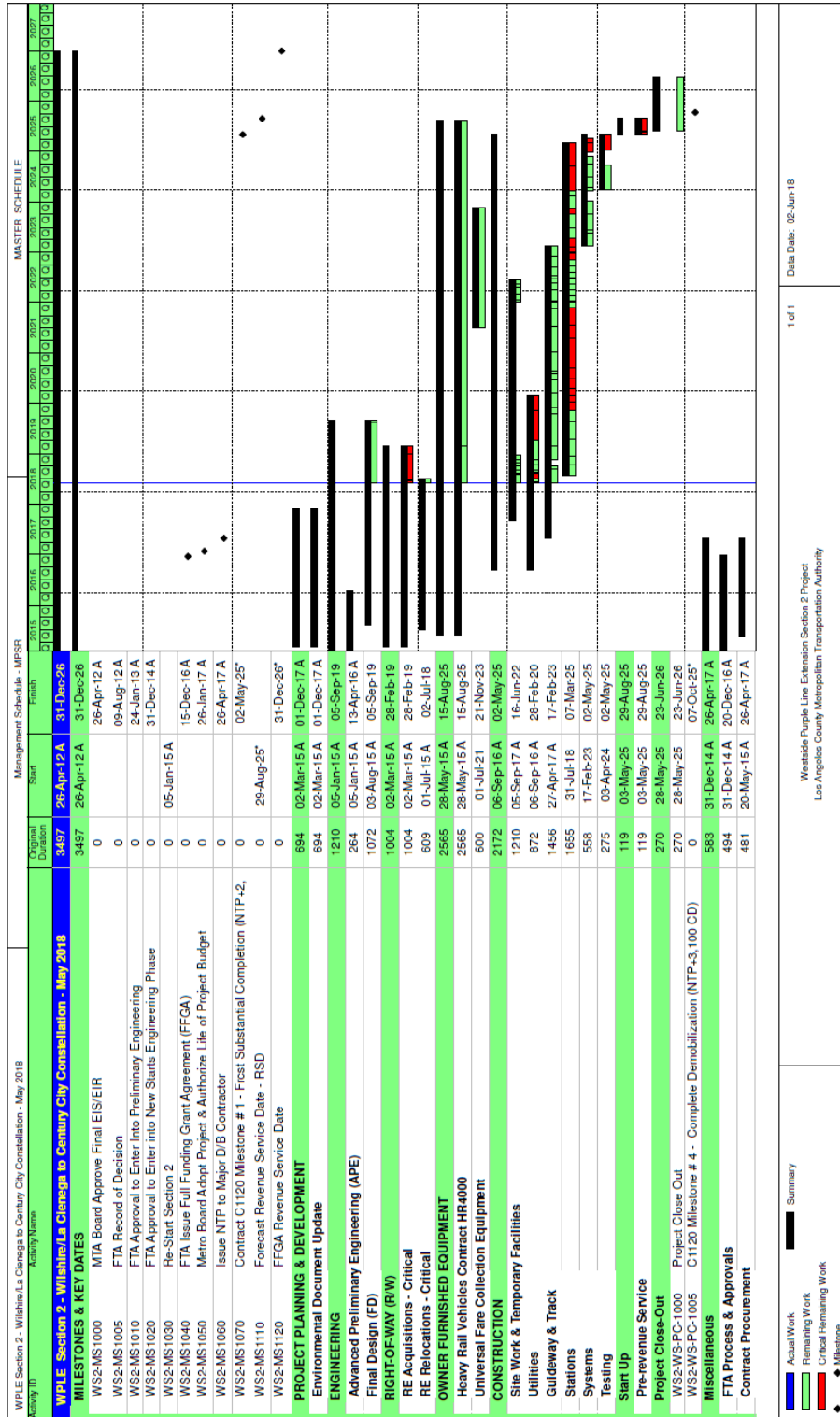
The commencement of pre-revenue operations will be determined by Metro. Generally, all systems integration testing will have been completed and passed. All testing will be required to include and pass a “stress test” of maximum operational service levels to be acceptable. Pre-Revenue Operations include train runs, especially those involving multiple trains on the integrated and fully operational extension; rehearsal of expected revenue operations scenarios; abnormal and emergency scenarios in which random combinations of system interactions are tested and equipment “burned-in”; and training of emergency services as well as Metro personnel who will operate and maintain the extension. Activities occurring during Pre-Revenue Operations are carried out by a designated Metro Project Rail Activation Group.

KEY MILESTONES SIX-MONTH LOOK AHEAD

	Milestone Date	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18
Submit 100% Design Package 1 - Utility/Civil Design at Launch Box in Century City	06/04/18	<input type="checkbox"/>					
Submit 100% Drawings (Resubmittal) - SOE Wilshire/Rodeo Station	06/21/18	<input type="checkbox"/>					
Submit 100% Design Package 2 - Remaining Utility Conflicts (Outside of Launch Box)	06/29/18	<input type="checkbox"/>					
Issue IFC Drawings for Design Package 1 - Utility/Civil Design at Launch Box in Century City	07/10/18		<input type="checkbox"/>				
Start Construction Bus Layover Facility on Santa Monica Blvd.	07/18/18		<input type="checkbox"/>				
Start Installation of Soldier Piles - Launch Box in Century City	07/26/18		<input type="checkbox"/>				
Start Installation of Cap Beams - Launch Box in Century City	08/03/18			<input type="checkbox"/>			
Start Hang Utilities - Launch Box in Century City	08/08/18			<input type="checkbox"/>			
Third Party Utility Relocations Complete at Wilshire/Rodeo Station	09/07/18				△		
Issue IFC Drawings - SOE Wilshire/Rodeo Station	09/22/18				<input type="checkbox"/>		
TBM Temporary Power - Install Conduit & Substructure	10/01/18					<input type="checkbox"/>	
Submit IFC Drawings Package 2 - Remaining Utility Conflicts (Outside of Launch Box)	11/06/18						<input type="checkbox"/>

 MTA Staff
  Other Agencies
  Contractor

PROJECT SUMMARY SCHEDULE



1 of 1

Westside Purple Line Extension Section 2 Project
 Los Angeles County Metropolitan Transportation Authority

Summary

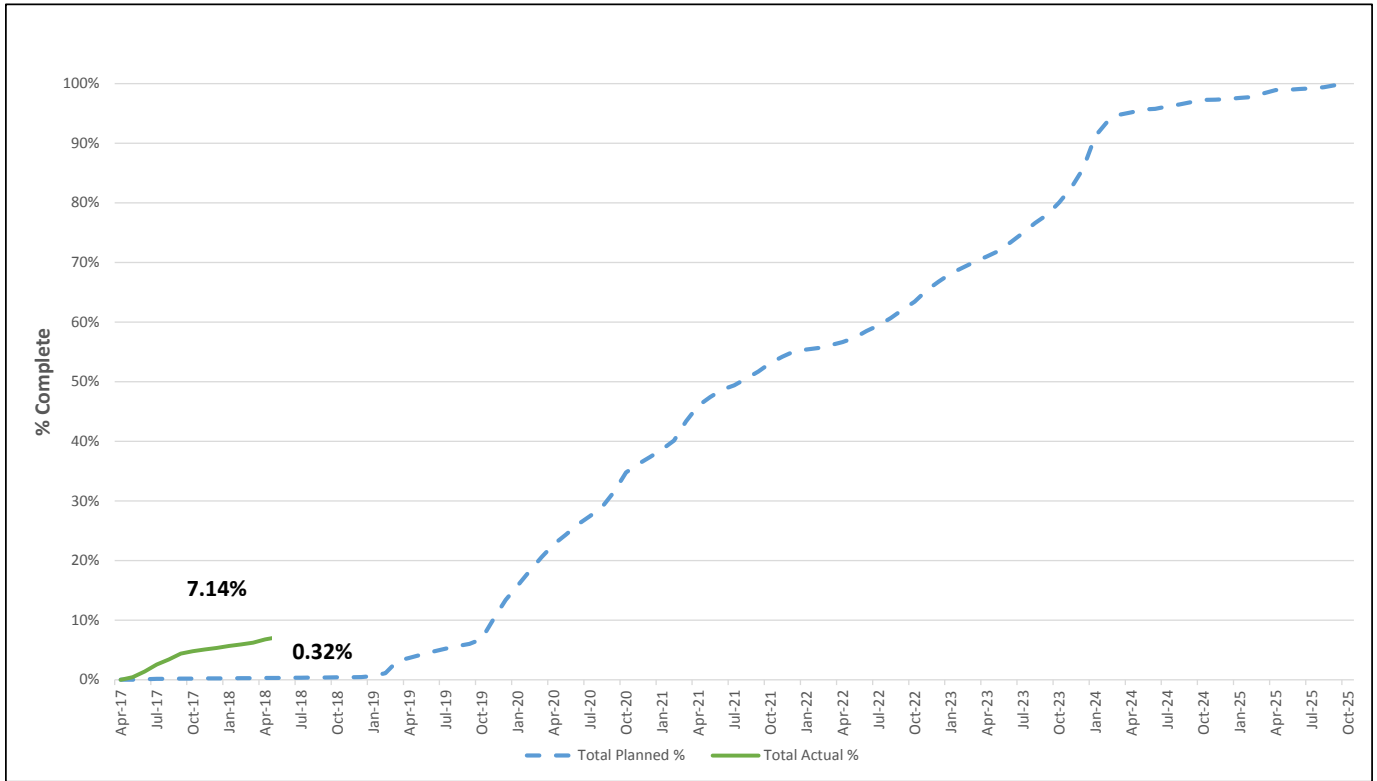
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

SCHEDULE MEASUREMENTS

	Status	Last Period	Change from Last Period	Comment
Forecast Revenue Service Date	8/29/2025	8/29/2025	None	
FFGA Revenue Service Date	12/31/2026	12/31/2026	None	
Final Design Progress:				
Contract C1120	66.94%	63.84%	3.10%	Final Design is currently scheduled to complete in August 2019.
Construction Contracts Progress*:				
Contract C1120	7.14%	6.79%	0.35%	NTP issued on April 26, 2017.

*Note: Physical completion assessment reflects work completed and work in progress.

OVERALL CONSTRUCTION PROGRESS CURVE



The actual overall construction progress is 7.14% versus a planned 0.32% through May 2018. The progress curves represent the physical progress of work performed to complete Contract C1120. The "Total Planned %" curve is based on the Contractor's late schedule dates from the approved baseline schedule.

The physical progress percentage excludes non-construction items such as contractor's design and construction mobilization costs and all general requirement costs not tied specifically to a construction work effort.

MAJOR EQUIPMENT DELIVERY

	Submittal	Procurement	Delivery	Installation
C1120 DESIGN/BUILD*				
Tunnel Boring Machine	7/27/17A	8/14/2017A	10/4/18	7/24/19
Emergency Ventilation Fans	8/30/19	9/5/19	2/25/20	2/11/21
Station Elevators/Escalators	7/1/19	8/2/19	7/27/20	5/6/21
Track	8/30/19	10/3/19	1/28/20	9/23/21
Automatic Train Control	10/31/18	12/3/18	7/3/19	5/14/21
Traction Power Equipment	12/2/19	1/20/20	9/23/20	9/16/21
SCADA RTU System	11/2/18	12/3/18	7/3/19	4/7/21
Radio System	11/2/18	12/3/18	7/3/19	4/7/21
Heavy Rail Vehicles	Exercise Option #3 March 1, 2019			
Universal Fare System	TBD	TBD	TBD	June 2023**

* Dates derived from TPOG's May 2018 Updated Schedule.

** Forecast release date by TPOG to UFS contractor access at stations.

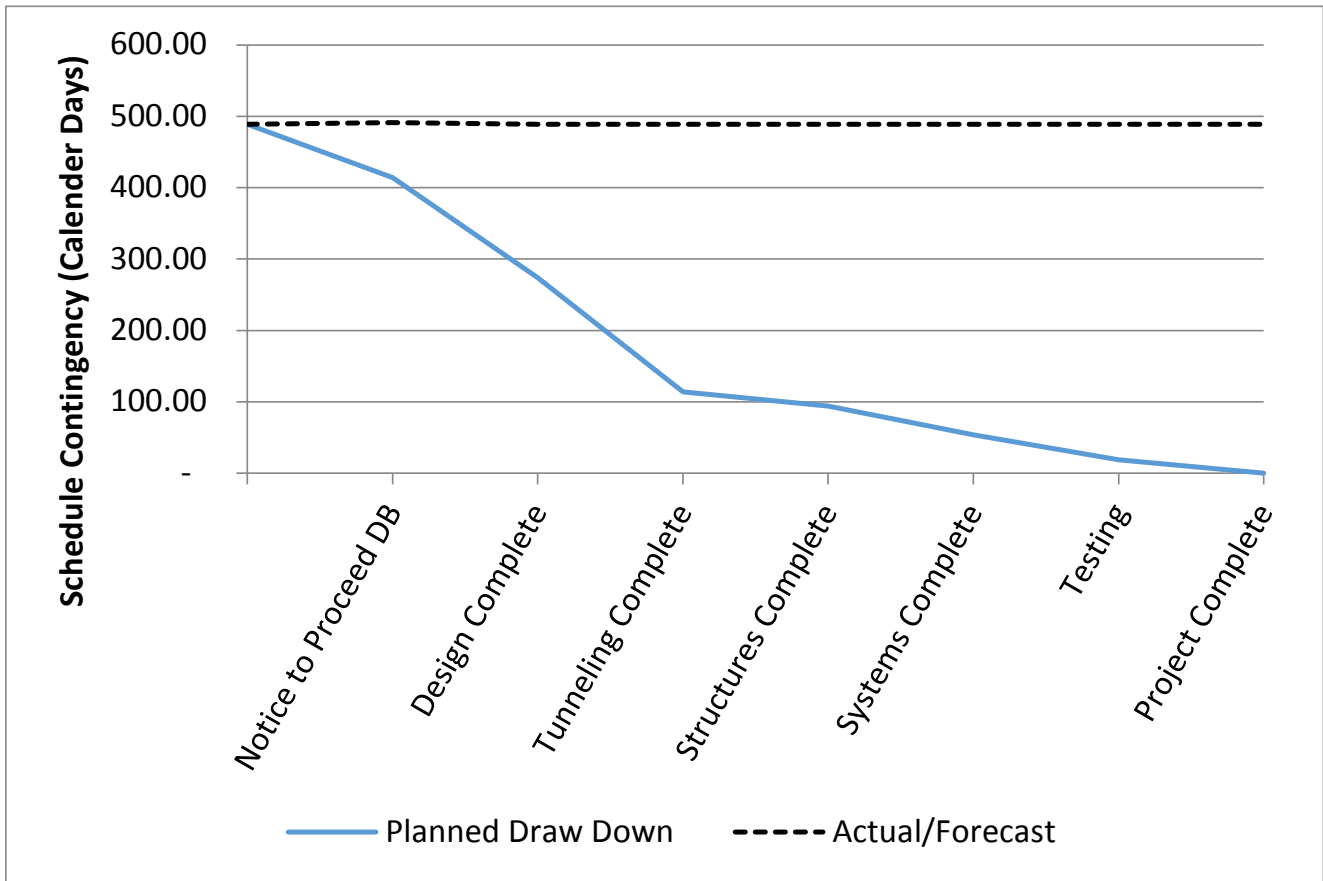
DESIGN BUILDER'S (C1120) LONG LEAD ITEM LIST

Currently under development.

CRITICAL PATH NARRATIVE

The Critical Path for the Westside Purple Line Extension Project Section 2 begins with third party utility relocations at the future Century City Constellation (CCC) Station and is followed by the Contractor, Tutor Perini/O&G a Joint Venture (TPOG), required utility relocations in the same area. The path then follows into installation of soldier piles on the north side, then immediately on the south side, then proceeding into support beams and temporary street decking of the CCC Station. The critical path then flows into excavation below the deck, and then structural concrete for the station through the arched roof concrete. The path continues into the installation of the interior finishes and mechanical/electrical equipment. Simultaneously, systems installation work for Automatic Train Controls, Traction Power and Communications will be ongoing. It follows with connecting with Rail Operations Center (ROC) for TPOG's System Integration Testing to ROC and then complete Systems Integration Testing for the Heavy Rail Vehicles, Communications tie-ins and with the Wilshire/La Cienega Station to obtain FLS Certification and CPUC Safety Certification Verification. The Critical Path ends with pre-revenue operations.

PROJECT SCHEDULE CONTINGENCY DRAWDOWN



PROJECT SCHEDULE CONTINGENCY DRAWDOWN ANALYSIS

The project schedule contingency drawdown curve is based on an August 29, 2025 Forecast Revenue Service Date (RSD).

PROJECT COST STATUS

DOLLARS IN THOUSANDS

SCC CODE	DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST/ BUDGET VARIANCE
			PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
10	GUIDEWAY & TRACK ELEMENTS	346,440	-	346,440	-	306,924	-	23,000	-	328,836	(17,605)
20	STATIONS, STOPS, TERMINALS, INTERMODAL	434,990	-	434,990	-	410,368	-	41	-	443,071	8,081
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	-	-	-	-	-	-	-	-	-	-
40	SITWORK & SPECIAL CONDITIONS	553,282	-	553,282	3,676	533,046	12,561	226,968	-	576,800	23,518
50	SYSTEMS	81,457	-	81,457	-	68,537	432	2,008	-	81,907	450
CONSTRUCTION SUBTOTAL (10-50)		1,416,169	-	1,416,169	3,676	1,318,874	12,993	252,017	-	1,430,614	14,445
60	ROW, LAND, EXISTING IMPROVEMENTS	426,396	-	426,396	-	230,081	150	151,274	-	426,396	-
70	VEHICLES	42,000	-	42,000	-	-	-	-	-	42,000	-
80	PROFESSIONAL SERVICES	374,878	-	374,878	-	175,707	7,892	125,346	-	375,974	1,096
SUBTOTAL (10-80)		2,259,444	-	2,259,444	3,676	1,724,663	21,034	528,637	-	2,274,984	15,540
90	UNALLOCATED CONTINGENCY	177,176	-	177,176	-	-	-	-	-	161,636	(15,540)
100	FINANCE CHARGES	88,695	-	88,695	-	-	-	-	-	88,695	-
TOTAL PROJECT 865522 (FFGA & NON-FFGA CONCURRENT ACTIVITIES)		2,525,314	-	2,525,314	3,676	1,724,663	21,034	528,637	-	2,525,314	-
ENVIRONMENTAL/PLANNING - 465518 & 465522		4,349	-	4,349	-	3,329	52	2,821	-	4,349	-
TOTAL PROJECT 465518 & 465522 (ENV / PLAN'G)		4,349	-	4,349	-	3,329	52	2,821	-	4,349	-
TOTAL PROJECTS 465518, 465522 & 865522		2,529,664	-	2,529,664	3,676	1,727,992	21,087	531,458	-	2,529,664	-

PROJECT COST ANALYSIS

Original Budget and Current Budget

The Original Budget and Current Budget of \$2.5 billion reflects the Life of Project (LOP) budget approved by the Board on January 26, 2017, plus Finance Charges of \$88.7 million.

Current Forecast

The Current Forecast remains the same this period at \$2.5 billion.

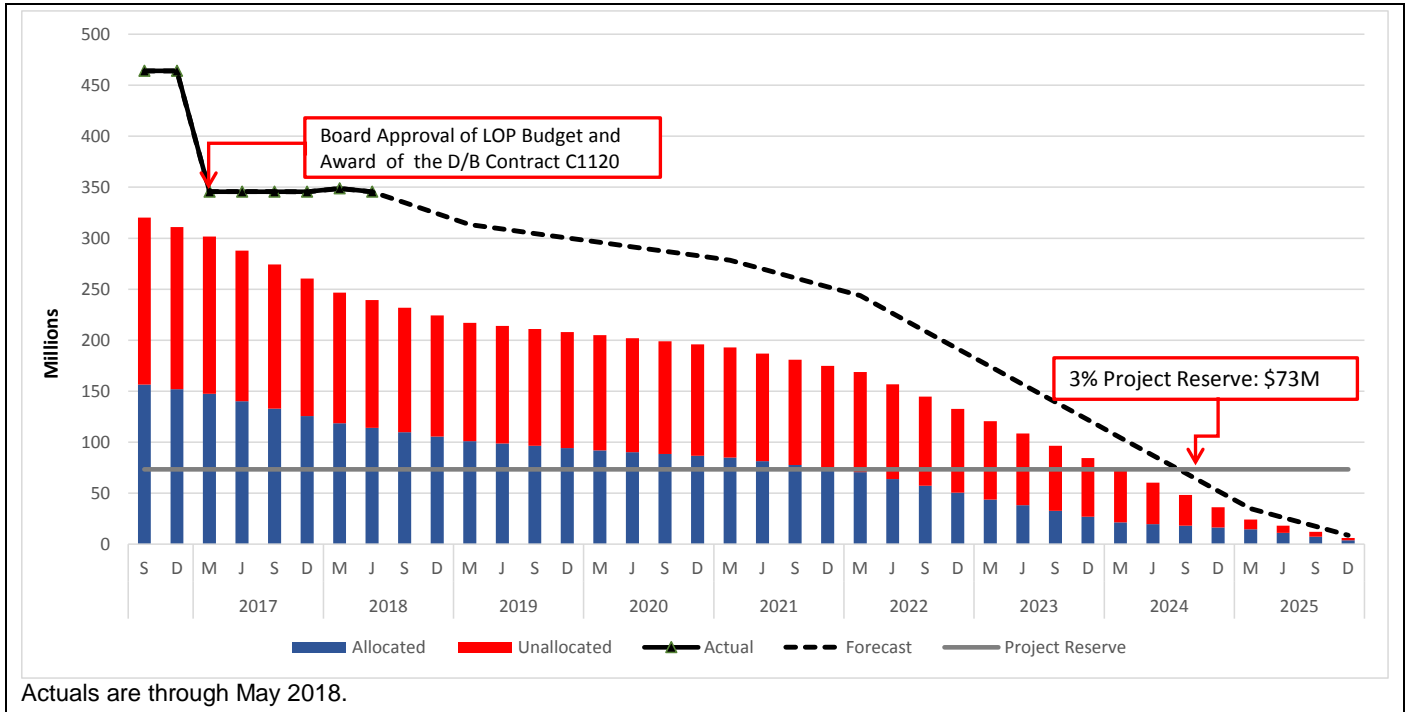
Commitments

The Commitments increased this period by \$3.7 million due to Executed Modifications for the Design/Build Contract C1120 and approved Task Order for Environmental Services. The \$1.7 billion in Commitments to date represents 68.3% of the Current Budget.

Expenditures

The Expenditures increased this period by \$21.1 million primarily for costs associated with Design/Build Contract C1120, Construction Management Support Services, Third Party Agreements, Memorandum of Agreement with City of Beverly Hills, Metro Project Administration and Engineering Management Services. The \$531.4 million in Expenditures to date represents 21% of the Current Budget.

PROJECT COST CONTINGENCY DRAWDOWN



PROJECT COST CONTINGENCY DRAWDOWN ANALYSIS

The Current Budget of \$2.5 billion includes finance charges of \$88.7 million. It also includes a project cost contingency of \$345.7 million or 13.7% of the total project, which is based on the Life of Project (LOP) Budget approved by the Board in January 2017. An allocated contingency amount of \$168.5 million is included in the total cost contingency. The allocated contingency is an amount to cover anticipated but unknown contract modifications issued by Metro [when applicable to specific contracts within each Standard Cost Category (SCC)].

A 3% project reserve threshold is included in the project cost contingency drawdown. Metro’s Board is to be notified when it becomes necessary to drawdown contingency below the project reserve threshold to cover project costs. This process was adopted by the Metro Board of Directors in September 2012.

The project cost contingency drawdown curve is based on an August 29, 2025 Forecast Revenue Service Date (RSD).

The allocated contingency decreased this period by \$3.3 million due to executed Contract Modifications for the Design/Build Contract C1120.

PROJECT COST CONTINGENCY					
DOLLARS IN THOUSANDS					
	Original Contingency (Budget)	Previous Period	Current Period	To-Date	Remaining Contingency (Forecast)
Unallocated Contingency	177,176	(15,540)	-	(15,540)	161,636
Allocated Contingency	168,534	18,636	(3,269)	15,367	183,901
Total Contingency	345,710	3,096	(3,269)	(173)	345,537

**RACE-CONSCIOUS DISADVANTAGED BUSINESS ENTERPRISE
(RC-DBE) STATUS**

Contract C1120

<ul style="list-style-type: none"> RC-DBE Goal – Design A numerically expressed percentage of funds apportioned to Design Contracts and is calculated based upon the relative availability of RC-DBE firms as compared to all firms in the relevant geographic market area. 	25.00%
<ul style="list-style-type: none"> Current RC-DBE Commitment – Design Total RC-DBE Committed Dollars divided by Total Contract Value for Design or Construction. 	\$14,731,914 (25.31%)
<ul style="list-style-type: none"> Current RC-DBE Participation Total amount paid to date to RC-DBEs divided by the amount paid to date to Prime. 	\$8,671,746 (18.16%)

Fifteen (15) Design RC-DBE subcontractors have been identified.

<ul style="list-style-type: none"> RC-DBE Goal – Construction A numerically expressed percentage of funds apportioned to Construction Contracts and is calculated based upon the relative availability of RC-DBE firms as compared to all firms in the relevant geographic market area. 	17.00%
<ul style="list-style-type: none"> Current RC-DBE Commitment – Construction Actual commitments as Construction work is awarded. 	\$77,732,279 (5.99%)
<ul style="list-style-type: none"> Current RC-DBE Participation Total amount paid to date to RC-DBEs divided by the amount paid to date to Prime. 	\$2,686,868 (1.19%)

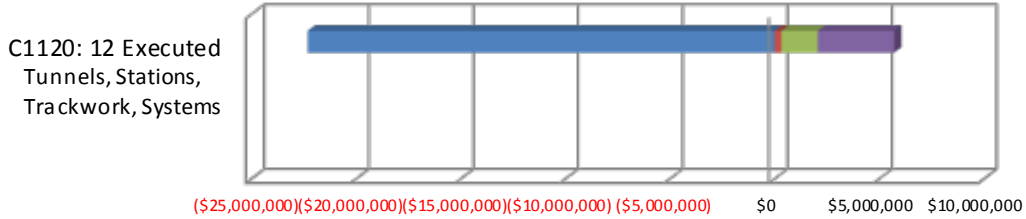
Seven (7) Construction RC-DBE subcontractors have been identified.

PROJECT LABOR AGREEMENTS (PLA) STATUS

TPOG has committed to comply with Project Labor Agreements/Construction Careers Policy (PLA/CCP) requirements for the Project. Project Staff will monitor and report TPOG’s progress toward meeting the goals of the PLA/CCP once construction begins.

SUMMARY OF CONTRACT MODIFICATIONS

Contract Modifications (MODs) by Cost Level



	C1120: 12 Executed
■ Under \$100K	(22,290,979)
■ \$100K to \$250K	334,875
■ \$250K to \$1M	1,736,288
■ Over \$1M	3,650,000
Total Contract MODs	(16,569,816)
Contract Award Amount	1,376,500,000
% of Contract MODs	-1.20%

Percent of Contract MODs equals the Total Contract MODs divided by the Contract Award Amount.

Twelve (12) Contract Modifications (MODS) with a total value of <\$16.6> million have been executed since the award of C1120 Contract – Tunnels, Stations, Trackwork and Systems.

FINANCIAL/GRANT STATUS

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 \$	FUNDING SOURCE %
FEDERAL - SECTION 5309 NEW STARTS	\$1,187.000	\$1,187.000	\$200.000	\$1,045.545	88%	\$184.589	16%	\$183.779	15%
FEDERAL CMAQ	\$169.000	\$169.000	\$43.000	\$43.000	25%	\$34.041	20%	\$34.041	20%
MEASURE R - TIFIA LOAN	\$307.000	\$307.000	\$207.000	\$207.000	67%	\$207.000	67%	\$207.000	67%
MEASURE R 35%	\$811.902	\$811.902	\$206.783	\$377.685	47%	\$51.066	6%	\$31.507	4%
STATE CAPITAL PROJECT LOANS	\$54.762	\$54.762	\$54.762	\$54.762	100%	\$54.762	100%	\$54.762	100%
TOTAL	\$2,529.664	\$2,529.664	\$711.545	\$1,727.992	68.3%	\$531.458	21.0%	\$511.089	20.2%

STATUS OF FUNDS ANTICIPATED

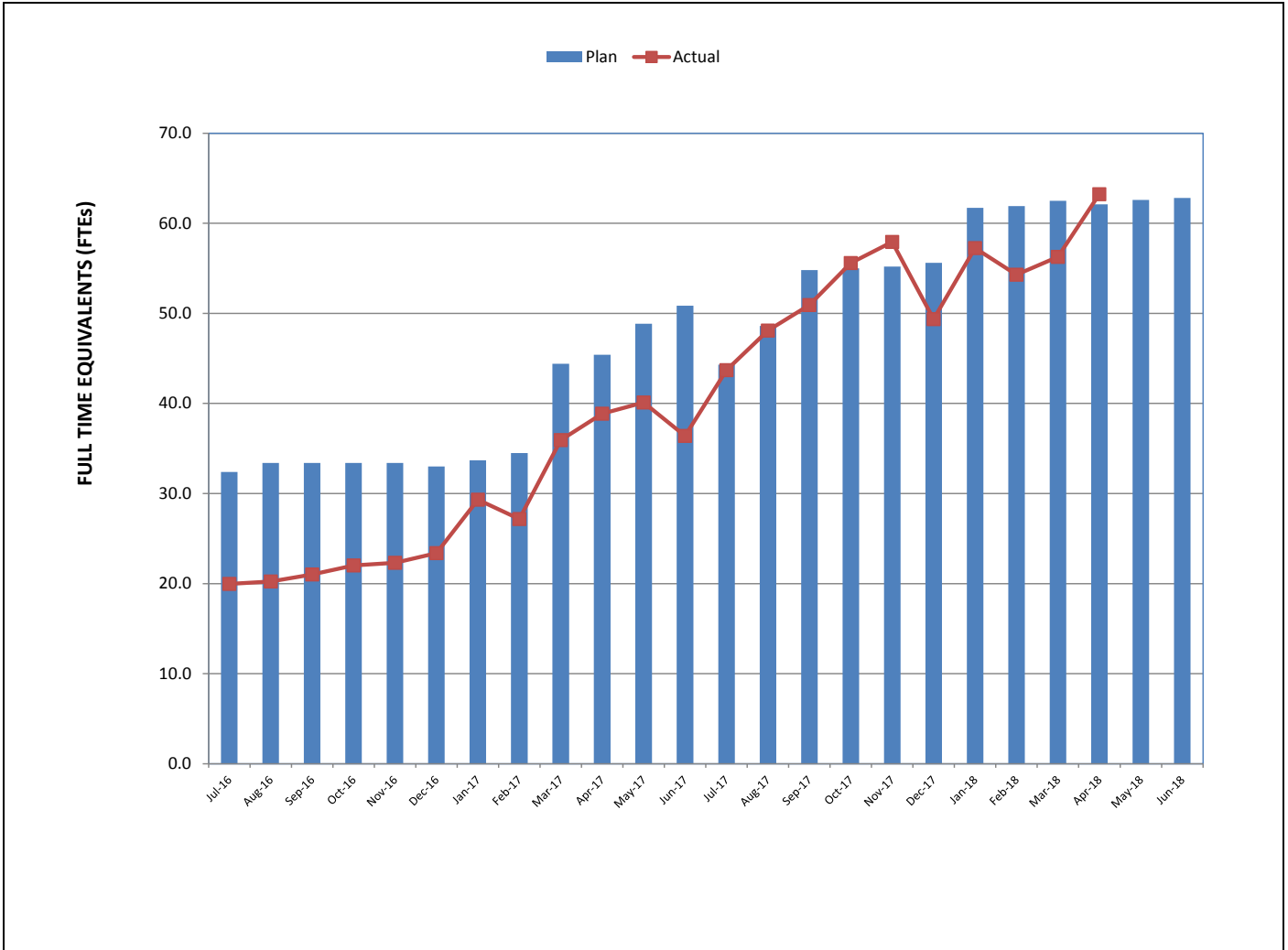
FEDERAL SECTION 5309 NEW STARTS: FTA grant CA-2016-047 for \$100.0 million was awarded by the FTA on December 15, 2016. FTA grant CA-2016-047 Amendment No. 1 for \$100.0 million was awarded by the FTA on September 22, 2017. Funds are available for drawdown.

CMAQ (Congestion Mitigation & Air Quality): FTA grant CA-2016-2045 for \$43.0 million was awarded by the FTA on December 15, 2016. Funds are available for drawdown.

MEASURE R – TIFIA LOAN (Transportation Infrastructure Finance & Innovation Act): TIFIA Loan was executed on December 20, 2016 for \$307.0 million. *\$207 million funds are available for drawdown.*

MEASURE R: \$206.8 million have been allocated to the Project through FY18. Funds are available for drawdown.

STAFFING STATUS
Total Project Staffing – FTEs

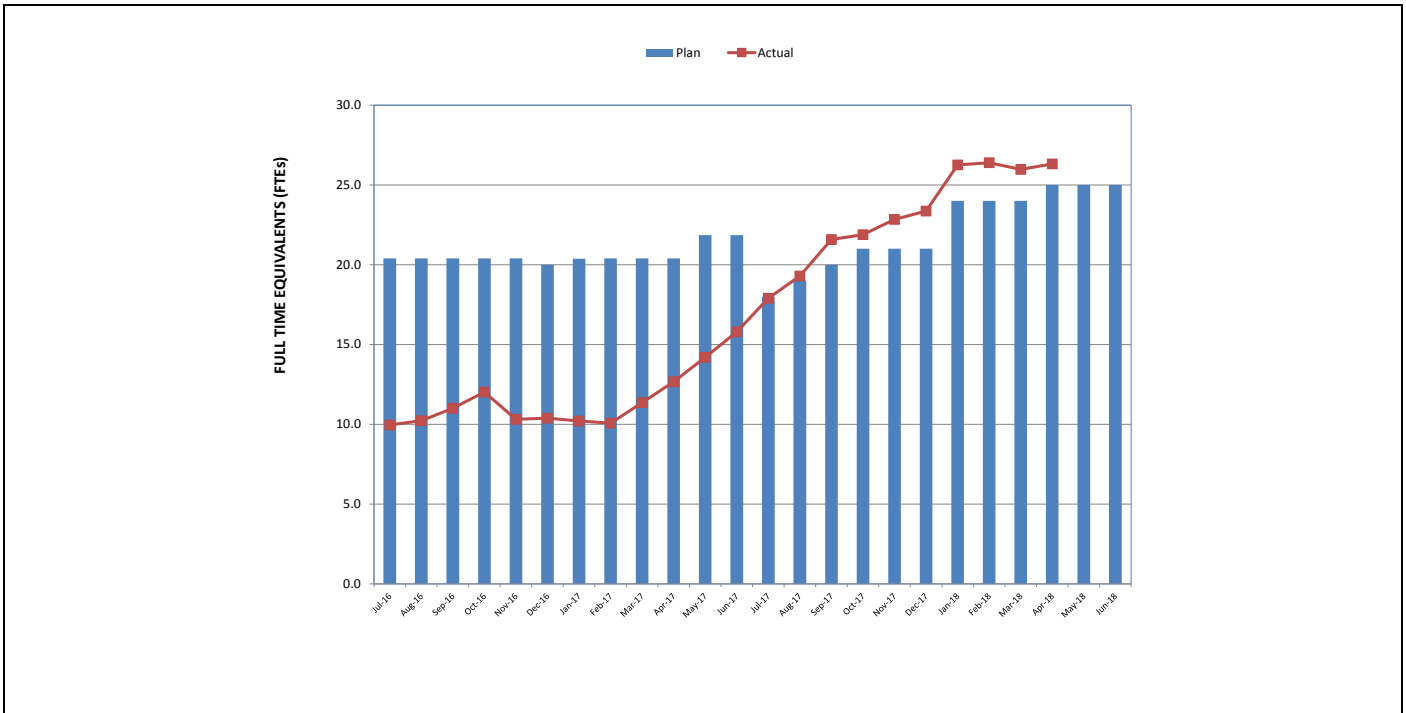


TOTAL PROJECT STAFFING

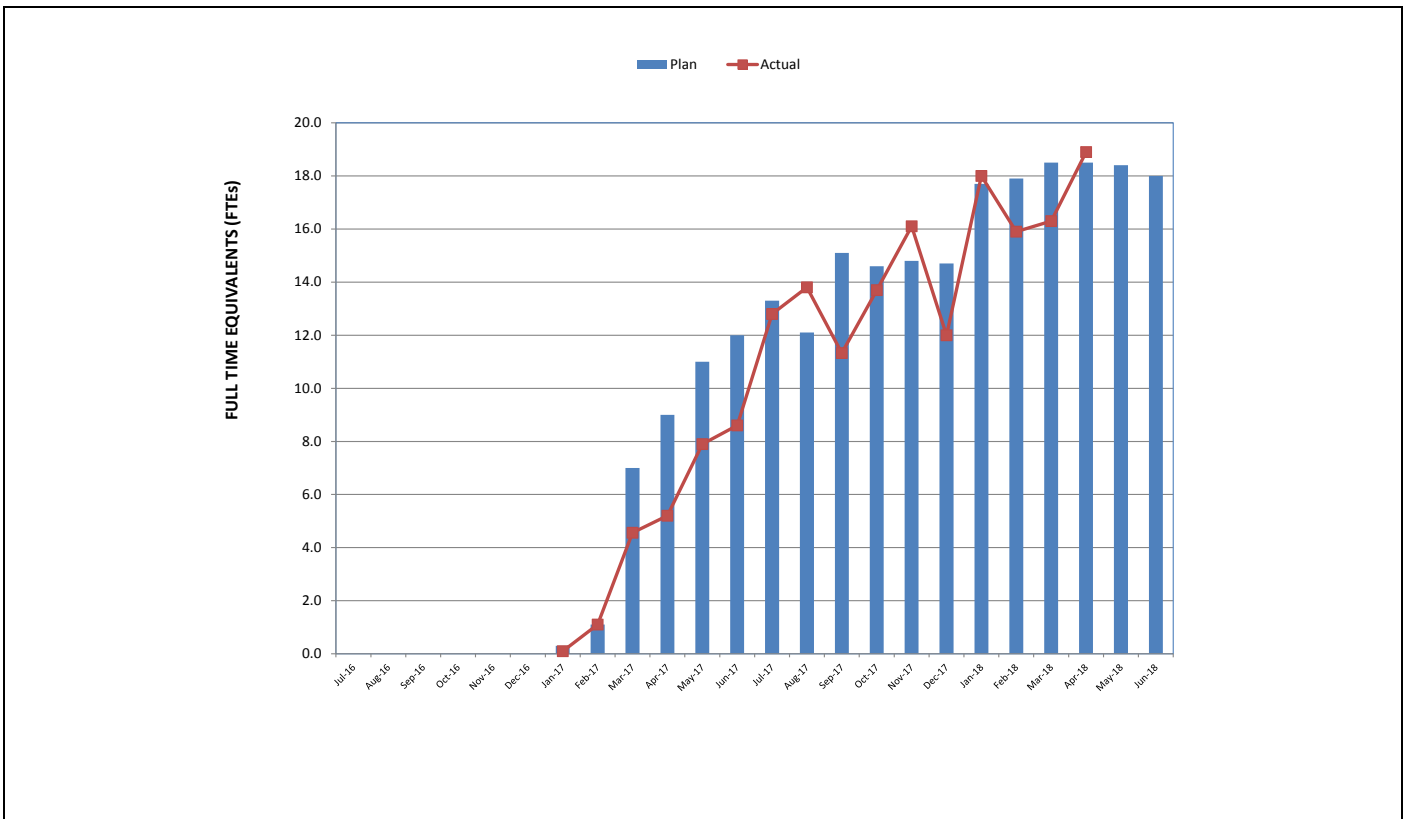
The overall FY18 Total Project Staffing Plan averages 57.3 FTEs per month.

For April 2018, there were a total of 26.3 FTEs for MTA's Project Administration Staff and 36.9 FTEs for Consulting Staff. The total project staffing for April 2018 was 63.2 FTEs.

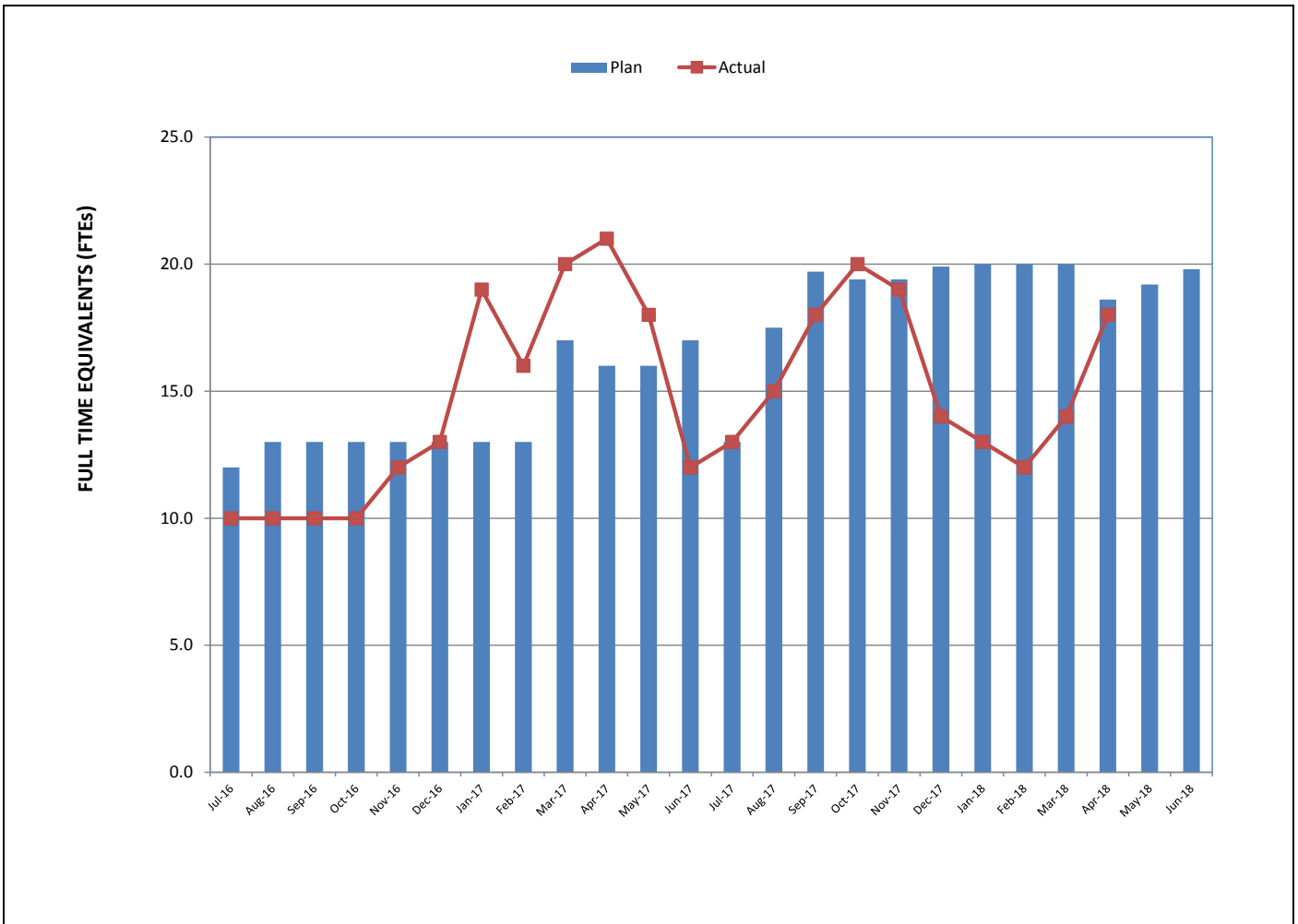
**STAFFING STATUS (Continued)
METRO STAFFING – FTEs**



**CONSTRUCTION MANAGEMENT SUPPORT
SERVICES CONSULTANT – FTEs**



STAFFING STATUS (Continued)
ENGINEERING MANAGEMENT SERVICES CONSULTANT – FTEs



REAL ESTATE STATUS

Real Estate Status Summary									
Description	Number of Parcels	Certified	Appraisals Completed	Offers Made	Agreements Signed	Condemnation Filed	Relocations		Parcels Available
							Required	Completed	
Full Takes	3	3	3	3	1	2	21	21	3
Part Takes	3	1	1	1	1	0	0	0	1
TCE	3	3	1	1	1	1	1	1	2
SSE	23	23	11	11	1	1	3	3	1
Permanent Easements	1	0	0	0	0	0	0	0	0
Total Parcels	33	30	16	16	4	4	25	25	7

QUALITY ASSURANCE STATUS

- Attended weekly project staff and progress meetings with TPOG.
- *Reviewed Metro and TPOG Daily Inspection Reports for scheduled activities at various locations for completeness and correctness.*
- *Attended the project staff partnering meeting.*
- *Issued surveillance report for April 2018's surveillance for STV's design review activities and TPOG's design subcontractors with two findings followed by two Quality Action Requests. Held clarification meetings for findings resolutions.*
- *Attended the Readiness Review construction meetings for: oil line removal at Century City Constellation Station (TPOG, Silverado, Fisk Electric); structure demolition at 1940 and 1950 Century Park East (TPOG, Silverado); geotechnical boring for fault line identification (TPOG, Fugro, Tri-County Drilling).*
- Reviewed and provided comments on the following with a disposition of Approved as Noted:
 - *Former Ace Gallery, 9430 Wilshire Blvd., Demolition Plan (Silverado)*
- Reviewed and provided comments on the following with a disposition of Approved:
 - *Equipment List for 1940 and 1950 Century Park East Demolition, Green Construction Policy (Silverado)*
 - *Station Noise Monitoring Plan (STV)*
 - *Deputy Design Quality Manager Ric Alonzo (TPOG)*
 - *Construction Work Plan for Geotechnical Fault Line Investigation (TPOG, Fugro, Tri-County Drilling)*
- Reviewed and provided comments on the following with a disposition of For Record Only:
 - *Portland Cement Concrete Product Data (Catalina Pacific)*
 - *Construction Fencing - Oil Lines Removal (CCS LB, TPOG)*

ENVIRONMENTAL STATUS

- Participated in various project pre-construction, construction, and advanced utility relocation meetings and reported on environmental compliance with local, state and federal regulations, specifications and EIR.
- Conducted field environmental monitoring and spot check inspections for construction noise, stormwater and dust BMPs, cultural resources and Metro's Green Construction Policy.
- Participated in various advanced utility relocation and TPOG coordination meetings and evaluated progress and schedules for environmental compliance and sustainability efforts.
- Provided responses to various TPOG submittals and requests for information related to environmental matters.
- Performed noise monitoring activities for advanced utility relocation and TPOG contractor work and submitted field reports.
- *Attended and provided guidance at various TPOG and advanced utility relocation pre-construction and construction meetings.*
- *Provided environmental awareness training to Metro, advanced utility relocations construction staff, and TPOG construction staff as required.*
- *Finalized March 2018 noise monitoring reports for both the City of Los Angeles and the City of Beverly Hills.*
- *Finalized the 12th Quarterly Mitigation Measures Status Report and submitted to FTA.*
- *Received FTA's 11th Quarterly Mitigation Measures Status Report Review which determined that report addressed all requirements of OP 20 and concluded with a rating of Substantially Compliant.*
- *Received abatement permit from City of Beverly Hills and commenced abatement activities at the North Canon Properties. This is the future location of Wilshire/Rodeo Station's laydown yard.*
- *Performed biological surveys for nesting birds at various locations prior to construction activities.*
- *Held several construction-targeted MMRP training presentations for Metro, TPOG and FTA staff.*

CONSTRUCTION RELATIONS STATUS

- Attended the following meetings: Construction Management, Advanced Utility Relocations, Construction Relations, Third Party Coordination, Beverly Hills Memorandum of Agreement, Beverly Hills Chamber, and Century City Chamber meetings, Century City Building and Property Manger meeting.
- Updated Facebook/Twitter and website as needed.
- Conducted project presentations at the Beverly Hills Monthly Community Meeting, Rodeo Station Stakeholders meeting, and met with other Beverly Hills businesses one-on-one. Conducted follow up meetings with Century City stakeholders regarding street closure.
- Continued Eat Shop Play efforts in Century City.
- Produced and distributed seven pre-construction work notices for advanced utility relocations and abatement.
- Conducted extensive outreach with the community through three Earth Day events.

CREATIVE SERVICES STATUS

- Conducted community outreach and coordinated cultural partnerships.

SAFETY & SECURITY STATUS

- Third Party advanced utility relocation work continues. No injuries were reported during this period.
- Monitored Third Party advance utility construction work activities to ensure contractor compliance with regulations and good business practices.
- Attended weekly Project Issues Standing Meetings.
- Attended weekly D/B Progress Meeting.
- Attended daily TPOG crew toolbox meetings for ongoing field work activities.
- Conducted LADWP Water & Power, Southern California Edison (SCE) and Southern California Gas (SCG) Injury and Illness Prevention Program (IIPP) reviews and site safety walks.
- Attended LADWP Water & Power, SCE, AT&T and SCG weekly progress meetings.
- Conducted meetings with TPOG safety personnel to ensure pre-submittal compliance for adequate contractual construction safety staffing.
- Conducted safety reviews for quarterly and monthly project reports.
- Conducted project safety orientation for new project staff.
- Coordinated and attended TPOG project safety orientation for project staff.
- Conducted over-the-shoulder reviews on safety/security submittal drafts with TPOG safety staff.
- Conducted right-of-way (ROW) and worksite safety/security walks.
- Conducted formal TPOG Project Safety Submittals reviews.
- *Attended TPOG coordination meeting with Los Angeles and Beverly Hills Fire Departments to review Tunnel Rescue Team options.*
- *Conducted Safety/Security Workshop and Coordination meetings with TPOG safety staff and defined over-the-shoulder review schedules.*
- *Conducted safety walks, safety reviews and coordination with TPOG safety staff for:*
 - *Sound wall work activities*
 - *Geological investigation work activities*
 - *Traffic control support work activities*
- *TPOG Design (16,814 hours) and Construction (9,320 hours) completed 26,134 work-hours for the month of May 2018 with zero recordable incidents. Total Project to Date work-hours are 248,652 with zero recordable incidents.*

THIRD PARTY AGREEMENT STATUS

No.	Third Party	Type of Agreement	Forecast Execution Date	Required Need Date	Status/ Comments
1	City of Los Angeles (LA)	Master Cooperative Agreement	N/A	N/A	Parties will work under 2003 MCA.
2	City of Beverly Hills (COBH)	Memorandum of Agreement	03/17(A) 06/17(A) 11/17(A) 07/18	03/17(A) 06/17(A) 11/17(A) 07/18	Reimbursement Agreement was executed in March 2017. Beverly Hills City Council approved the construction permit for SCE work in June 2017. Beverly Hills City Council approved MOA for remaining third party utility relocations on November 22, 2017. Metro continues to work with the City to establish an MOA for the C1120 Design/Build contract. Required Need Date reflects turnover date to C1120 contractor for station footprint availability.
3	Los Angeles Department of Water and Power (LADWP)- Water & Power	Master Cooperative Agreement	N/A	N/A	Metro and LADWP will continue to work under the terms of the previous Master Cooperative Agreement.
4	Los Angeles County Public Works Flood Control	Letter of Agreement	N/A	N/A	Executed.
5	Private Utilities	Utility Cooperative Agreement	N/A 09/18 11/17(A)	N/A 09/18 11/17(A)	AT&T, Pac Bell, SBC, MCI, Verizon, Southern California Gas Company (SCGC), TCG Los Angeles – Metro is working under existing agreements. Time Warner, Level 3 and Century Link have combined. Metro is currently working on a master joint agreement with all parties. SCE – Metro and SCE have initiated a new agreement. A draft is under review. Veolia (now known as Enwave) – In circulation for signatures with Enwave. Sprint – A draft of the Agreement has been submitted to Sprint, pending comments. Zayo and XO Communications, LLC – Agreements in circulation with XO.

ADVANCED UTILITY RELOCATION STATUS

Century City Constellation

- *LADWP Power utility relocations are ongoing, and civil work is 80% complete.*
- AT&T duct bank and vault construction began in November 2017. Construction is anticipated to complete in Summer 2018 followed by cable pulling and splicing.

Wilshire/Rodeo

- AT&T and SCG work began on February 12, 2018 and is ongoing. Completion for both utilities including cable pulling and splicing is anticipated in Summer 2018.

PEAK HOUR AND NIGHTTIME CONSTRUCTION VARIANCES

Metro is actively pursuing extended hour variances/exemptions to accommodate the Project's needs. Metro staff is working with the City of Los Angeles Bureau of Engineering (BOE) and the Los Angeles Police Commission to obtain Peak Hour Exemptions and Nighttime Construction Variances.

- A nighttime noise variance permit for relocation of third party utilities on Constellation Boulevard is approved through August 2018.
- Peak Hour Exemption application for the TBM launch box excavation on Constellation Boulevard was approved by BOE on January 30, 2018.

CHRONOLOGY OF EVENTS

August 2012	FTA Record of Decision
January 2013	FTA approval to enter to Preliminary Engineering
December 2014	FTA approval to enter to New Starts Engineering Phase
March 2015	Began Real Estate Acquisition
May 2015	Began Advanced Preliminary Engineering
September 2015	Issued RFQ for C1120 Design/Build contract
October 2015	Received RFQ responses for C1120 Design/Build contract
May 2016	Submitted draft FFGA application
May 2016	Submitted TIFIA loan application
June 2016	Submitted application to FTA requesting an FFGA
June 2016	Received RFP Proposals for Contract C1120
September 2016	Began telecom joint trench construction in Century City
December 2016	FTA executed FFGA
December 2016	Received TIFIA Loan
January 2017	NTP for Construction Management Support Services Contract
January 2017	Metro Board approved staff recommendation to award the Design/Build Contract C1120 to Tutor Perini/O&G, a Joint Venture (TPOG) and approved Life-of-Project Budget
January 2017	Issued C1120 Contract Award TPOG
April 2017	Issued C1120 Contract NTP to TPOG
May 2017	Mobilized C1120 Contract Design and Construction Team
August 2017	Third party relocations started at Century City Constellation Station
September 2017	Third party relocations started at the Wilshire/Rodeo Station
November 2017	Beverly Hills City Council approved Memorandum of Agreement (MOA)

	governing remaining third party utility relocations
December 2017	Final Supplemental Environmental Impact Statement (FSEIS) was available to the public in the Federal Registry on December 1, 2017
January 2018	Completed all utility relocations within the Tunnel Boring Machine “Launch Box”
February 2018	Held Groundbreaking Ceremony on February 23, 2018
May 2018	<i>Bureau of Engineering approved a nine-month closure of Constellation Blvd. between Century Park East and Avenue of the Stars</i>

CONTRACT C1120 STATUS

<p>Description: Purple Line Extension Design-Build Contractor: Tutor Perini/O&G a Joint Venture (TPOG)</p>	<p>Contract No. C1120 Status as of: June 1, 2018</p>																																									
<p>Progress / Work Completed:</p> <ul style="list-style-type: none"> - 100% Design Launch Box Support of Excavation (SOE) - 60% Design Package 3 (Volume 1) - Tunnel Reaches - Storm Water Pollution Prevention Plan - Metro/TPOG Partnering Session for key staff <p>Areas of Concern:</p> <ul style="list-style-type: none"> - Timely completion of negotiations with the City of Beverly Hills (COBH) for Memorandum of Agreement (MOA) governing work performed by TPOG - Delay releasing Wilshire/Rodeo Station footprint to TPOG 	<p>Major Activities (In Progress):</p> <ul style="list-style-type: none"> - 85% Design Package 3 (Volume 1) - Tunnel Reaches - 85% Design Package 3 (Volume 2) - Rodeo Station - 85% Design Package 3 (Volume 3) - Track & Systems - Oil line abatement and removal at Launch Box in Century City - Final negotiations with COBH for the C1120 Contract - Installation of noise barrier walls at launch box staging area in Century City - Pothole/locate utilities by DB Contractor in Century City <p>Major Activities Next Period:</p> <ul style="list-style-type: none"> - Submit 100% Design Package 1 - Utility/Civil Design at Launch Box in Century City - Submit 100% Drawings (Resubmittal) - SOE Wilshire/Rodeo Station - Submit 100% Design Package 2 - Remaining Utility Conflicts (Outside of Launch Box) - TBM Factory Acceptance Test - Demolition of buildings at staging areas in Beverly Hills 																																									
<p>Schedule Summary:</p> <p>Date of Award: 01/30/17</p> <p>Notice to Proceed: 04/26/17</p> <p>Original Contract Duration: 3,100 CD</p> <p>Current Contract Duration: 3,100 CD</p> <p>Elapsed Time from NTP: 402 CD</p>	<table border="1"> <thead> <tr> <th></th> <th>Original Contract Dates</th> <th>Time Extension</th> <th>Current Contract</th> <th>Forecast</th> <th>Variance CDs</th> </tr> </thead> <tbody> <tr> <td>Notice to Proceed</td> <td>04/26/17</td> <td>0</td> <td>04/26/17</td> <td>04/26/17</td> <td>0</td> </tr> <tr> <td>MS 1 (NTP + 2950): Substantial Completion</td> <td>05/23/25</td> <td>0</td> <td>05/23/25</td> <td>05/23/25</td> <td>0</td> </tr> <tr> <td>MS 2 (NTP + 2600): Stations Available to UFS for Install of Equip</td> <td>06/07/24</td> <td>0</td> <td>06/07/24</td> <td>06/07/24</td> <td>0</td> </tr> <tr> <td>MS 3 (NTP + 2700): Ready for Systems Integration Testing</td> <td>09/15/24</td> <td>0</td> <td>09/15/24</td> <td>09/15/24</td> <td>0</td> </tr> <tr> <td>MS 4 (NTP + 3100): Demobilization</td> <td>10/20/25</td> <td>0</td> <td>10/20/25</td> <td>10/20/25</td> <td>0</td> </tr> </tbody> </table>							Original Contract Dates	Time Extension	Current Contract	Forecast	Variance CDs	Notice to Proceed	04/26/17	0	04/26/17	04/26/17	0	MS 1 (NTP + 2950): Substantial Completion	05/23/25	0	05/23/25	05/23/25	0	MS 2 (NTP + 2600): Stations Available to UFS for Install of Equip	06/07/24	0	06/07/24	06/07/24	0	MS 3 (NTP + 2700): Ready for Systems Integration Testing	09/15/24	0	09/15/24	09/15/24	0	MS 4 (NTP + 3100): Demobilization	10/20/25	0	10/20/25	10/20/25	0
	Original Contract Dates	Time Extension	Current Contract	Forecast	Variance CDs																																					
Notice to Proceed	04/26/17	0	04/26/17	04/26/17	0																																					
MS 1 (NTP + 2950): Substantial Completion	05/23/25	0	05/23/25	05/23/25	0																																					
MS 2 (NTP + 2600): Stations Available to UFS for Install of Equip	06/07/24	0	06/07/24	06/07/24	0																																					
MS 3 (NTP + 2700): Ready for Systems Integration Testing	09/15/24	0	09/15/24	09/15/24	0																																					
MS 4 (NTP + 3100): Demobilization	10/20/25	0	10/20/25	10/20/25	0																																					
<p>Physical Percent Complete:</p> <p>Physical completion: 7.14%</p> <p><i>Note 1: Physical completion assessment reflects work completed and work in progress.</i></p> <p><i>2: Physical completion includes Final Design.</i></p>	<p>Cost Summary: \$ In millions</p> <table> <tr> <td>1. Award Value:</td> <td>1,376.5</td> </tr> <tr> <td>2. Executed Modifications:</td> <td>(16.6)</td> </tr> <tr> <td>3. Approved Change Orders:</td> <td>1.2</td> </tr> <tr> <td>4. Current Contract Value (1+2+3):</td> <td>1,361.1</td> </tr> <tr> <td>5. Incurred Cost:</td> <td>293.7</td> </tr> </table>						1. Award Value:	1,376.5	2. Executed Modifications:	(16.6)	3. Approved Change Orders:	1.2	4. Current Contract Value (1+2+3):	1,361.1	5. Incurred Cost:	293.7																										
1. Award Value:	1,376.5																																									
2. Executed Modifications:	(16.6)																																									
3. Approved Change Orders:	1.2																																									
4. Current Contract Value (1+2+3):	1,361.1																																									
5. Incurred Cost:	293.7																																									

CONSTRUCTION PHOTOGRAPHS



LADWP Power Utility Work in Century City



SCG Utility Work in Beverly Hills

**APPENDIX
COST AND BUDGET TERMINOLOGY**

Project Cost Descriptions

ORIGINAL BUDGET	The Original Project Budget as authorized by the Metropolitan Transportation Authority (Metro) Board.
CURRENT BUDGET	The Original Budget plus all budget amendments approved by formal Metro Board action. Also referred to as Approved Budget.
COMMITMENTS	The total of actual contracts awarded, executed change orders or amendments, and approved work orders of Master Cooperative Agreements, offers accepted for purchase of real estate, 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 services, third party services, 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, Southwestern Yard, Sitework/Special Conditions and Systems.
RIGHT-OF-WAY	Includes purchase cost of parcels, easements, right-of-entry permits, escrow fees, contracted real estate appraisals and tenant relocation.
VEHICLES	Includes the purchase of Heavy Rail 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 a project to provide for anticipated but unknown additional costs that may arise during the course of the Project.
PROJECT REVENUE	Includes all revenue received by Metro as a direct result of project activities. This includes cost sharing construction items, insurance premium rebates, and the like.

APPENDIX

LIST OF ACRONYMS AND ABBREVIATIONS

ATC	Automatic Train Control
ATSAC	Automated Traffic Surveillance and Control
BAFO	Best and Final Offer
BIM	Building Information Modeling
BNSF	Burlington Northern Santa Fe Railway Company
BRT	Bus Rapid Transit
CADD	Computer Aided Drafting and Design
CALTRANS	California Department of Transportation
CCTV	Closed Circuit Television
CD	Calendar Day
CEQA	California Environmental Quality Act
CM	Construction Manager
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMSSC	Construction Management Support Services Consultant
CN	Change Notice
CO	Change Order
COBH	City of Beverly Hills
COLA	City of Los Angeles
CPM	Critical Path Method
CPUC	California Public Utilities Commission
CR	Camera Ready
CRMMP	Cultural Resource Monitoring and Mitigation Plan
CSPP	Construction Safety Phasing Plan
CTC	California Transportation Commission
CUD	Contract Unit Description
D/B	Design/Build
DBB	Design Bid Build
DOT	Department of Transportation
DWP	Department of Water and Power
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMS	Engineering Management Services
EPBM	Earth Pressure Balance Machine
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FD	Final Design
FEIS	Final Environmental Impact Statement
FEIR	Final Environmental Impact Report
FIS	Financial Information System
FLSR	Fire Life Safety Report
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FSEIR	Final Supplemental Environmental Impact Report
FSEIS	Final Supplemental Environmental Impact Statement

APPENDIX

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

FTA	Federal Transit Administration
FTE	Full Time Equivalent
GBR	Geotechnical Baseline Report
GDSR	Geotechnical Design Summary Report
HRT	Heavy Rail Transit
HRV	Heavy Rail Vehicle
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
LAUSD	Los Angeles Unified School District
LAWA	Los Angeles World Airports
LAX	Los Angeles International Airport
LNTP	Limited Notice To Proceed
LONP	Letter Of No Prejudice
LOP	Life-of-Project
LPA	Locally Preferred Alternative
LRTP	Long Range Transportation Plan
MCA	Master Cooperative Agreement
MIS	Major Investment Study
MMRP	Mitigation Monitoring and Reporting Plan
MOU	Memorandum of Understanding
MPSR	Monthly Project Status Report
N/A	Not Applicable
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
OSHA	Occupational Health and Safety Administration
PA/VMS	Public Address/Visual Messaging Sign
PE	Preliminary Engineering
PEER	Permit Engineering Evaluation Report
PIP	Project Implementation Plan
PLA	Project Labor Agreement

APPENDIX

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

PM	Project Manager
PMIP	Project Management Implementation Plan
PMOC	Project Management Oversight Consultant
PMP	Project Management Plan
P&P	Policies & Procedures
PR	Project Report
PRMMP	Paleontological Resource Monitoring Mitigation Plan
PSR	Project Study Report
QA	Quality Assurance
QAR	Quality Assurance Report
QC	Quality Control
QPSR	Quarterly Project Status Report
QTIB	Qualified Transit Improvement Bonds
RAMP	Real Estate Acquisition Management Plan
RCHAR	Rail Crossing Hazards Analysis Report
RCMP	Risk Assessment Management Plan
RFC	Request For Change
RFP	Request For Proposals
RFSC	Request for Special Consideration
RHA	Risk Hazard Analysis
ROC	Rail Operations Center
ROD	Record Of Decision
ROM	Rough Order of Magnitude
ROW	Right-Of-Way
RPZ	Runway Protection Zone
RSD	Revenue Service Date
SAV	Stand Alone Validator
SCAQMD	Southern California Air Quality Management District
SCADA	Supervisory Control and Data Acquisition
SCC	Standard Cost Category
SCE	Southern California Edison
SCG	Southern California Gas Company
SCRRA	Southern California Regional Rail Authority
SHA	State Highway Account
SHPO	State Historic Preservation Office
SIT	System Integration Testing
SOQ	Statement of Qualification
SOV	Schedule Of Value
SOW	Statement Of Work
SP	Special Provision
SSMP	Safety and Security Management Plan
STB	Surface Transportation Board
STIP	State Transportation Improvement Program
STP	Surface Transportation Program

APPENDIX

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

STV	STV Group
SWPPP	Storm Water Pollution Prevention Plan
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCE	Temporary Construction Easement
TCRP	Traffic Congestion Relief Program
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TPOG	Tutor Perini/O&G a Joint Venture
TPSS	Traction Power Substation
TRACS	Transit Automatic Control System
TVA	Threat Vulnerability Analysis
TVM	Ticket Vending Machine
UFS	Universal Fare System
USDOT	United States Department Of Transportation
VE	Value Engineering
WBS	Work Breakdown Structure
WP	Work Package
YOE	Year of Expenditure