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April 21, 2023

**TO:** DISTRIBUTION

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**SUBJECT:** WESTSIDE PURPLE LINE EXTENSION SECTION 2  
PROJECT MARCH 2023 QUARTERLY PROJECT STATUS  
REPORT

Enclosed herewith is the Quarterly Project Status Report for the Westside Purple Line Extension Section 2 Project. This report contains the Los Angeles County Metropolitan Transportation Authority's (LACMTA) representation of the Westside Purple Line Extension Section 2 Project status for the period ending March 31, 2023.

If you have any questions regarding this report or its supporting information, please contact Mike Martin, Deputy Executive Officer, Program Control at (424) 551-4471.

MM: PB  
Enclosure

**PURPLE (D LINE) EXTENSION PROJECT** Section 2



**Metro**

# **Purple (D Line) Extension Project**

## **Section 2**

### **QUARTERLY PROJECT STATUS REPORT**

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

**March 2023**

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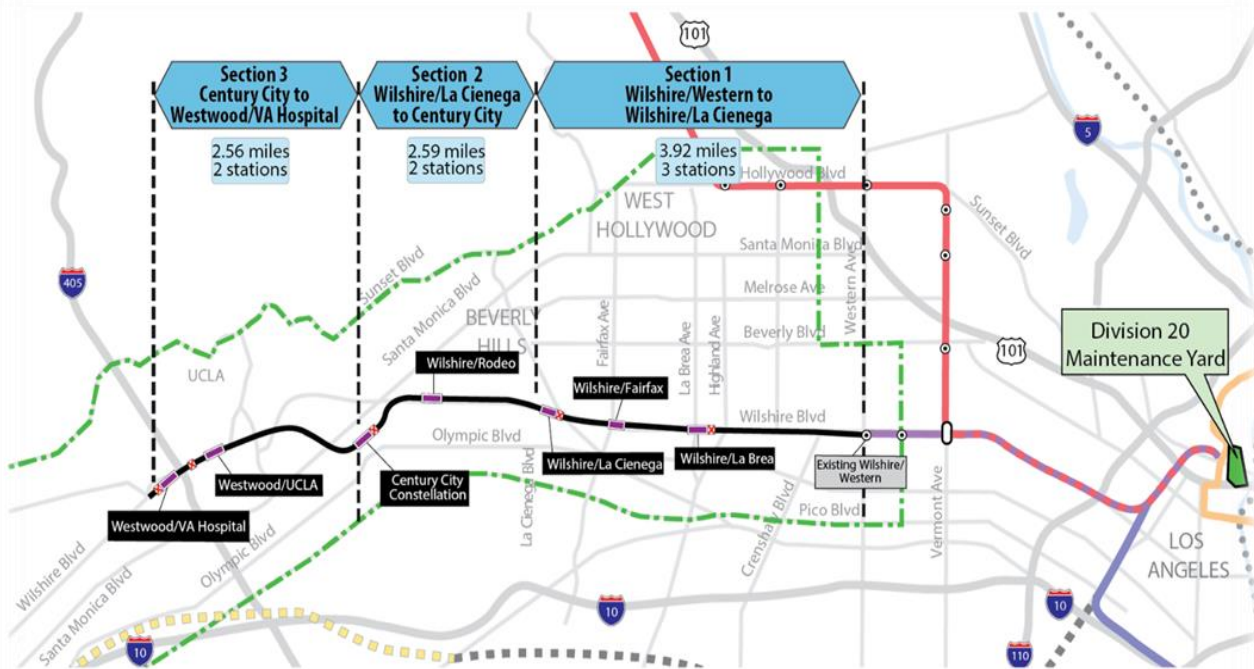
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## PROJECT OVERVIEW

### Project Background

The Purple (D Line) Extension Section 2 Project (Project) is the second of three sections to be designed and constructed as part of the Los Angeles County Metropolitan Transportation Authority's (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 Purple (D Line) Extension Section 1 Project currently under construction to Century City. 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, two new stations as well as the purchase of 20 heavy rail vehicles. The Wilshire/Rodeo Station is within the jurisdiction of City of Beverly Hills, and the Century City Constellation Station is within the jurisdiction of City of Los Angeles. 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 braking distance will be provided at the interim terminus station.

### **Major Procurements**

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 machine (TBM) launch 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.

### Metro Furnished Equipment

The option to purchase 20 Heavy Rail Vehicles (HRV) of the existing HR4000 contract will not be exercised. A new HRV procurement was issued in December 2022. The scope of the HRV contract includes design, manufacturing, testing and delivery of the vehicles. An additional contract will be procured for the Universal Fare System (UFS). This is currently being procured. The scope of the UFS contract will include design, fabrication and installation of equipment at the two new stations and system testing.

## Program Management

The Purple (D Line) Extension Section 2 Project is being managed under the direction of an Integrated Project Management Office (IPMO). WSP Global (WSP) provides engineering and design support services, while Purple (D Line) 2 CM Partners, a Joint Venture provides construction management support services. An overview of staffing is provided under the Staffing section of this report. The program management team is also supported by Metro headquarters' resources and includes engineering, risk management, environmental, quality management, operations and creative services departments.

Project Schedule and Budget: The Revenue Service Date (RSD) is planned for 2025.

On January 26, 2017, the Metro Board approved the Life of Project (LOP) Budget for the Purple (D Line) Extension Section 2 Project 865522 for \$2.4 billion excluding Finance Charges of \$88.7 million. A detailed Life of Project Budget forecast is included under the Project Cost Forecast section of this report.

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

- Federal – Section 5309 New Starts
- Federal – Section 5309 New Starts (ARPA-CIG)
- Federal CMAQ (Congestion Mitigation & Air Quality)
- Measure R – TIFIA Loan (Transportation Infrastructure Finance & Innovation Act)
- Measure R 35%
- State Capital Projects Loans

Construction and Community Relations: The Construction and Community Relations team is tasked with promoting the Project and performing public outreach within the community to keep stakeholders informed of construction activities occurring along the Project alignment.

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

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.

## EXECUTIVE SUMMARY

In March 2023, the Project reached 58% completion based on earned value measurements for design and construction. The focus of the Project continued to be completion of final design and construction activities in Century City and Beverly Hills. Final design base scope is anticipated to be completed in July 2023. The C1120 Design Build Contractor is anticipated to reach substantially completion by May 2025 and demobilize by October 2025. The forecast Revenue Service Date (RSD) for the Project remains planned for 2025. The following is an overview of current design and construction activities.

### Design Status

The Engineering Management Services team (WSP) continued to provide engineering services during construction 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 design work has originally been identified into three distinct design unit packages. They are the following:

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
  - (Volume 2) – Stations
  - (Volume 3) – Track & Systems

The design packages noted above have been broken out into discrete advanced design units/packages in order to facilitate and prioritize design deliverables.

Metro, Tutor Perini/O&G (TPOG) and STV have been working together to identify advanced partial design units for the abovementioned design packages 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). Critical design units have been 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 submitted this month are: AFC - APDU 3.4 WRS Air Shaft No. 7 SOE Design; AFC - Package 3 Volume 3B Systems - OPE Redesign DU 6.1; 100% - CCS SOE Appendage Grating 12N APDU 2.12.7; 100% - CCS SOE Appendage Grating 6 and 7 APDU 2.12.9; 100% - DWP Water Main Relocation at CCS (PSA-0135) APDU 2.5.1; 100% - Tunnel Lighting (CN-00188) DU 4.2; 100% - WRS Entrance Canopy Sprinklers (CN-00196) DU 3.2; 100% - WRS West UPE No. 8 SOE Design APDU 3.4.*



## Construction Status

### Century City Constellation Station:

*Excavation of the station box and station entrance continued this month and is 87% complete. Subgrade preparation for invert slab concrete work just west of the existing Launch Box slab continues this month. Station box bracing level 6 has 49% of struts installed. Station entrance is excavated down to last level of support of excavation (just below main station box bracing level 5).*

Excavation and shoring installation for the storm drain in the Avenue of the Stars median north of the station box continued this month *with minor interruptions due to rain*. TPOG obtained a renewal on the project's nighttime noise variance permit for nighttime work to extend the existing permit through November 2, 2023. Storm drain support of excavation bracing, lagging installation and trench excavation in the Avenue of the Stars median north of Constellation continued this month.

DOT is holding weekly meetings to coordinate the traffic control plans and signal plans for the possible removal of the Section 3 project's TBMs in mid-2023. The Section 3 contractor is refining its plans to remove both TBMs from Century City Constellation Station and has indicated they do not anticipate any schedule impacts to Century City Constellation Station resulting from their plans.

Coordination of access for the JMB construction site through the PLE2 work area continues.

Coordination of overlapping potholing and geotechnical work for PLE3 near the PLE2 interface area (Constellation and Solar Way, and Century Park West) continues this month. Coordination with Centrio Energy (formerly known as Enwave) for potholing of appendage locations was performed by the contractor.

### Tunnels:

On November 18, 2022, the BR TBM completed excavation of Reach 4. The BL TBM completed excavation on January 12, 2023. Both TBMs have completed overall excavation and rest at the concrete end wall at the Purple Line Extension Section 1 interface. TBM disassembly with removal of conveyor belt rollers and brackets continued this month. *Removal of muck and debris from the tunnel access shaft continued.*

TPOG continued work this month installing pairs of local deep dewatering wells at cross passages along the tunnel alignment as ground treatment prior to sequential excavation and construction of cross passages. All fourteen (14) dewatering wells in Reach 5 have been drilled. Ten (10) wells are currently operational. *TPOG setup temporary traffic control lane closures on Wilshire Boulevard, and continued drilling and installing local discharge plumbing connections for Reach 4 cross passage dewatering wells.*

Cross-passage (CP) construction activities continued this period in Reach 5. There are a total of 15 CPs (CP 41- CP 27) in both reaches. CP 41 is within the Tunnel Access Shaft. *Excavation and initial lining for CP 40 and CP 38 has been completed. Break-out prep work, excavation and initial lining for CP 39, CP 37, and CP 36 continued this month.*

Wilshire/Rodeo Station:

Placement of concrete for the invert slab and first level station walls are approximately 72% complete, including a portion requiring remedial repair. Concrete placement for center concourse level slab has been completed. Overall progress for the second level walls is 15%. Construction in the station box was limited to the concourse area until the tunnel excavations were completed. *Installation of the concourse roof deck rebar installation in the station box has commenced and is ongoing.* Removal of temporary ramps and TBM thrust frame steel at the east end of the WRS box continued this month.

Concrete placement for the exterior and interior station entrance walls at the concourse level was completed. Formwork and rebar installation and concrete placement for the concourse level roof slab of the station entrance was completed in January 2023.

*Infrastructure for permanent power construction for (SCE) started in September 2022 with saw cutting and road plates installation. TPOG also continued trench excavation work for permanent power "outside" the station box, including the installation of duct banks and two (2) Vaults east of WRS. Overall completion for SCE duct bank is approximately 59% on the eastern end of the station box, and approximately 20% on the western end.*

All twenty (20) dewatering wells continue to be operational around the WRS site.

**Cost and Schedule Summary**

For the C1120 Design/Build contract, Metro received the Contractor’s March 2023 schedule update, which reports the substantial completion date finishing 363 calendar days behind the May 23, 2025, contractual date. The Contractor reported a twenty-eight (28) day slippage to the overall Project this reporting period. The forecasted delay to the Century City Constellation Station excavation is concurrent with tunneling delays. Future revisions to the contractor’s means and methods, and revised schedule logic may have an impact on future updates. Due to the Contractor’s forecasted completion, the project team is identifying opportunities to mitigate project delays and is monitoring potential impacts.

The Critical Path (CP) continued to go through the Century City station Excavation and Invert Slab activities. It also includes completion of the tunnel walkway and invert concrete work, track installation, Century City Station finishes, and systems installation and testing work (including installation of interior finishes and electrical equipment at both stations). A summary graphic of the critical path is found on Page 15.

**C1120 Design-Build Contract Schedule Metrics**

	Original Contract Dates	Time Extension	Current Contract	Forecast	Variance CDs
Notice to Proceed	04/26/17A	0	04/26/17A		0
Substantial Completion	05/23/25	0	05/23/25	05/23/25	0

Project costs continue to track within budget and projected contingency limits. To date, the Current Budget and Current Forecast remain the same this period at \$2.5 billion. *As outlined in the Annual Project Evaluation presented to the Metro Board in March 2023, the Project will be requesting a Life of Project (LOP) Budget increase from the Metro Board in the coming months.*

There are currently twenty (20) claims that are being evaluated. *Two (2) claims are currently under review by Metro, fifteen (15) remain in TPOG’s ball-in-court, and three (3) are under Metro and TPOG mediation preparation.*

1. Mitigation Plan for Subsurface Settlement above BL Tunnel (Claim 19)
2. WRS Groundwater Inflows (Claim 21)
3. COVID Impacts (Claim 22)
4. Wilshire/Rodeo Structural Changes (Claim 23)
5. Cutterhead Damage (Claim 28)
6. Resubmittal of 100% Submittal DU 6.1 Pkg 3, Volume 3B (Claim 29)
7. CCS Appendage Grating 15 (Claim 31)
8. CCS Emergency Stair 1 (Claim 33)
9. CCS Appendage Grating 5 (Claim 34)
10. CCS Additional Elevator Machine Room (Claim 35)
11. WRS Appendage Grating 9 (Claim 39)
12. WRS East EVS Grating 4 Design (Claim 41)
13. WRS Emergency Exit 4 Design (Claim 42)
14. Stations OPE Design Revision (Claim 44)
15. Unilateral CO No. 48 NPDES Construction Project Dewatering Permit (Claim 45)
16. Appendage Grating 10 Design (Claim 46)

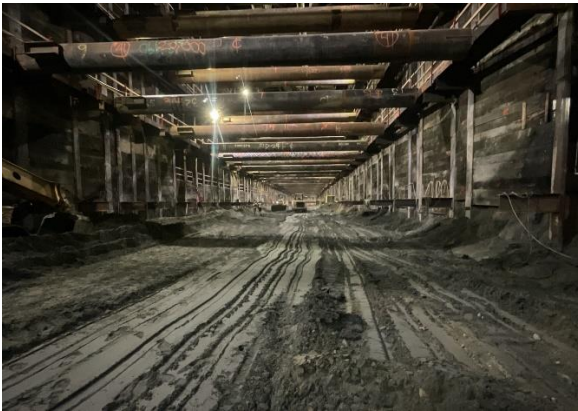
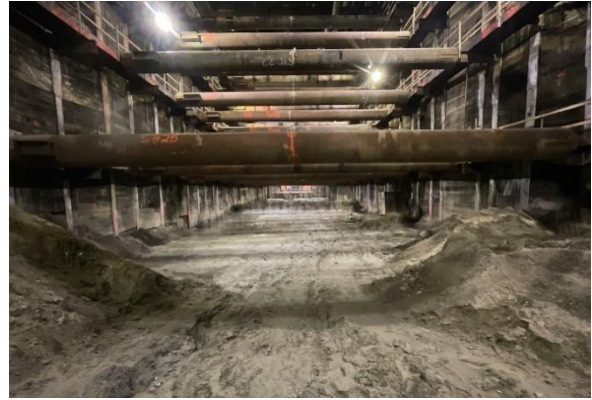
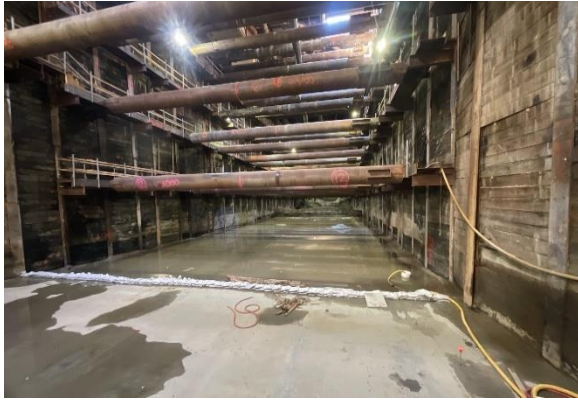
17. Station Revised OPE Construction (Claim 47)
18. CCS Elevators 1 & 2 Additional Sheet – Framing (Claim 50)
19. Tunnel Suspension Delays (Claim 51)
20. Escalation of Metals (Claim 53)

Detailed cost and budget information is provided on Page 18.

### **Key Management Concerns**

- *The Project Recordable Injury Rate for this period is 2.96, which is higher than the national average of 2.4. This number has increased from the previous months reported value. Metro remains concerned about TPOG's elevated Recordable Injury Rate and expects to see continued improvements to help lower the rate. Metro Safety staff have been preparing bi-weekly safety observations for reference and possible necessary action.*
- *Cross passage excavation and final lining construction is progressing much slower than what was assumed in TPOG's baseline schedule.*
- *TPOG has not identified a recovery schedule for delays to the Century City Constellation Station resulting from the storm drain relocation and winter storms from December 2022 through March 2023.*
- *TPOG has not submitted a revised plan indicating its means for TBM disassembly and mitigation of impacts to other construction activities in the tunnels.*

Project Construction Photos



Excavation Progress at Century City Constellation Station



Cross Passage Excavation



Dewatering Well Activities in Beverly Hills



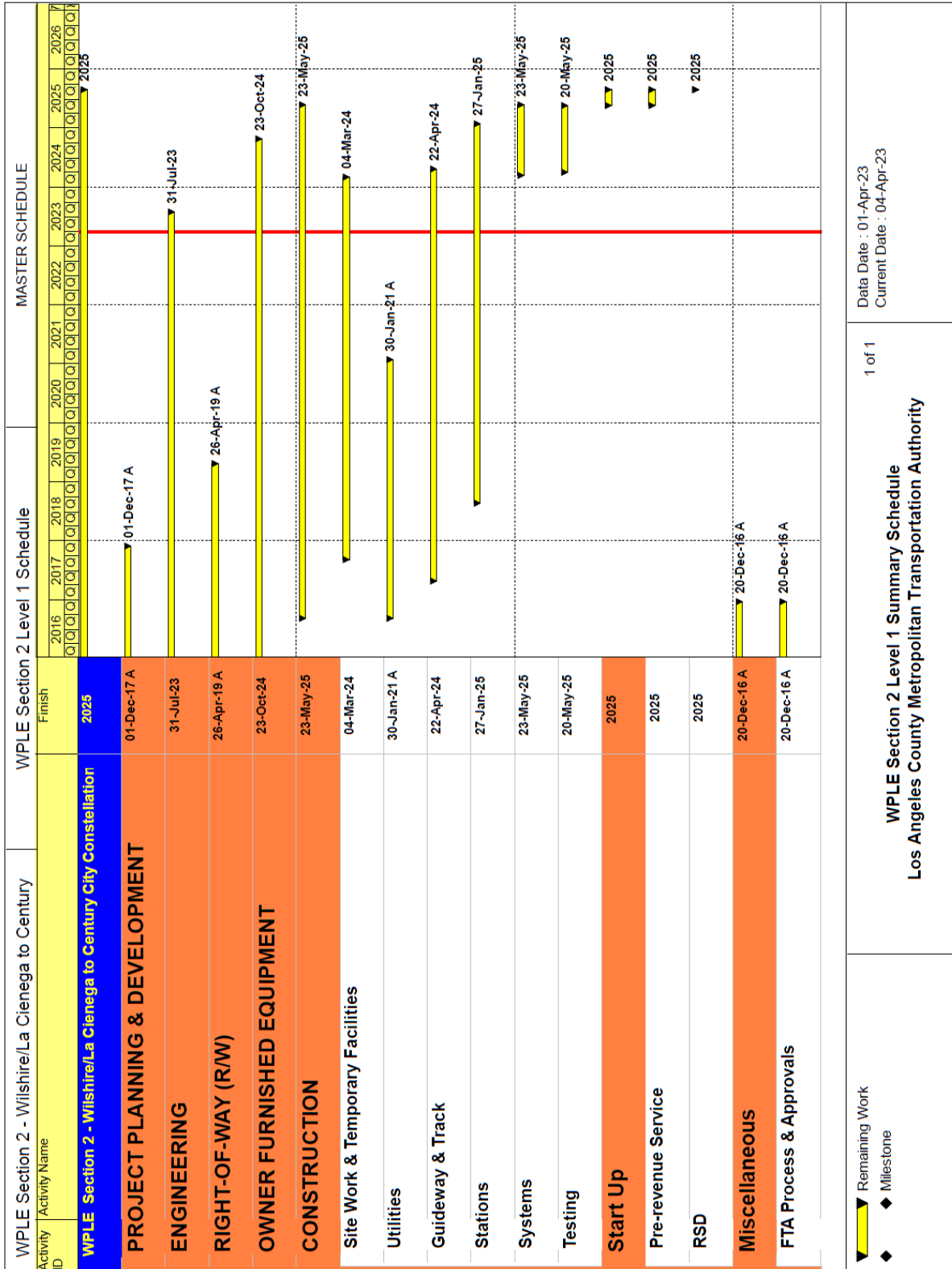
Concourse Level Roof Rebar Installation at the Wilshire/Rodeo Station Box



# PROJECT UPDATE

## PROJECT SCHEDULE

### Project Summary Schedule



Data Date : 01-Apr-23  
Current Date : 04-Apr-23

1 of 1

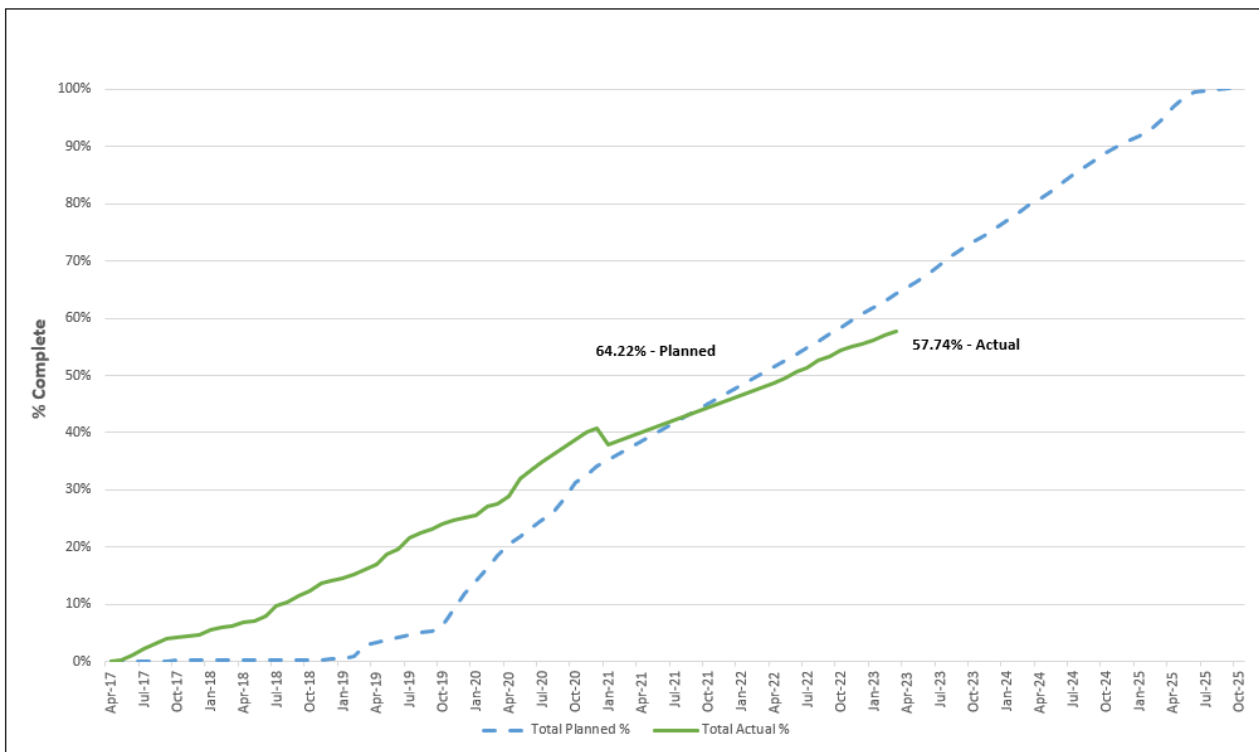
WPLE Section 2 Level 1 Summary Schedule  
Los Angeles County Metropolitan Transportation Authority

Remaining Work  
Milestone

**Progress Summary**

	Status	Change from Last Period	Comment
Forecast Revenue Service Date	2025		
TIFIA Revenue Service Date	12/31/2026	None	
FFGA Revenue Service Date	12/31/2026	None	
<b>Final Design Progress:</b>			
Contract C1120	99.88%	0.00%	Final Design for Base scope is anticipated to be complete by July 2023. No impact to Project schedule.
<b>Construction Contracts Progress:</b>			
Contract C1120	57.74%	0.06%	

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












**Planned vs. Actual Progress**

The actual overall construction progress is 57.74% versus a planned of 64.22% through March 2023. 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.

**Key Milestone Six-Month Look Ahead**

	Milestone Date	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23
Started installation of remaining Soldier Piles at Century City Constellation Station west (W7-W10)	3/31/23 A						
Complete installation of 5th level of struts & wales at Century City Constellation Station	04/21/23						
Complete 3" protective slab concourse roof concrete at Wilshire/Rode Station entrance	04/27/23						
Complete intermediate landing level exterior walls concrete pouring at Wilshire/Rodeo Station entrance	05/17/23						
Complete excavation to BOE at Century City Constellation Station	05/19/23						
Complete 3" protective slab sloped roof concrete at Wilshire/Rode Station entrance	06/12/23						
Complete excavation of working deck and ramps at Century City Constellation Station	06/29/23						
Complete concrete pouring at Wilshire/Rodeo Station concourse deck level	07/19/23						
Complete 3" protective slab at Century City Constellation Station invert and platform level	08/11/23						

 MTA Staff     
  MTA Board Action     
  FTA (Federal Transit)     
  Utility Company  
 Other Agencies     
  Contractors     
  Design Consultant     
  C1120 D/B  
 "A" following date is actual and completed     
 \* New



**Major Equipment Delivery**

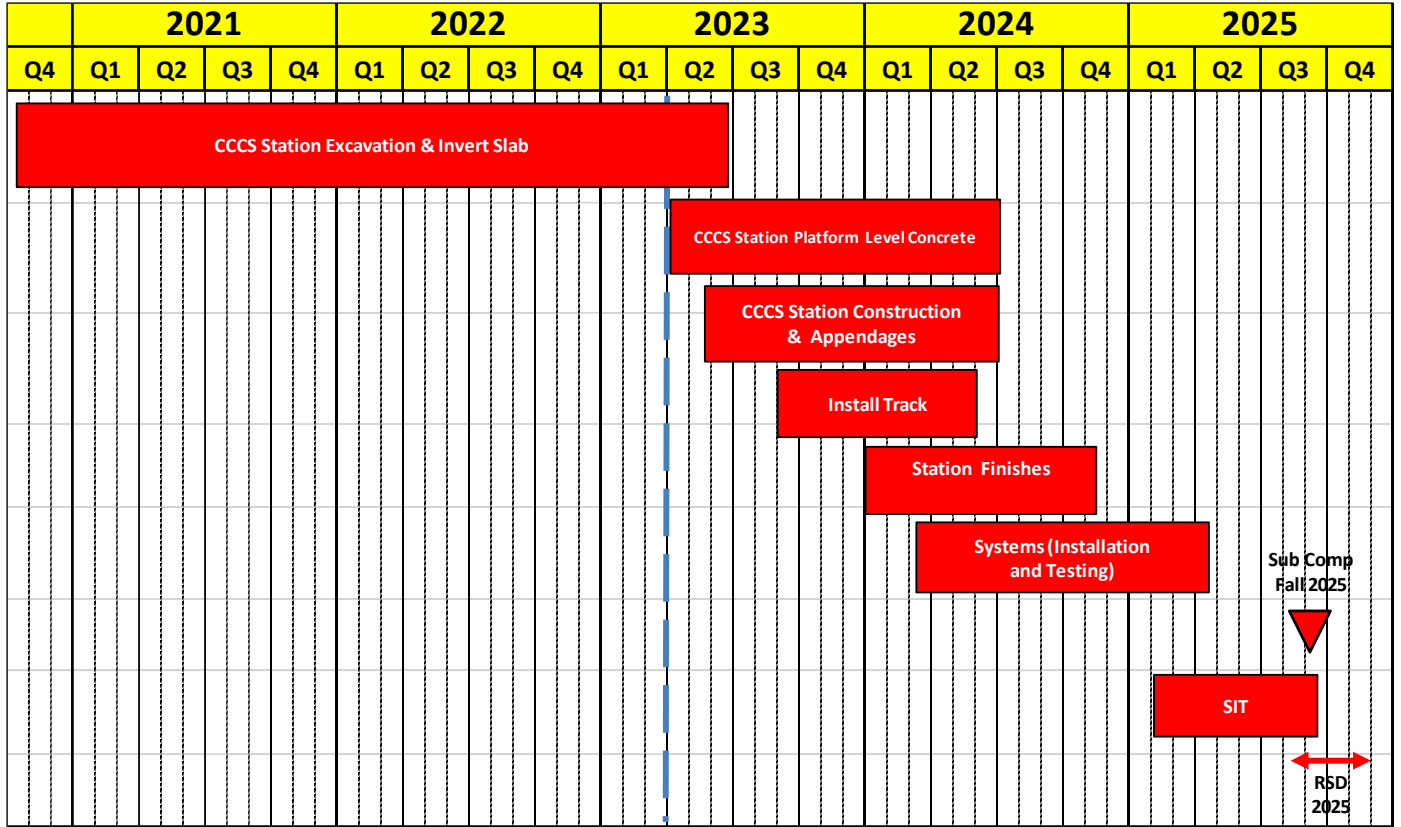
	Submittal	Procurement	Delivery	Installation
<b>C1120 DESIGN/BUILD*</b>				
Tunnel Boring Machines	27-Jul-17(A)	14-Aug-17(A)	13-Sep-18(A)	26-Dec-19(A)
Emergency Ventilation Fans	21-Apr-23	7-Apr-23	26-Sep-23	12-Feb-24
Station Elevators/Escalators	08-Feb-23 (A)	30-May-23	26-Mar-24	24-Jan-25
Track - Running Rail	22-Aug-22 (A)	3-Apr-23	27-Jul-23	22-Jul-24
Traction Power Equipment	9-May-23	10-Apr-23	15-Dec-23	26-Mar-25
Automatic Train Control	11-Mar-22 (A)	3-Apr-23	1-Nov-23	18-Dec-24
Radio System	1-Apr-23	3-Apr-23	1-Nov-23	15-Apr-24
SCADA RTU System	11-Mar-22 (A)	3-Oct-22 (A)	31-Oct-23	15-Apr-24
<b>Heavy Rail Vehicles</b>	HR5000 New HRV Procurement RFP was issued on December 6th, 2022.			
<b>Universal Fare System***</b>	TBD	TBD	TBD	May 2025**

\* Dates derived from TPOG's March 2023 Schedule.

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

\*\*\* Metro supplied equipment.

**Critical Path Project**



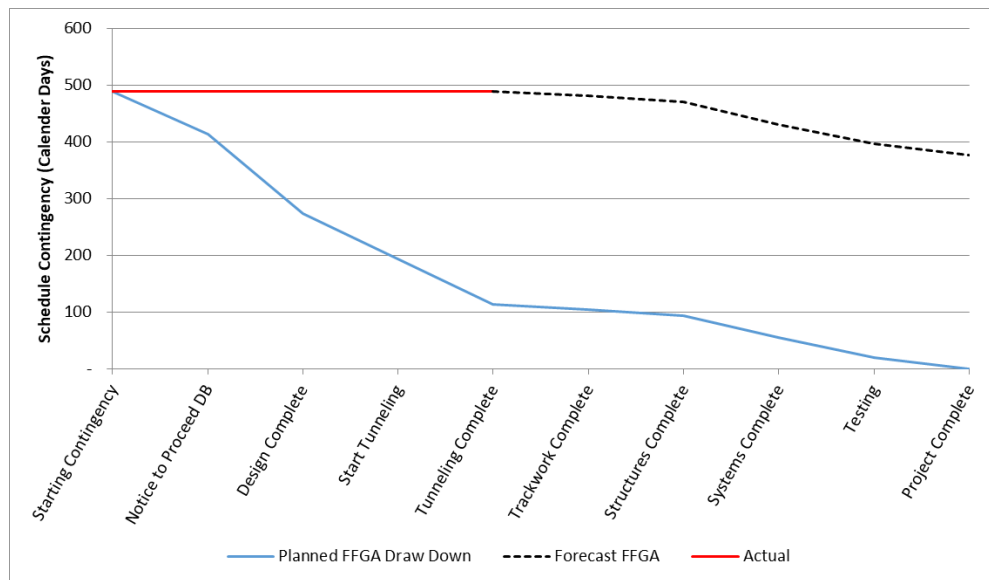
*For the month of March 2023, the critical path remains the same as shown last month.*

### Project Schedule Contingency Drawdown Analysis

The project schedule contingency drawdown model provides a dual-axis perspective based upon the FFGA RSD of December 2026 and Metro’s Project Master Schedule (PMS) forecast of 2025.

The introduction of the PMS model axis reflects a proportional distribution of available float relative to the FFGA model. Based on the January 2023 actual completion of tunneling. Schedule contingency appears to maintain a noticeable buffer from the FFGA model. This model will be updated when trackwork is complete. It is noted that the noticeable buffer still exists because there has not been any extension of contract time granted thus the current RSD maintains sixteen (16) months of float to the FFGA RSD.

Regarding the FFGA RSD, schedule float of sixteen (16) months has been maintained.



## PROJECT COST

### Project Cost Analysis – 865522

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	-	324,202	-	318,752	4,221	217,504	14,654	338,857	14,654
20	STATIONS, STOPS, TERMINALS, INTERMODAL	434,990	-	508,470	3,850	463,426	4,813	209,646	64,846	573,212	64,742
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	-	-	-	-	-	-	-	-	-	-
40	SITework & SPECIAL CONDITIONS	553,282	-	596,502	6,214	607,634	3,122	478,776	-	620,890	24,389
50	SYSTEMS	81,457	-	85,845	-	69,950	7	10,505	-	84,845	(1,000)
<b>CONSTRUCTION SUBTOTAL (10-50)</b>		<b>1,416,169</b>	<b>-</b>	<b>1,515,019</b>	<b>10,064</b>	<b>1,459,762</b>	<b>12,163</b>	<b>916,430</b>	<b>79,500</b>	<b>1,617,804</b>	<b>102,785</b>
60	ROW, LAND, EXISTING IMPROVEMENTS	426,396	-	430,075	-	318,091	(4)	298,203	-	403,922	(26,152)
70	VEHICLES	42,000	-	42,000	-	-	-	-	-	42,000	-
80	PROFESSIONAL SERVICES	374,878	-	429,308	317	383,600	4,221	334,194	-	443,083	13,774
<b>SUBTOTAL (10-80)</b>		<b>2,259,444</b>	<b>-</b>	<b>2,416,402</b>	<b>10,381</b>	<b>2,161,454</b>	<b>16,380</b>	<b>1,548,828</b>	<b>79,500</b>	<b>2,506,809</b>	<b>90,407</b>
90	UNALLOCATED CONTINGENCY	177,176	-	20,218	-	-	-	-	25,500	34,811	14,593
100	FINANCE CHARGES	88,695	-	88,695	-	-	-	-	-	88,695	-
<b>TOTAL PROJECT 865522 (FFGA &amp; NON-FFGA CONCURRENT ACTIVITIES)</b>		<b>2,525,314</b>	<b>-</b>	<b>2,525,314</b>	<b>10,381</b>	<b>2,161,454</b>	<b>16,380</b>	<b>1,548,828</b>	<b>105,000</b>	<b>2,630,314</b>	<b>105,000</b>
ENVIRONMENTAL/PLANNING 465522		4,349	-	4,349	-	3,957	-	3,377	-	4,349	-
<b>TOTAL PROJECT 465522 (ENV / PLAN'G)</b>		<b>4,349</b>	<b>-</b>	<b>4,349</b>	<b>-</b>	<b>3,957</b>	<b>-</b>	<b>3,377</b>	<b>-</b>	<b>4,349</b>	<b>-</b>
<b>TOTAL PROJECTS 465522 &amp; 865522</b>		<b>2,529,664</b>	<b>-</b>	<b>2,529,664</b>	<b>10,381</b>	<b>2,165,411</b>	<b>16,380</b>	<b>1,552,205</b>	<b>105,000</b>	<b>2,634,664</b>	<b>105,000</b>

### Original Budget

Original 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 Budget

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

### Current Forecast

*The Current Forecast increased this period by \$105.0 million due to cost exposures for construction activities. The Project will request a Life of Project (LOP) increase from the Metro Board in the coming months.*

### Commitments

*The Commitments increased this period by \$10.4 million due to executed Modifications and a Change Order for the Design/Build Contract C1120. The \$2.2 billion in Commitments to date represent 85.6% of the Current Budget.*

### Expenditures

*The Expenditures increased this period by \$16.4 million primarily for costs associated with Design/Build Contract C1120, Environmental Services, Real Estate Acquisition, Metro Project Administration, Engineering Management Support Services, Construction Management Support Services, Legal Services, Quality Management Support Services, City of Beverly Hills Memorandum of Agreement and City of Los Angeles Master Cooperative Agreement. The \$1.6 billion in Expenditures to date represent 61.4% of the Current Budget.*

**Project Cost Analysis – 860522 (Beverly Hills North Entrance)**

PERIOD ENDING: MARCH 2023  
 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	-	-	-	-	-	-	-	-	-	-
20	STATIONS, STOPS, TERMINALS, INTERMODAL	27,350	-	27,350	-	-	-	-	-	27,350	-
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	-	-	-	-	-	-	-	-	-	-
40	SITWORK & SPECIAL CONDITIONS	-	-	-	-	-	-	-	-	-	-
50	SYSTEMS	-	-	-	-	-	-	-	-	-	-
<b>CONSTRUCTION SUBTOTAL (10-50)</b>		<b>27,350</b>	<b>-</b>	<b>27,350</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>27,350</b>	<b>-</b>
60	ROW, LAND, EXISTING IMPROVEMENTS	-	-	-	-	-	-	-	-	-	-
70	VEHICLES	-	-	-	-	-	-	-	-	-	-
80	PROFESSIONAL SERVICES	1,900	-	1,900	-	371	2	24	-	1,900	-
<b>SUBTOTAL (10-80)</b>		<b>29,250</b>	<b>-</b>	<b>29,250</b>	<b>-</b>	<b>371</b>	<b>2</b>	<b>24</b>	<b>-</b>	<b>29,250</b>	<b>-</b>
90	UNALLOCATED CONTINGENCY	-	-	-	-	-	-	-	-	-	-
100	FINANCE CHARGES	-	-	-	-	-	-	-	-	-	-
<b>TOTAL PROJECT 860522</b>		<b>29,250</b>	<b>-</b>	<b>29,250</b>	<b>-</b>	<b>371</b>	<b>2</b>	<b>24</b>	<b>-</b>	<b>29,250</b>	<b>-</b>

**Original Budget**

Original Budget of \$29.3 million reflects the Life of Project (LOP) budget approved by the Board on May 26, 2022. This project satisfies the terms and conditions set forth in a Settlement Agreement executed by and between LA Metro and City of Beverly Hills on November 10, 2020. The Agreement requires Metro to assist the City in designing and constructing a new half entrance on the north side of the future Wilshire/Rodeo Station. This is a Non-Federal Funded Project, managed by the City of Beverly Hills. In addition to the LOP budget indicated above, the remainder of Metro’s contribution per the Settlement Agreement (approximately \$10M) is being paid for using contingency from the C1120 contract to cover the cost of changes to the Wilshire/Rodeo Station to facilitate a connection to the City’s new entrance.

**Current Budget and Current Forecast**

The Current Budget and Current Forecast remain the same this period at \$29.3 million.

**Commitments**

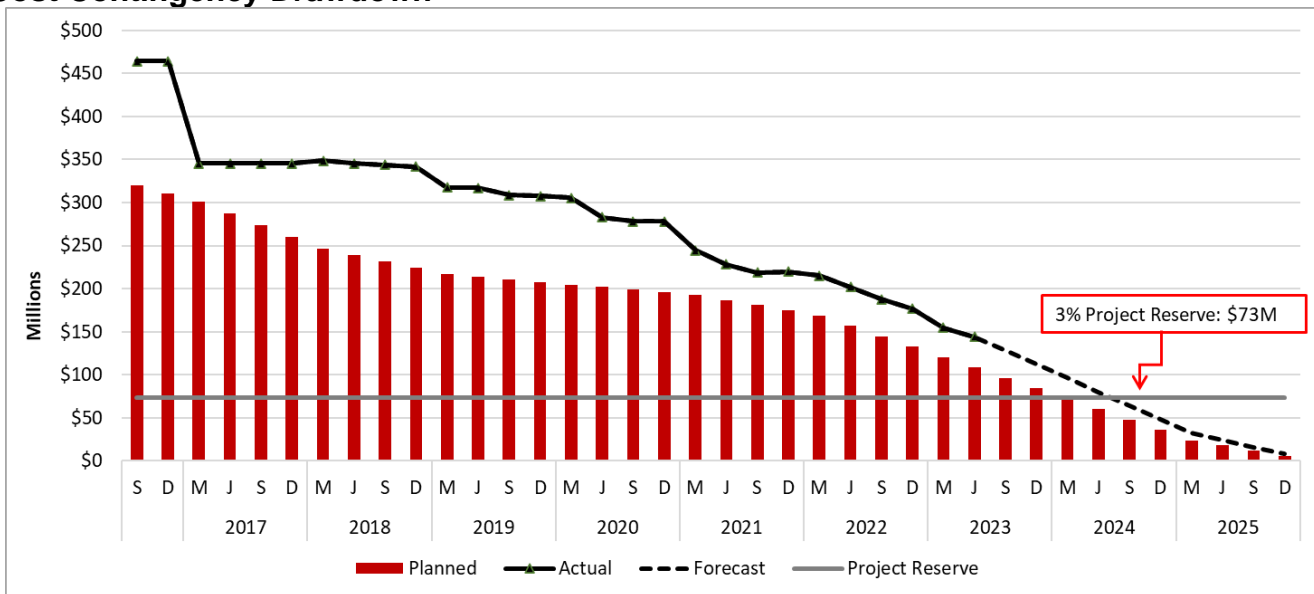
The Commitments remains the same this period at \$0.4 million. The \$0.4 million in Commitments to date represent 1.3% of the Current Budget.

**Expenditures**

*The Expenditures increased this period by \$2 thousand for costs associated with Metro Project Administration. The \$24 thousand in Expenditures to date represent less than 1% of the Current Budget.*

Note: information related to this Project is only reflected in the above information.

### Cost Contingency Drawdown



### Cost Contingency Drawdown Analysis

The Original 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 a 2025 Forecast Revenue Service Date (RSD).

*The Allocated Contingency decreased this period by \$10.4 million due to executed Modifications and a Change Orders for the Design/Build Contract C1120.*

PROJECT COST CONTINGENCY					
DOLLARS IN THOUSANDS					
	Original Contingency (LOP Budget)	Previous Period	Current Period	To-Date	Remaining Contingency (Forecast)
Unallocated Contingency	177,176	(167,865)	-	(167,865)	9,311
Allocated Contingency	168,534	(23,008)	(10,381)	(33,389)	135,145
<b>Total Contingency</b>	<b>345,710</b>	<b>(190,873)</b>	<b>(10,381)</b>	<b>(201,254)</b>	<b>144,456</b>

Note: the above table includes FFGA and Non-FFGA contingency. This does not reflect the contingency increase being proposed for the LOP increase in the upcoming months.

# Risk Management

## Summary of Risks

During the quarterly Risk Register update that occurred on March 29, 2023, zero (0) new risks were identified. There are a total of eighty (80) risks that are being tracked, seven (7) are scored as high, forty-one (41) scored as medium and thirty-two (32) are scored as low to be managed in the next quarter.

### *New Risks Identified:*

*Zero (0) new risks were identified.*

### *Closed Risks:*

*Nine (9) risks closed this period: The risks were the following:*

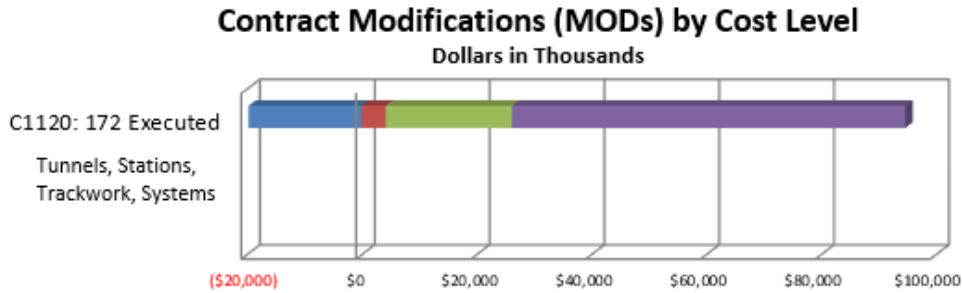
Risk ID	Risk Description	SCC	Risk Score
PLE2-34	TBM breaks down in tunnel and has to be repaired/retrieved.	10	9.0
PLE2-43	Unplanned interventions which lead to schedule delay and increases in construction cost.	10	5.0
PLE2-103	Tunnel production rates are below the rates assumed in the baseline schedule	10	4.0
PLE2-122	Finding alternate dump sites available to accept tunnel muck becomes difficult.	10	4.0
PLE2-13	Unanticipated tiebacks discovered in tunnel alignment.	10	3.5
PLE2-134	Contractor may not perform timely inspections of the cutterhead face and tools, which may lead to machine breakdown or delays due to non-routine maintenance.	90	3.5
PLE2-132	Ongoing issue with conveyor belts continue with reach 5 may cause schedule impact	10	3.0
PLE2-23	Utility relocations by 3rd parties delay construction.	40	3.0
PLE2-5	Unanticipated building basements discovered in public right of way.	10	2.0

## Top Five Risks

The table below shows the top five (5) Project risks identified after the Risk Register update meeting:

Risk ID	Risk Description	Risk Score	Action Items
PLE2-136	COVID-19 Pandemic Impact	20.0	1. Evaluate the guidelines from State and local Government. 2. Put contingency plans in place.
PLE2-90.5	Overall Schedule Mitigation or potential acceleration opportunities become unattainable.	14.0	1. Identify schedule mitigation or acceleration opportunities.
PLE2-20.5	Inability to recover time lost at Century City Constellation Station	13.5	1. Look for opportunities for potential mitigation of schedule delays along Century City schedule path.
PLE2-70.1	New vehicle procurement contract (if needed) and vehicles not ready for RSD	12.0	Supporting consultant to assist with Heavy Rail RFP forecasted to go out in July 2022. RFP for new HRV contract is forecasted to go out in December 2022.
PLE-90.3	Additional/potential schedule delay costs beyond current assessments (tunnels & track/WRS).	12.0	1. Mitigate in areas where reasonable

**Summary of Contract Modifications**



	<b>C1120: 172 Executed</b>
■ Under \$100K	(19,695)
■ \$100K to \$250K	4,181
■ \$250K to \$1M	21,993
■ Over \$1M	68,529
<b>Total Contract MODs</b>	<b>75,008</b>
<b>Contract Award Amount</b>	<b>1,376,500</b>
<b>% of Contract MODs</b>	<b>5.45%</b>

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

*One hundred and seventy-two (172) Contract Modifications (MODS) with a total value of \$75.0 million have been executed since the award of C1120 Contract – Tunnels, Stations, Trackwork and Systems.*



## DISADVANTAGED BUSINESS ENTERPRISE (DBE)

*As of February 2023:*

<b>DBE Goal – Design</b> The percentage of funds apportioned to Design Contracts	25.31%
<b>Current DBE Commitment Design</b> Total DBE Committed Dollars divided by Total Contract Value for Design	\$19.5M 28.10%
<b>Current DBE Participation</b> Total amount paid to date to DBEs divided by the amount paid to date to Prime	\$21.5M 32.89%

*Twenty-one (21) Design DBE sub-consultants have been identified to date.*

<b>DBE Goal – Construction</b> The percentage of funds apportioned to Construction Contracts	17.00%
<b>Current DBE Commitment Construction</b> Contract commitment divided by current contract value for Construction	\$182.8M 13.09%
<b>Current DBE Participation</b> Total amount paid to date to DBEs divided by the amount paid to date to Prime	\$129.4M 15.42%

*Forty-nine (49) Construction DBE sub-contractors have been identified to date.*

## PROJECT LABOR AGREEMENTS (PLA)

*As of February 2023:*

<b>Targeted Worker Goal</b> Construction work to be performed by residents from Economically Disadvantaged Area in the United States	40.00%
<b>Targeted Worker Current Attainment</b>	40.19%
<b>Apprentice Worker Goal</b> Construction work to be performed by Apprentices	20.00%
<b>Apprentice Worker Current Attainment</b>	16.18%
<b>Disadvantaged Worker Goal</b> Construction work to be performed by disadvantaged workers	10.00%
<b>Disadvantaged Worker Current Attainment</b>	8.52%

## FINANCIAL/GRANT

### Status of Funds Source

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 - SECTION 5309 NEW STARTS	\$1,187.000	\$1,187.000	\$771.984	\$1,057.536	89%	\$593.247	50%	\$565.231	48%
FEDERAL - SECTION 5309 NEW STARTS (ARPA-CIG**)	\$0.000	\$58.418	\$58.418	\$58.418	100%	\$58.418	100%	\$58.418	100%
FEDERAL CMAQ	\$169.000	\$169.000	\$169.000	\$169.000	100%	\$169.000	100%	\$169.000	100%
MEASURE R - TIFIA LOAN	\$307.000	\$307.000	\$307.000	\$307.000	100%	\$307.000	100%	\$307.000	100%
MEASURE R 35%	\$811.902	\$753.484	\$608.598	\$518.695	69%	\$369.778	49%	\$200.464	27%
STATE CAPITAL PROJECT LOANS	\$54.762	\$54.762	\$54.762	\$54.762	100%	\$54.762	100%	\$54.762	100%
<b>TOTAL</b>	<b>\$2,529.664</b>	<b>\$2,529.664</b>	<b>\$1,969.762</b>	<b>\$2,165.411</b>	<b>85.6%</b>	<b>\$1,552.205</b>	<b>61.4%</b>	<b>\$1,354.875</b>	<b>53.6%</b>

EXPENDITURES ARE CUMULATIVE THROUGH MARCH 31, 2023

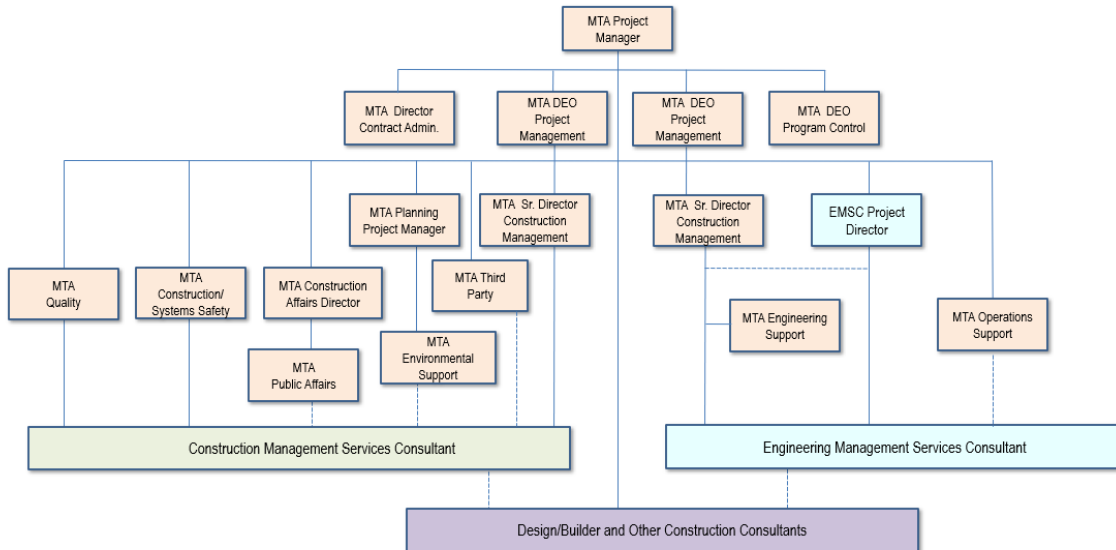
\*\*AMERICAN RESCUE PLAN ACT - CAPITAL INVESTMENTS PROGRAM (ARPA-CIG)

Original Budget based on 2017 Board approved LOP Budget, plus Finance Charges of \$88.7 million.

## PROJECT ORGANIZATION AND STAFFING

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

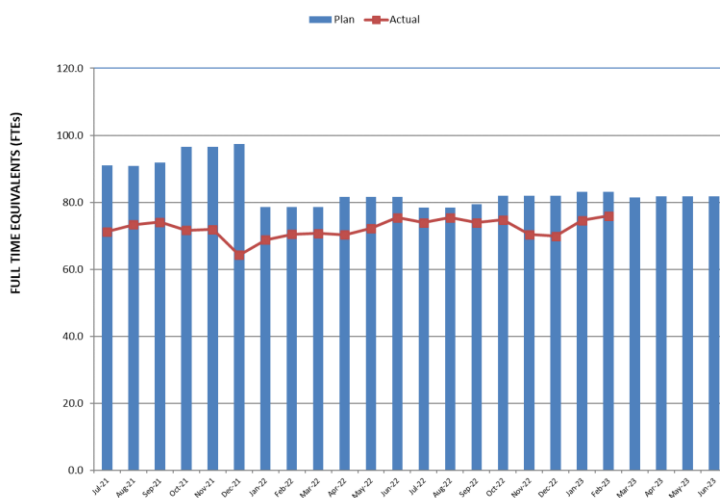
**Purple (D Line) Extension Project Section 2  
Responsibility and Reporting Matrix**



The overall FY23 Total Project Staffing Plan averages 81.3 FTEs per month.

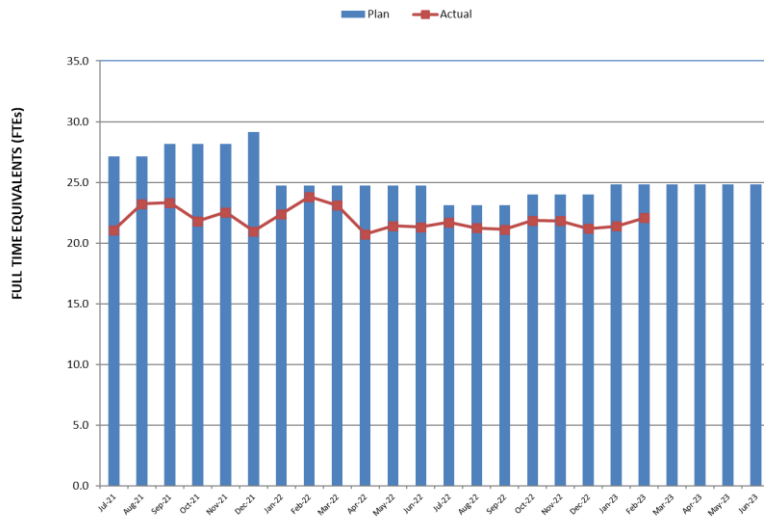
*For February 2023, there were a total of 22.1 FTEs for MTA's Project Administration Staff and 53.8\* FTEs for Consulting Staff. The total project staffing for February 2023 was 75.9 FTEs.*

### Total Project Staffing – Metro and Consultants

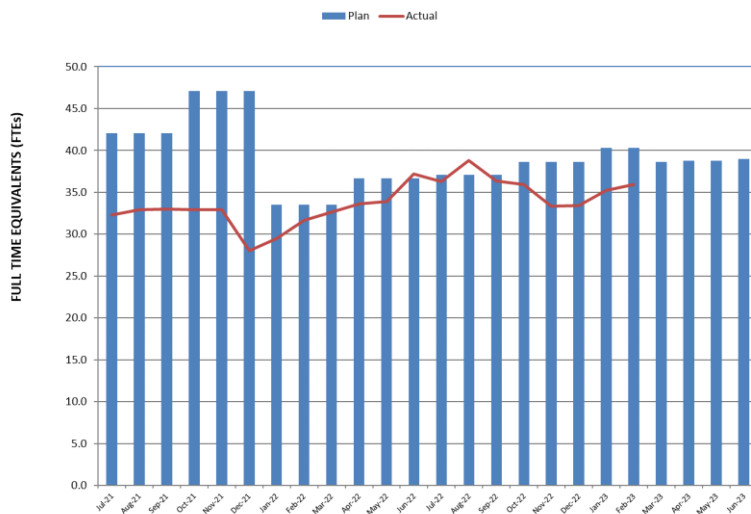


\*Actuals include 4.4 FTEs related to Project Management Support Services (PMSS).

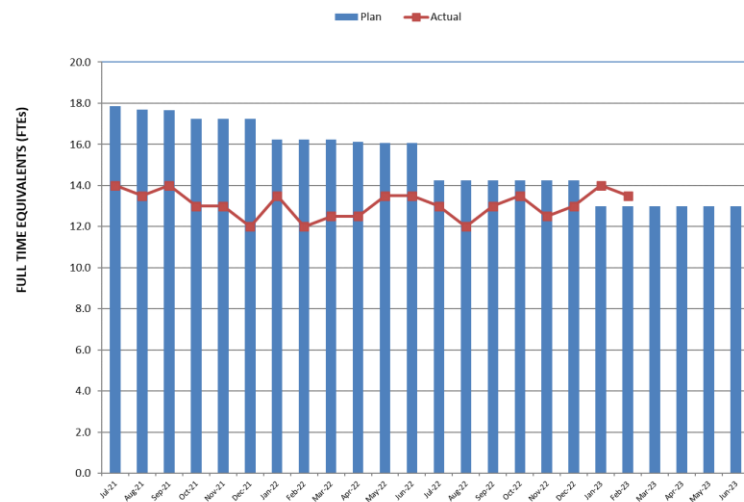
**Metro Staff**



**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.

## REAL ESTATE

<b>Real Estate Status Summary</b>									
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	0	0	0	0	0	0	0	0	0
TCE	3	3	3	3	2	1	1	1	3
SSE	23	23	23	23	15	9	3	3	23
Permanent Easements	3	3	3	3	3	1	0	0	3
<b>Total Parcels</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>21</b>	<b>13</b>	<b>25</b>	<b>25</b>	<b>32</b>

- Parcel W-3301: Had a final offer submitted with trial continued until October 30, 2023. Judge ordered settlement conference to occur before August 31, 2023.
- Parcel W-3302: Has reached a settlement with Notice of Entry received. Payment has been processed.
- Parcel W-3303: Trial being rescheduled. Meeting with Owner and Metro engineering took place to discuss future development rights. Additional meetings necessary.
- Parcel W-3304: Trial being continued so parties can participate in mandatory settlement conference.
- Parcel W-3505: Trial continued with no set date.

## QUALITY ASSURANCE

- Attended weekly Project construction progress meetings.
- Reviewed construction submittals, inspection and assessment reports at various job locations, Twining Independent test laboratory reports (TPOG), Ninyo and Moore test laboratory reports (Metro) and invoices for the work performed by Ninyo and Moore and PQM.
- Contributed to the development of Metro Quality Management Oversight Program and managed the implementation of the Project. Prepared QMO program project monthly report.
- Chaired weekly quality meetings with TPOG Quality Manager for the status, corrective actions, close out documents and verification actions for NCRs issued by Metro; quality control results for the current and upcoming works; planning activities of Metro laboratory materials verification testing and special processes construction assessments.
- Reviewed the following with a disposition for record only/approved/approved as noted:
  - *Electrical Systems Test Plan*
  - *Communications Intrusion Detection Controlled System FAT Procedure*
  - *East Track Interior Wall Raceway and Grounding Installation Drawings at Wilshire Rodeo Station*

## ENVIRONMENTAL

- Reviewed and provided responses to various contractor submittals and requests for information related to environmental matters.
- Issued various QMO reports assessing implementation of environmental requirements.
- Participated in various Project coordination meetings and evaluated progress and schedules for environmental compliance and sustainability efforts.
- Provided environmental awareness training as needed.
- Conducted field environmental monitoring and spot check inspections for construction noise and vibration, stormwater and fugitive dust BMPs, and Metro's Green Construction Policy.



## CONSTRUCTION AND COMMUNITY RELATIONS

- *Produced and distributed eight (8) construction work notices which include specific construction location updates ,weekly construction work updates.*
- *Conducted project presentations in person for the monthly Beverly Hills Sections 1 & 2 Community Construction update. Conducted multiple one-on-one stakeholder meetings with Property Managers regarding traffic control updates, storm drain work, construction coordination for PLE 2 & 3 and the construction schedule. Created and attended events and meetings to engage stakeholders to submit suggestions for Station Names. Continued individual contact with commercial and residential stakeholders.*
- *Extensive outreach for community meetings including distribution of digital notices, direct emails, mailed postcards, social media and paid online and print advertising. Primary outreach efforts are digital, with door-to-door outreach taking place for upcoming ground improvement. Maintained expanded footprint of door-to-door distribution of monthly notices and construction updates.*
- 
- Continued efforts on behalf of Eat Shop Play and Business Interruption Fund ( BIF) in Century City and Beverly Hills. Updated Facebook/Twitter and website as needed.

## CREATIVE SERVICES

- *Reviewed Wilshire/Rodeo Station Canopy Sprinklers design submittal.*
- *Coordinated with Marketing partners to develop materials for public surveys and findings for station naming Board Report1*
- Continued assessment of Project operating impacts to signage between sections and systemwide.
- Managed artist design development for integrated station artworks.
- Continued coordination with arts and cultural stakeholders.

## **SAFETY & SECURITY**

- *TPOG reported one (1) Recordable Injury in March 2023.*
- Attended daily toolbox meetings, weekly crew all hand safety meeting, progress meetings, readiness reviews, and other project meetings to evaluate Contractor's Safety Program compliance with contract requirements.
- Worked with Program Management and Construction Relations staff to monitor issues related to public concerns regarding noise, traffic and public/construction interfaces as well as public interactions with the construction crews.
- Conducted Project Safety Orientation, SCSR and H2S Safety Training for new Metro/Consultants and IPMO project staff.
- Conducted right-of-way (ROW) and Safety/Security walks, Safety/Security reviews and coordination with TPOG staff for oversight and support of all project field work activities.
- Metro/TPOG project safety staff conducted schedule, Safety / Security, and over-the-shoulder review meetings.
- *Hosted the March Monthly Safety and Security Meeting.*
- *TPOG reported 46,963 actual work hours in March 2023.*
- *TPOG Project to Date Work Hours are 3,244,786 with forty-eight (48) Recordable Injuries and eleven (11) day's Away from Work Injuries.*
- *The Recordable Injury Rate is 2.96. The Bureau of Labor Statistics reports the National Average Recordable Injury Rate is 2.4.*

## APPENDIX CHRONOLOGY OF EVENTS

January 2011	FTA approval to enter Preliminary Engineering
August 2012	FTA Record of Decision
December 2014	FTA approval to enter 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 TPOG and approved Life-of-Project Budget
January 2017	Issued C1120 Contract Award to 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	Bureau of Engineering approved a nine-month street closure of Constellation Blvd. between Century Park East and Avenue of the Stars
September 2018	Full street closure of Constellation Blvd. commenced
September 2018	Delivery of tunnel boring machines (TBMs) commenced
October 2018	Piling installation commenced at launch box in Century City
October 2018	Granted Wilshire/Rodeo Station footprint right-of-way (ROW) access to TPOG
December 2018	Completed all civil work for third parties at Century City Constellation Station
December 2018	Demolition of former Ace Gallery complete
January 2019	Completed soldier pile installation for the TBM launch box at the eastern end of the Century City Constellation Station
January 2019	Metro Board Approves City of Beverly Hills MOA for C1120 Contract
February 2019	City of Beverly Hills City Council Approves MOA for C1120 Contract
March 2019	Start of installation of deck beams for the TBM Launch Box
May 2019	Completed soldier pile installation for Tunnel Access Shaft in Century City
June 2019	TBM Unveiling Event
June 2019	Full Street Closure of Constellation Blvd. Extension Granted
August 2019	Completed Construction of Santa Monica Boulevard Bus Layover in Century City
September 2019	Metro’s request to lift the holiday moratorium for construction activities in Beverly Hills was rejected by the City Council
October 2019	Piling installation commenced for the Wilshire/Rodeo Station box.
November 2019	Poured invert slab at TBM launch box in Century City.
December 2019	An Additional 7-Month Full Street Closure of Constellation Blvd. was Granted by Los Angeles Board of Public Works.
December 2019	Started TBM Assembly.

December 2019	Motion for prejudgment possession for SSE under Beverly Hill High School was granted.
January 2020	Piling activities resumed at Wilshire/Rodeo Station after the holiday moratorium.
January 2020	A geophysical survey identified three oil wells located east of the Tunnel Access Shaft underneath Beverly Hills High School within the tunnel alignment.
March 2020	LADWP completed 4.8kv system cabling pulling and splicing, along with the remaining cable removals at Century City Constellation Station.
March 2020	Beverly Hills City Council approved a full street closure of Wilshire Boulevard (between Beverly Drive and Crescent Drive) for the duration of the “Safer at Home” orders due to the COVID-19 Pandemic.
March 2020	Right of Entry Executed to Access BHUSD.
April 2020	Began tunneling operations of the BL Tunnel.
April 2020	Completed implementation of the Wilshire Boulevard closure (between Beverly Drive and Crescent Drive) for the duration of the “Safer at Home” orders due to the COVID-19 Pandemic.
May 2020	Completed station box and entrance piling activities at Wilshire/Rodeo Station.
June 2020	Wilshire Boulevard reopened to traffic following completion of decking at Wilshire/Rodeo Station.
July 2020	Began tunneling operations of the BR Tunnel.
August 2020	Completed excavation of Tunnel Access Shaft.
August 2020	Access granted to contractor to W-3801 for the Century City Constellation Station entrance.
September 2020	Abandonment of the first legacy oil well was completed.
September 2020	BL TBM “Ruth” Breaks into Tunnel Access Shaft.
September 2020	TIFIA Loan Paid Off and Account Closed.
October 2020	The abandonment of the remaining oil wells has been completed.
October 2020	BR TBM “Harriet” Breaks into Tunnel Access Shaft.
November 2020	Settlement agreement reached with City of Beverly Hills ending city’s lawsuit against FTA and Metro.

November 2020	Beverly Hills City Council approved Metro's holiday moratorium waiver request and work hours established by the Memorandum of Agreement (MOA). Construction of Wilshire/Rodeo Station will continue through New Year's Day.
November 2020	City of Los Angeles approved additional closures east of Avenue of the Stars along Constellation Boulevard through January 2, 2021.
December 2020	First TBM clears all buildings under Beverly Hills High School campus.
January 2021	City of Los Angeles approved extension of street closure for decking and utility work between Avenue of the Stars and Solar Way to April 5, 2021, and weekend closures at the intersection of Constellation Boulevard and Avenue of the Stars.
February 2021	Both TBMs have pushed through the Tunnel Access Shaft and the BL TBM "Ruth" is using conveyor belts for muck removal.
March 2021	Decking complete at Century City Constellation Station except for the twelve (12) remaining panels that are being utilized for additional ventilation openings.
March 2021	BL TBM (Ruth) excavation suspended after approximately 1,300 feet from eastern end of Century City Constellation Station due to unplanned maintenance to face of cutterhead and completion of repairs.
March 2021	Street restoration complete and Constellation Blvd. between Avenue of the Stars and Solar Way fully reopened earlier than planned.
April 2021	Permanent concrete work began at the Wilshire/Rodeo Station.
May 2021	Reopening of Constellation Blvd.
May 2021	Concrete placement for the first section of the invert slab at Wilshire/Rodeo station in Beverly Hills.
May 2021	TBM's resumed excavation after cutterhead inspection and maintenance for BL TBM and muck removal transitioning to conveyor belts for BR TBM.
June 2021	Switching from vertical conveyor belts to crane and muck boxes in the Tunnel Access Shaft.
July 2021	The conversion of the muck conveyance systems for both tunnels was completed on July 27, 2021.
August 2021	The first concrete placement for the first level Wilshire/Rodeo Station walls occurred this period.
August 2021	Both BL and BR TBM have exited the first of two seismic lining sections this period.
October 2021	Both TBM's have exited the 2 <sup>nd</sup> seismic zone of the alignment.

October 2021	Excavation of the Century City Constellation station entrance box has commenced.
October 2021	City of Beverly Hills approved the request for the Holiday Moratorium waiver allowing work to continue with adjusted hours and activities.
December 2021	Both TBM's reached the planned stopping point prior to break-in at Wilshire/Rodeo.
January 2022	BR TBM "Ruth" Breaks into Wilshire/Rodeo Station Box on January 12, and BL TBM "Ruth" Breaks into Wilshire/Rodeo Station Box on January 28.
March 2022	Both TBM's have begun excavation on reach 4 toward Wilshire/La Cienega Station. BL on March 2, 2022, and BR on March 29, 2022.
April 2022	On April 8, 2022, VCM notifies CRRC MA Corporation that Metro does not intend to exercise any of the available Options for the HR4000 Contract.
May 2022	Completed drilling for shoring beams on south side of Avenue of the Stars for Storm Drain.
June 2022	Completed membrane waterproofing on Concourse Walls (Entrance) – Wilshire/Rodeo Station.
June 2022	Began cross passage dewatering well installation along tunnel alignment.
July 2022	On July 29, 2022, a jury determined the amount of just compensation that Metro owes the Beverly Hills Unified School District (BHUSD) for the subsurface easements under the high school campus and the administration building. The verdict concludes all litigation between BHUSD and Metro.
August 2022	Started formwork for Station Entrance Roof at Wilshire/Rodeo Station.
September 2022	Started work for SCE permanent power at Wilshire/Rodeo.
<i>September 2022</i>	<i>Started Cross Passage 40 work in BL tunnel.</i>
October 2022	Metro issued a Notice of Work Suspension on October 21, 2022, effective immediately until November 7, 2022, out of concern for TPOG's Safety performance.
November 2022	On November 4, 2022, Metro allowed production work to resume at the Century City Constellation and Wilshire/Rodeo stations. TBM tunneling production resumed on November 16, 2022. Work resumed for the BL tunnels and Cross Passages on November 18, 2022.
November 2022	On November 18, 2022, the BR TBM completed overall excavation and reached the Purple Line Extension Section 1 interface concrete end wall.

December 2022	On December 6, 2022, HRV 5000 (New Heavy Rail Vehicle Contract) was issued.
January 2023	On January 12, 2023, the BL TBM completed overall excavation and reached the Purple Line Extension Section 1 interface concrete end wall.
February 2023	Completion of Wilshire/Rodeo Station Entrance Concourse Roof Deck.