Los Angeles County
Metropolitan Transportation Authority

# Westside Purple Line Extension

## Section 1 Project

MONTHLY PROJECT STATUS REPORT
OCTOBER 2017

Metro®

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# WESTSIDE PURPLE LINE EXTENSION SECTION 1 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).

**OCTOBER 2017**

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# PROJECT OVERVIEW & STATUS

Section 1 of the Westside Purple Line Extension Project is the first 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 1 will extend the existing Purple Line by 3.92 miles beginning at the Wilshire/Western Station. From this station, the twin tunnel alignment will travel westerly within the existing Wilshire Boulevard right-of-way. Stations will be located at the intersections of Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega. All three of the station boxes will be located within the Wilshire Boulevard right-of-way with station portals extending to off-street entrances. Two of the stations, Wilshire/La Brea and Wilshire/Fairfax are within the jurisdiction of the City of Los Angeles. The Wilshire/La Cienega Station is within the City of Beverly Hills jurisdiction.

## Design

The C1045 Contractor, Skanska, Traylor and Shea (STS), and their final design team, Parsons Transportation Group (PTG), completed final design in June 2017.

The Engineering Management Services (EMS) team continues to provide design support to the Design/Build Contract, and the Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building Location 64 Contract.

For the Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building Location 64 Contract (C1078), support to Metro continues with responding to RFI's and submittals and design updates. The design units are currently scheduled to be completed by December 2017.

*Notable meetings this period for the EMS team included a meeting with STS on a final proposal for the shotcrete alternative at the Wilshire/Fairfax Station, and a special task force meeting with STS and its subcontractor Golder Associates on unique gas conditions in tunnel reach 3.*

*Notable reviews this period included a continued focused effort with the Systems group on submittals related to the upcoming factory acceptance testing of train control equipment and CNs related to Wilshire/Western Station equipment replacement. The equipment layout at Wilshire/La Cienega Station was accepted by Southern California Edison (SCE), and work to revise the crossover designs to include AREMA standard No. 10 turnout and reduced radius curves is complete.* Support in reviewing other design submittals, construction related work plans, third party submittals and responses to RFI's continues.

Monthly Metro Fire/Life/Safety meetings are occurring.

STS is continuing with the required contractual submittals.

**Major Contract Procurement**

All construction contracts for the Project have been awarded.

**Construction**

Potholing at the Wilshire/Western retrieval site for existing utilities began on June 28, 2017. Sanitary sewer relocation started on the weekend of September 23, 2017. *Potential modifications to SOE final design is pending utility and structure potholing resolution, which is underway. SOE pile installation is scheduled to begin in December 2017.*

Wilshire/La Brea Station excavation began on October 12, 2016 and continues beneath the deck panels without obstruction from hanging utilities. Station excavation is scheduled to complete in November 2017, in accordance with the advancement of critical work per Contract Modification 45. *Final dewatering activities are on-going in preparation for installation of the grounding grid and mud slab.* Station concrete activities are scheduled to begin in December 2017.

Weekend closures began on February 11, 2017 for the installation of deck beams and concrete deck panels for the Wilshire/Fairfax Station. This operation was completed on June 19, 2017. Steady-state traffic control was implemented on July 15, 2017. The hanging of utilities and ventilation under the concrete deck panels was completed in September 2017. Station excavation and the installation of walers and struts is on-going. *Preparation for Level B walers and struts installation continues.*

The Wilshire/La Cienega Station pile installation began on March 20, 2017. *This operation was completed on October 12, 2017. Street decking commenced on the weekend of October 6, 2017.* There are 17 planned weekend closures for the Wilshire/La Cienega Station decking operation. *The installation of instrumentation and the hanging of utilities below the deck continues.*

The C1045 contractor has access to all properties to construct the Project.

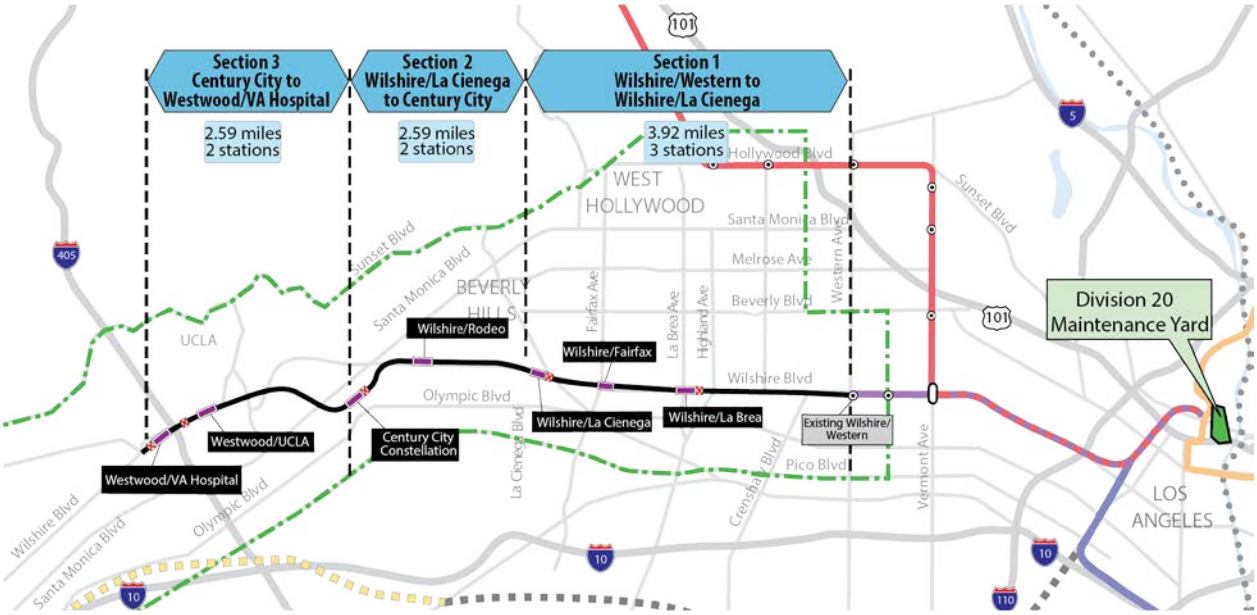
Herrenknecht Tunneling Systems USA, Inc., the Tunnel Boring Machine (TBM) manufacturer, *is currently shipping the two WPLE Section 1 TBMs for delivery to the United States in mid-December 2017*. *These TBMs will be stored in Riverside, California, and will be sent to the Wilshire/La Brea station site for the start of tunneling in 2018.* Tunnel instrumentation installation along the (Reach 1) alignment continues.

*The C1078 contractor continues concrete pours for the building footing pads at the Division 20 Maintenance-of-Way and Non-revenue Vehicle Building Location 64. Elevator shaft, inspection pit work, and underground plumbing installation, also continues. The delivery of structural steel is scheduled for December 2017.*

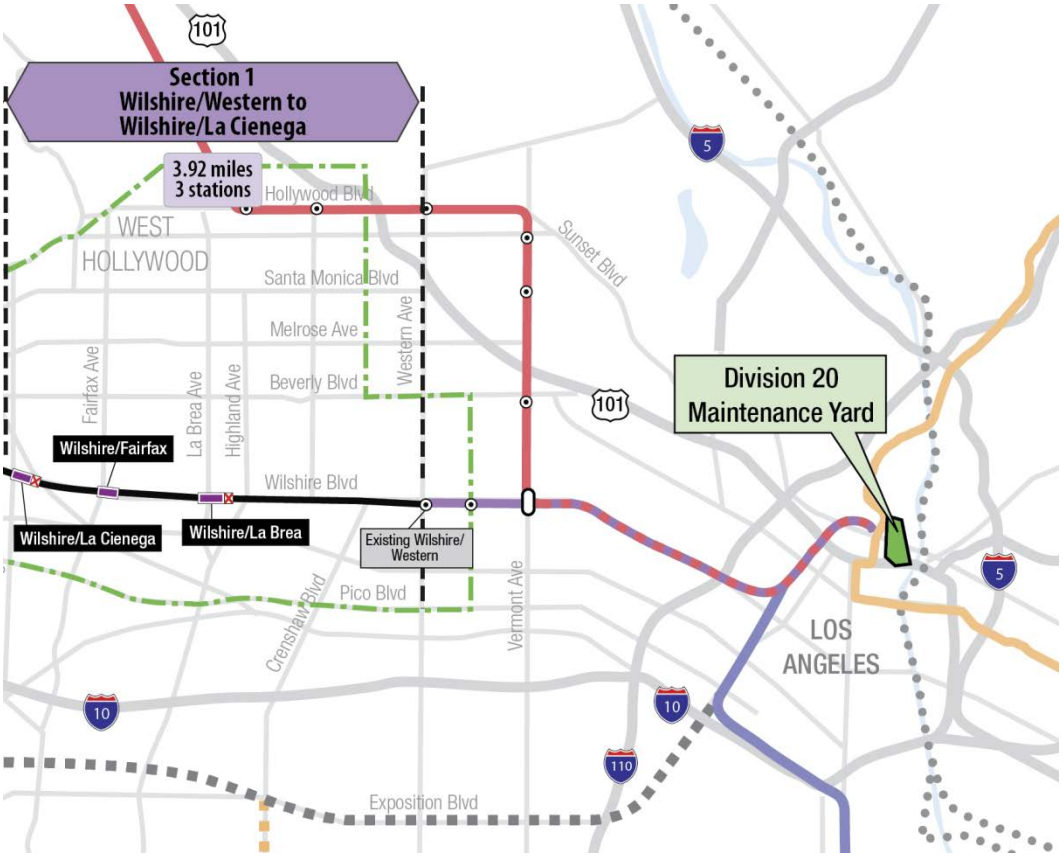
# MANAGEMENT ISSUES

No Management Issues this period.

# PROJECT ALIGNMENT by SECTIONS



# PROJECT ALIGNMENT SECTION 1



# BASE PROJECT SCOPE

Section 1 of the Westside Purple Line Extension Project is the first 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 1 will extend the existing Purple Line by 3.92 miles beginning at the Wilshire/Western Station. From this station, the twin tunnel alignment will travel westerly within the existing Wilshire Boulevard right-of-way. Stations will be located at the intersections of Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega. All three of the station boxes will be located within the Wilshire Boulevard right-of-way with station portals extending to off-street entrances. Two of the stations, Wilshire/La Brea and Wilshire/Fairfax are within the jurisdiction of the City of Los Angeles. The Wilshire/La Cienega Station is within the City of Beverly Hills jurisdiction.

The Wilshire/La Brea Station box will be located under the center of Wilshire Boulevard in between Detroit Street and Orange Drive. A double crossover will be located east of the station box. The station entrance will be on the northwest corner of Wilshire Boulevard and La Brea Avenue.

The Wilshire/Fairfax Station box will be located under the center of Wilshire Boulevard west of Fairfax Avenue to west of Ogden Drive. The station entrance will be on the southeast corner of Wilshire Boulevard and Orange Grove Avenue.

The Wilshire/La Cienega Station box will be located under the center of Wilshire Boulevard immediately east of La Cienega Boulevard. A double crossover will be located east of the station box. The station entrance will be on the northeast corner of Wilshire Boulevard and La Cienega Boulevard. Since the station will be the terminus station for Section 1, tail tracks will be located west of the station box.

**Contract C1034 – Wilshire/Fairfax Exploratory Shaft**

Metro constructed an exploratory shaft to observe ground conditions prior to the award of Contract C1045. The location of the exploratory shaft was adjacent to the future Wilshire/Fairfax Station. The construction of the shaft included furnishing and installing monitoring instruments, ventilation, and record and report instrumentation data during the excavation of the shaft. After construction of the shaft, the shaft was maintained for an observation time period. Afterwards, the shaft was dismantled and the site backfilled in a condition acceptable to the property owner. The contract was substantially completed on October 31, 2014.

**Contract C1048 – Wilshire/La Brea Advanced Utility Relocations**

The work scope of this contract included the relocation of existing LADWP power, water utilities and a sewer line within the construction limits of the Wilshire/La Brea Station. The contractor was responsible for working in streets, procuring materials, and coordinating with the utility owner. The contractor constructed the new facilities in accordance with the utility plans and specifications, provided traffic control, restored streets, and supported utility crews installing cabling and during cut-over of the existing utilities. The contract was substantially completed on October 27, 2014.

**Contract C1055 – Wilshire/Fairfax Advanced Utility Relocations**
The work scope of this contract included the relocation of existing LADWP power and water utilities within the construction limits of the Wilshire/Fairfax Station. The contractor was responsible for working in streets, procuring materials, and coordinating with the utility owner. The contractor constructed the new facilities in accordance with utility plans and specifications, provided traffic control, restored streets, and supported utility crews installing cabling and during cut-over of the existing utilities. The contract was substantially completed on October 7, 2015.

**Contract C1056 – Wilshire/La Cienega Advanced Utility Relocations**
The work scope of this contract included the relocation of existing City of Beverly Hills water, storm drain and sewer utilities within the construction limits of the Wilshire/La Cienega Station. The contractor was responsible for working in streets, procuring materials, and coordinating with the utility owner. The contractor constructed the new facilities in accordance with utility plans and specifications, provided traffic control, restored streets, and supported utility crews during cut-over of the existing utilities. The contract was substantially completed on August 5, 2016.

**Contract C1045 – Tunnels, Stations, Trackwork, Systems and Systems Integration Testing**
The procurement of this contract utilizes 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 3.92 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 finish work. A retrieval shaft will be constructed to the west of the existing Wilshire/Western Station for extraction of the tunnel boring machines. Three underground stations are to be constructed, two with double-crossovers, and the terminus station to include tail tracks. Each station has a single entrance plaza with stairs, escalators and elevators which meet ADA requirements. The scope of work includes all architectural finishes, mechanical, electrical, systems and equipment including train control, traction power, communications, trackwork and the system tie-in to the existing Metro Purple Line, testing and commissioning.

**Contract C1078 – Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building Location 64**
The Design/Build contract provides for final design and construction of a new Maintenance-Of-Way (MOW) stores and Non-Revenue Vehicle (NRV) building at the south end of the existing Division 20 Yard (Location 64). The displacement of the existing MOW stores building and NRV facility are due to the proposed turn-back facility site in the yard.

# BASE PROJECT SCOPE (Continued)

**Metro Furnished Equipment**

Metro has procured a contract to provide 34 Heavy Rail Vehicles (HRV) necessary to operate the extension to the Purple Line. An additional contract will be procured for the Universal Fare System (UFS). 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 three 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; as well as abnormal and emergency scenarios in which random combinations of system interactions are tested; equipment "burned-in"; and training of Metro personnel who will eventually operate and maintain the extension and for emergency services personnel. Activities occurring during Pre-Revenue Operations are carried out by a designated Metro Project Rail Activation Group.

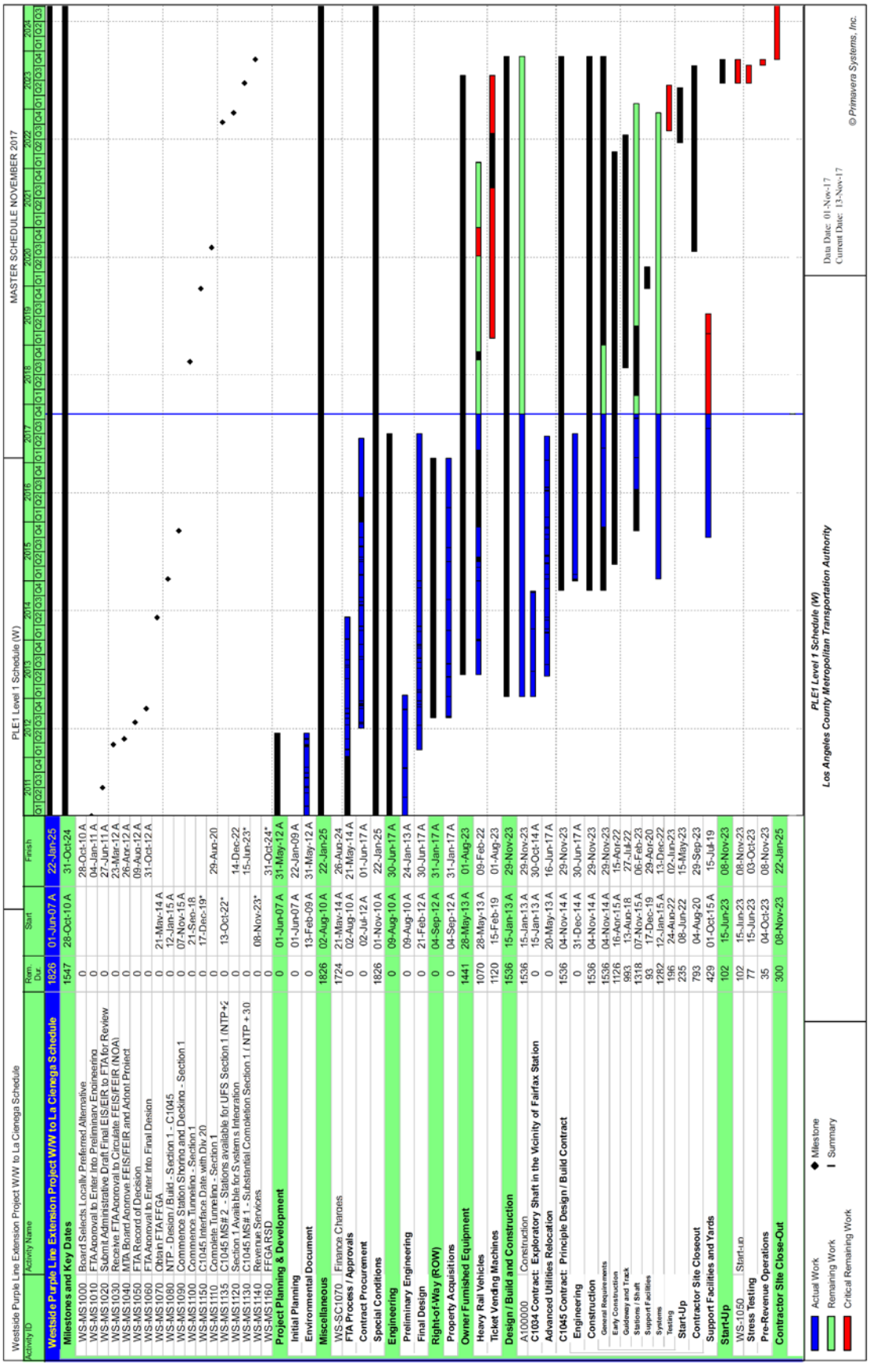
# KEY MILESTONES SIX-MONTH LOOK AHEAD

| | Milestone Date | Nov-17 | Dec-17 | Jan-18 | Feb-18 | Mar-18 | Apr-18 |
|---|---|---|---|---|---|---|---|
| C1045 Wilshire/Western Implement Stage 1 Work Traffic Control Plan | 11/04/17 | ☐ | | | | | |
| C1045 Wilshire/La Cienega Stage 6 Street Decking | 11/17/17 | ☐ | | | | | |
| C1045 Wilshire/La Brea Station Mud Mat Installation Begins | 11/18/17 | ☐ | | | | | |
| C1045 Tunnel Boring Machine Delivery to Los Angeles | 12/15/17 | | ☐ | | | | |
| C1045 Wilshire/La Brea Station Concrete Begins | 12/18/17 | | ☐ | | | | |
| C1045 Wilshire/Western Piling Completes | 01/16/18 | | | ☐ | | | |
| C1078 Division 20 Building Erect Structural Steel | 01/19/18 | | | ☐ | | | |
| C1045 Wilshire/La Cienega Street Decking Completes | 01/28/18 | | | ☐ | | | |
| C1045 Wilshire/La Cienega Support of Existing Utilities Completes | 02/22/18 | | | | ☐ | | |
| C1045 Wilshire/Western Decking Completes | 03/11/18 | | | | | ☐ | |
| C1045 Wilshire/Western Support of Existing Utilities | 04/25/18 | | | | | | ☐ |

◆ MTA Staff  Ⓜ MTA Board Action  **FTA** (Federal Transit Administration)

△ Other Agencies  ☐ Contractors

# PROJECT SUMMARY SCHEDULE

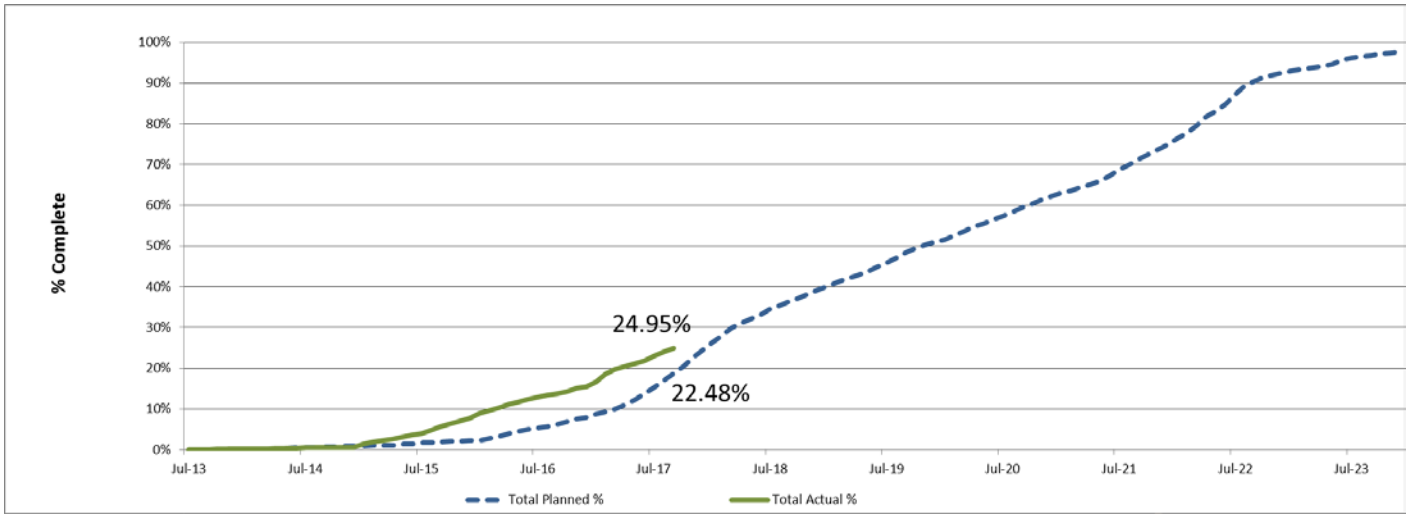


# SCHEDULE MEASUREMENTS

| | Status | Change from Last Period | Comment |
|---|---|---|---|
| Forecast Revenue Service | 11/8/2023 | None | |
| FFGA Revenue Service | 10/31/2024 | None | |
| **Final Design Progress:** | | | |
| Contract C1045 | 100.00% | 0.00% | |
| Contract C1078 | 80.40% | 2.18% | |
| **Construction Contracts Progress*:** | | | |
| Contract C1048 | 100.00% | 0.00% | Completed on schedule |
| Contract C1045 | 22.89% | 0.95% | |
| Contract C1055 | 100.00% | 0.00% | Completed on schedule |
| Contract C1056 | 100.00% | 0.00% | Completed on schedule |
| Contract C1078 | 19.66% | 1.54% | |

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

# OVERALL CONSTRUCTION PROGRESS CURVE




*The actual overall construction progress is 24.95% versus a planned of 22.48% through October 2017.* The progress curves represent a composite percentage for the physical progress of work performed to complete the Project's construction contracts, including the major Design-Build (C1045), the three Advanced Utility Relocations (C1048, C1055 & C1056), and the Division 20 MOW & NRV Building Location 64 (C1078).

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

| | Initial Procurement | Submittal | Delivery | Installation |
|---|---|---|---|---|
| **Tunnel Boring Machine** | 1/29/16 | 5/30/16 | 11/30/17 | 8/13/18 |
| Deliver to Site - Station HVAC System | 12/4/17 | *6/6/18* | *5/23/19* | *9/23/20* |
| Deliver to Site - Ventilation Fans | 12/4/17 | *6/6/18* | *7/16/19* | *1/8/21* |
| Deliver to Site - Elevators | 8/6/17 | *2/6/18* | *4/7/19* | *8/6/21* |
| Deliver to Site - Escalalators | 10/5/17 | *4/7/18* | *6/6/19* | *8/6/21* |
| | | | | |
| **Heavy Rail Vehicles** | 7/16/15 | 10/3/18 | 2/9/22 | 1/9/23 |
| | | | | |
| **Ticket Vending Machines** | 4/29/20 | 12/25/20 | 6/23/21 | 12/20/21 |
| | | | | |

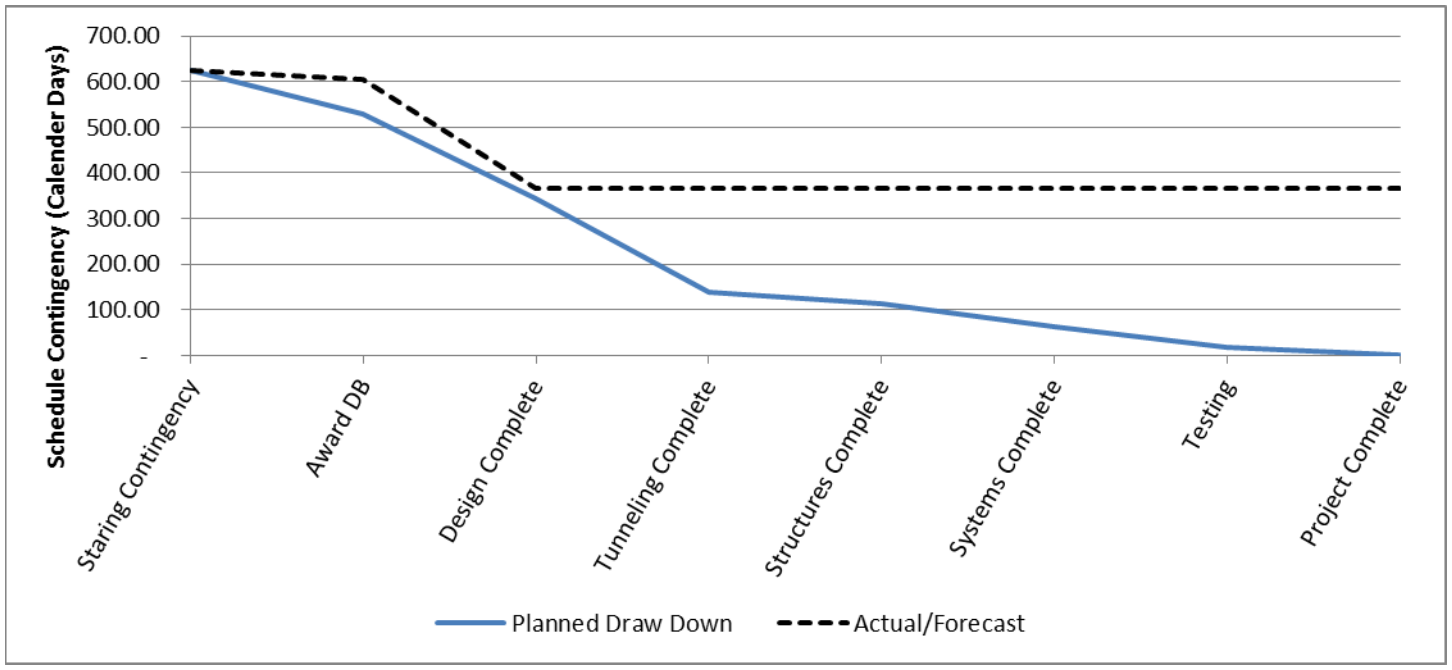
# DESIGN BUILDER'S (C1045) LONG LEAD ITEM LIST

| Item | Initial Procurement | Approved Submittal | Delivery | Installation Date |
|---|---|---|---|---|
| Procure / Deliver Fiber Optic Cable | 31-Aug-18 | 28-Sep-18 | 27-Dec-18 | 29-Sep-20 |
| Procure / Deliver Innerduct | 31-Aug-18 | 28-Sep-18 | 27-Dec-18 | 4-Sep-20 |
| Procure / Deliver Radio Cable | 31-Aug-18 | 28-Sep-18 | 27-Dec-18 | 16-Oct-20 |
| SCADA: Procure / Deliver Devices | 29-Oct-18 | 24-Nov-18 | 22-Feb-19 | 6-May-21 |
| Procure / Deliver SCADA Cable | 31-Aug-18 | 28-Sep-18 | 27-Dec-18 | 4-Sep-20 |
| Procure / Deliver TPS Bonding Cable | 29-Oct-18 | 24-Nov-18 | 22-Feb-19 | 13-Oct-21 |
| Procure / Deliver Traction Power Cable | 29-Oct-18 | 24-Nov-18 | 22-Feb-19 | 8-Jun-20 |
| TPS: Procure/Deliver BLS Equipment & Devices | 29-Oct-18 | 24-Nov-18 | 22-Feb-19 | 1-Jun-20 |
| Mfgr/Assemble/Wire DC Rectifier/Transformer - La Cienega TPSS | 24-Sep-18 | 20-Oct-18 | 18-Jan-19 | 21-Jan-19 |
| Mfgr/Assemble/Wire HV Metering Switchgear - La Cienega TPSS | 24-Sep-18 | 20-Oct-18 | 18-Jan-19 | 21-Jan-19 |
| Mfgr/Assemble/Wire DC Switches - Fairfax GBS | 24-Sep-18 | 20-Oct-18 | 18-Jan-19 | 21-Jan-19 |
| Mfgr/Assemble/Wire HV Metering Switchgear - Fairfax GBS | 21-Jan-19 | 9-Feb-19 | 10-May-19 | 13-May-19 |
| Mfgr/Assemble/Wire HV Metering Switchgear - La Brea TPSS | 13-May-19 | 6-Jun-19 | 4-Sep-19 | 5-Sep-19 |
| CCTV: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 15-Feb-19 | 16-Mar-19 | 14-Jun-19 | 23-Dec-21 |
| CCTV: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 13-Feb-18 | 14-Mar-18 | 12-Jun-18 | 15-Dec-21 |
| CCTV: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 13-Jun-18 | 13-Jul-18 | 11-Oct-18 | 1-Oct-21 |
| CCTV: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 12-Oct-18 | 16-Nov-18 | 14-Feb-19 | 5-Oct-21 |
| CTS: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 21-Jan-19 | 16-Feb-19 | 17-May-19 | 6-Jan-22 |
| CTS: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 17-Jan-18 | 14-Feb-18 | 15-May-18 | 13-Jul-21 |
| CTS: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 16-May-18 | 16-Jun-18 | 14-Sep-18 | 18-May-21 |
| CTS: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 17-Sep-18 | 20-Oct-18 | 18-Jan-19 | 5-Oct-21 |
| EMER MGMT: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 13-Mar-18 | 12-Apr-18 | 11-Jul-18 | 22-Apr-26 |
| EMER MGMT: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 12-Jul-18 | 10-Aug-18 | 8-Nov-18 | 23-Feb-22 |
| EMER MGMT: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 9-Nov-18 | 14-Dec-18 | 14-Mar-19 | 22-Mar-22 |
| FIRE ALARM: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 21-Jan-19 | 16-Feb-19 | 17-May-19 | 5-Jan-22 |
| FIRE ALARM: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 17-Jan-18 | 14-Feb-18 | 15-May-18 | 9-Nov-21 |
| FIRE ALARM: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 16-May-18 | 16-Jun-18 | 14-Sep-18 | 30-Aug-21 |
| FIRE ALARM: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 17-Sep-18 | 20-Oct-18 | 18-Jan-19 | 17-Dec-21 |
| GAS DETECTION: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 15-Feb-19 | 16-Mar-19 | 14-Jun-19 | 2-Mar-21 |
| GAS DETECTION: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 13-Feb-18 | 14-Mar-18 | 12-Jun-18 | 2-Mar-21 |
| GAS DETECTION: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 13-Jun-18 | 13-Jul-18 | 11-Oct-18 | 26-Aug-21 |
| GAS DETECTION: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 12-Oct-18 | 16-Nov-18 | 14-Feb-19 | 27-May-21 |
| INTRUSION: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 15-Feb-19 | 16-Mar-19 | 14-Jun-19 | 10-Feb-21 |
| INTRUSION: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 13-Feb-18 | 14-Mar-18 | 12-Jun-18 | 22-Jan-26 |
| INTRUSION: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 13-Jun-18 | 13-Jul-18 | 11-Oct-18 | 12-Nov-21 |
| INTRUSION: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 12-Oct-18 | 16-Nov-18 | 14-Feb-19 | 7-Jan-22 |
| RADIO: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 1-Dec-17 | 23-Dec-17 | 23-Mar-18 | 10-Nov-20 |
| RADIO: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 1-Dec-17 | 23-Dec-17 | 23-Mar-18 | 6-Oct-21 |
| RADIO: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 1-Dec-17 | 23-Dec-17 | 23-Mar-18 | 2-Aug-21 |
| RADIO: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 1-Dec-17 | 23-Dec-17 | 23-Mar-18 | 28-Jun-21 |
| SCADA: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 21-Jan-19 | 16-Feb-19 | 17-May-19 | 3-Mar-21 |
| SCADA: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 17-Jan-18 | 14-Feb-18 | 15-May-18 | 21-Sep-21 |
| SCADA: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 16-May-18 | 16-Jun-18 | 14-Sep-18 | 14-Jul-21 |
| SCADA: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 17-Sep-18 | 20-Oct-18 | 18-Jan-19 | 7-Oct-21 |
| SEISMIC: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 13-Feb-18 | 14-Mar-18 | 12-Jun-18 | 4-May-22 |
| SEISMIC: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 13-Jun-18 | 13-Jul-18 | 11-Oct-18 | 3-Mar-22 |
| SEISMIC: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 12-Oct-18 | 16-Nov-18 | 14-Feb-19 | 15-Apr-22 |
| TELEPHONE: Assemble/Rack & Stack/Factory Test COM Equipment for Western | 15-Feb-19 | 16-Mar-19 | 14-Jun-19 | 11-Feb-21 |
| TELEPHONE: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 13-Feb-18 | 14-Mar-18 | 12-Jun-18 | 30-Mar-22 |
| TELEPHONE: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 13-Jun-18 | 13-Jul-18 | 11-Oct-18 | 5-Jan-22 |
| TELEPHONE: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 12-Oct-18 | 16-Nov-18 | 14-Feb-19 | 22-Feb-22 |
| TPIS: Assemble/Rack & Stack/Factory Test COM Equipment for La Brea | 13-Feb-18 | 14-Mar-18 | 12-Jun-18 | 10-Mar-22 |
| TPIS: Assemble/Rack & Stack/Factory Test COM Equipment for Fairfax | 13-Jun-18 | 13-Jul-18 | 11-Oct-18 | 4-Feb-22 |
| TPIS: Assemble/Rack & Stack/Factory Test COM Equipment for La Cienega | 12-Oct-18 | 16-Nov-18 | 14-Feb-19 | 30-Mar-22 |
| UPS: Manufacture/Factory Test COM Equipment for La Brea | 17-Jan-18 | 14-Feb-18 | 15-May-18 | 26-Aug-20 |
| UPS: Manufacture/Factory Test COM Equipment for Fairfax | 16-May-18 | 16-Jun-18 | 14-Sep-18 | 7-Oct-21 |
| UPS: Manufacture/Factory Test COM Equipment for La Cienega | 17-Sep-18 | 20-Oct-18 | 18-Jan-19 | 11-Oct-21 |
| PROCURE GAS/WATERPROOFING MATERIALS FOR LA BREA STATION | 19-Nov-17 | 19-Dec-17 | 18-Jan-18 | 8-Jan-18 |
| FABRICATE CANOPY STRUCTURE - FAIRFAX STATION | 19-May-18 | 18-May-18 | 16-Aug-18 | 8-Sep-21 |
| FABRICATE CANOPY STRUCTURE - LA CIENEGA STATION | 17-Aug-18 | 16-Aug-18 | 14-Nov-18 | 11-Oct-21 |
| Mfgr/Assemble/Wire DC Switchgear - La Cienega TPSS | 24-Sep-18 | 1-Dec-18 | 1-Mar-19 | 23-Nov-21 |
| Mfgr/Assemble/Wire AC Switchgear - La Cienega TPSS | 24-Sep-18 | 1-Dec-18 | 1-Mar-19 | 8-Dec-21 |
| Mfgr/Assemble/Wire DC Switchgear - La Brea TPSS | 4-Mar-19 | 8-May-19 | 6-Aug-19 | 1-Jun-20 |
| Mfgr/Assemble/Wire AC Switchgear - Fairfax GBS | 4-Mar-19 | 8-May-19 | 6-Aug-19 | 12-Jan-21 |
| Mfgr/Assemble/Wire AC Switchgear - La Brea TPSS | 7-Aug-19 | 17-Oct-19 | 15-Jan-20 | 15-Jul-20 |
| ATC: Procure/Deliver Switch Machines | 01-Jul-16 A | 21-Jul-17 A | 19-Nov-17 | 25-Feb-22 |
| COMPLETE MOCK-UP & FABRICATE CANOPY STRUCTURE - LA BREA STATION | 19-Jan-18 | 17-Feb-18 | 18-May-18 | 2-Dec-21 |
| FAB/DELIVER SOLDIER PILES / BEAMS - WESTERN TBM RETRIEVAL SHAFT | 19-Sep-17 A | 20-Nov-17 | 18-Feb-18 | 4-Nov-17 |
| FAB/DELIVER SOLDIER PILES / BEAMS - FAIRFAX STATION | 26-Jul-16 A | 30-Jul-16 A | 15-Aug-16 A | 18-Aug-16 A |
| FAB/DELIVER SOLDIER PILES / BEAMS - LA CIENEGA STATION | 23-Jan-17 A | 14-Feb-17 A | 15-May-17 A | 20-May-17 A |
| ATC: Assemble/Rack & Stack TC&C Equipment for Western | 1-Jun-18 | 28-Apr-18 | 27-Jul-18 | 14-Jul-20 |
| ATC: Assemble/Rack & Stack ATC Equipment for La Brea | 01-Sep-17 A | 5-Sep-17 A | 10-Sep-17 A | 26-Jun-20 |
| ATC: Assemble/Rack & Stack ATC Equipment for Fairfax | 8-Feb-18 | 4-Jan-18 | 4-Apr-18 | 7-Jan-21 |
| ATC: Assemble/Rack & Stack ATC Equipment for La Cienega | 6-Apr-18 | 2-Mar-18 | 31-May-18 | 18-Nov-21 |
| FABRICATE TRACK MATERIALS | 18-Mar-18 | 5-Jul-18 | 3-Oct-18 | 17-Dec-19 |
| ATC: Procure/Deliver WS Equipment & Devices | 01-Dec-15 A | 16-Nov-17 | 16-Dec-17 | 18-Oct-21 |
| ATC: Procure/Deliver Components & Materials - Western | 01-Aug-16 A | 2-Mar-18 | 31-May-18 | 14-Jul-20 |
| ATC: Procure/Deliver Components & Materials - La Brea | 01-Aug-16 A | 9-Sep-17 A | 8-Dec-17 | 26-Jun-20 |
| ATC: Procure/Deliver Components & Materials - Fairfax | 01-Aug-16 A | 9-Nov-17 | 7-Feb-18 | 7-Jan-21 |
| ATC: Procure/Deliver Components & Materials - La Cienega | 01-Aug-16 A | 5-Jan-18 | 5-Apr-18 | 18-Nov-21 |

# CRITICAL PATH NARRATIVE

The critical path for the Westside Purple Line Extension Section 1 Project begins with the procurement process for the C1045 Design/Build contract, mobilization of the design team for the selected contractor, and the start of final design for station boxes and tunnels. Final design is concurrent with the C1055 Wilshire/Fairfax Advanced Utility Relocation and C1056 Wilshire/ La Cienega Advanced Utility Relocation contracts being performed by Metro's AUR Contractors and by third party utility companies. Upon completion of advanced utility relocations, the Design/Build contractor begins installation of soldier piles, first on the north side of the Wilshire/La Brea Station box, and then on the south side. Street decking is then installed, the station structural box is excavated, and invert concrete is placed. Tunneling then begins, first driving eastbound from Wilshire/La Brea to Wilshire/Western. TBMs are removed though a retrieval shaft at Wilshire/Western, reassembled at Wilshire/La Brea, and then driven westbound to Wilshire/La Cienega. Following construction of cross passages, the critical path continues through construction of the Wilshire/La Brea station box, installation of track-work and traction power, systems integration and testing, and pre-revenue operations.

# PROJECT SCHEDULE CONTINGENCY DRAWDOWN




# PROJECT SCHEDULE CONTINGENCY DRAWDOWN ANALYSIS

The project schedule contingency drawdown curve is based on a November 8, 2023 Revenue Service Date (RSD).

# PROJECT COST STATUS

DOLLARS IN THOUSANDS

| SCC CODE | DESCRIPTION | ORIGINAL BUDGET | CURRENT BUDGET | | COMMITMENTS | | EXPENDITURES | | CURRENT FORECAST | | CURRENT BUDGET / FORECAST VARIANCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PERIOD | TO DATE | PERIOD | TO DATE | PERIOD | TO DATE | PERIOD | TO DATE | |
| 10 | GUIDEWAY & TRACK ELEMENTS | 388,294 | - | 388,294 | - | 380,970 | 2,329 | 61,103 | - | 387,938 | (356) |
| 20 | STATIONS, STOPS, TERMINALS, INTERMODAL | 440,621 | - | 440,621 | - | 447,611 | 7,255 | 89,750 | - | 473,316 | 32,695 |
| 30 | SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS | 43,323 | - | 43,323 | - | 41,556 | 898 | 4,090 | - | 44,836 | 1,513 |
| 40 | SITEWORK & SPECIAL CONDITIONS | 751,566 | - | 754,491 | 405 | 773,812 | 3,797 | 467,019 | - | 797,069 | 42,578 |
| 50 | SYSTEMS | 113,574 | - | 113,574 | - | 99,511 | 649 | 12,183 | - | 114,574 | 1,000 |
| | CONSTRUCTION SUBTOTAL (10-50) | 1,737,378 | - | 1,740,303 | 405 | 1,743,459 | 14,929 | 634,144 | - | 1,817,733 | 77,430 |
| 60 | ROW, LAND, EXISTING IMPROVEMENTS | 175,634 | - | 175,634 | - | 202,980 | - | 179,078 | - | 202,980 | 27,346 |
| 70 | VEHICLES | 160,196 | - | 160,196 | - | 98,118 | - | 5,475 | - | 108,302 | (51,893) |
| 80 | PROFESSIONAL SERVICES | 412,710 | - | 414,785 | 4,679 | 344,033 | 3,338 | 265,266 | - | 486,825 | 72,040 |
| | SUBTOTAL (10-80) | 2,485,918 | - | 2,490,918 | 5,084 | 2,388,591 | 18,267 | 1,083,962 | - | 2,615,840 | 124,922 |
| 90 | UNALLOCATED CONTINGENCY | 248,592 | - | 248,592 | - | - | - | - | - | 168,075 | (80,517) |
| 100 | FINANCE CHARGES | 375,470 | - | 375,470 | - | - | - | - | - | 331,065 | (44,405) |
| | TOTAL PROJECTS 465518 & 865518 (10-100) | 3,109,980 | - | 3,114,980 | 5,084 | 2,388,591 | 18,267 | 1,083,962 | - | 3,114,980 | - |
| | ENVIRONMENTAL/PLANNING - 405518 | 8,505 | - | 8,505 | - | 8,505 | - | 8,505 | - | 8,505 | - |
| | ENVIRONMENTAL/PLANNING - 465518 | 30,865 | - | 30,865 | - | 30,865 | - | 30,852 | - | 30,865 | - |
| | TOTAL PROJECTS 405518 & 465518 (ENV / PLAN'G) | 39,370 | - | 39,370 | - | 39,370 | - | 39,357 | - | 39,370 | - |
| | TOTAL PROJECTS 405518, 465518 & 865518 | 3,149,350 | - | 3,154,350 | 5,084 | 2,427,960 | 18,267 | 1,123,319 | - | 3,154,350 | - |

# PROJECT COST ANALYSIS

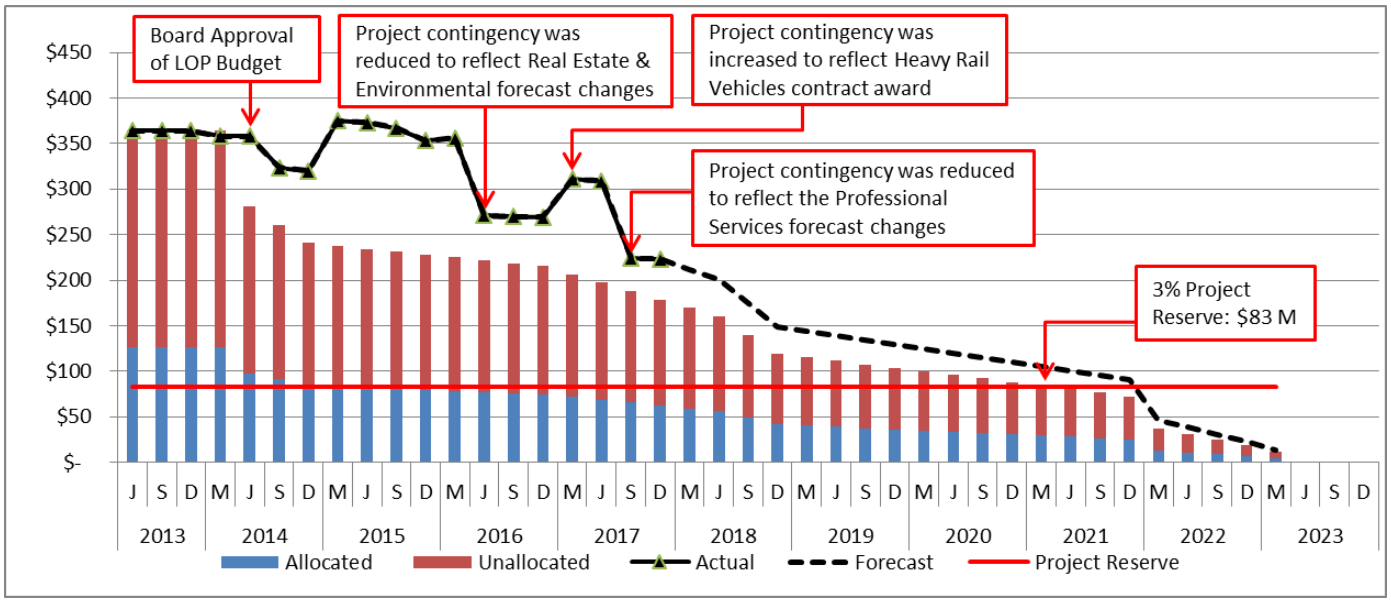
**Original Budget**
The Original Budget of $3.2 billion reflects the Board approved Life of Project Budget, July 24, 2014, plus Finance Charges of $0.4 billion.

**Current Budget and Current Forecast**
The Current Budget and Current Forecast remains the same this period at $3.2 billion.

***Commitments***
*The Commitments increased by $5.1 million primarily for the Approved FY-18 Annual Work Plans with the City of Los Angeles (Master Cooperative Agreement) and with the City of Beverly Hills (Memorandum of Agreement). The $2.4 billion in Commitments to date represents 77.0% of the Current Budget.*

***Expenditures***
*The Expenditures increased by $18.3 million primarily for costs associated with the Design/Build Contracts C1045 and C1078, City of Beverly Hills (Memorandum of Agreement), Engineering Management Services, Construction Management Support Services, and Metro Project Administration. The $1.1 billion in Expenditures to date represents 35.6% of the Current Budget.*

# PROJECT COST CONTINGENCY DRAWDOWN




# PROJECT COST CONTINGENCY DRAWDOWN ANALYSIS

The Current Budget of $3.2 billion (plus Finance Charges of $0.4 billion) includes a project cost contingency of $320.6 million or 10.2% of the total project. The project cost contingency of $320.6 million is based upon the Life of Project (LOP) Budget that was approved by the Board in July 2014. The LOP Budget also included an allocated contingency amount of $72.0 million. The allocated contingency is an amount to cover anticipated but unknown contract modifications issued by Metro where applicable to specific contracts within each Standard Cost Category (SCC).

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

The project cost contingency drawdown curve is based on a November 8, 2023 Revenue Service date.

*The allocated contingency decreased this period by $0.1 million due to four executed Contract Modifications for the Design/Build Contract C1045.*

**PROJECT COST CONTINGENCY**
**DOLLARS IN THOUSANDS**

| | Original Contingency (Budget) | Previous Period | Current Period | To-Date | Remaining Contingency (Forecast) |
|---|---|---|---|---|---|
| Unallocated Contingency | 248,592 | (80,517) | - | (80,517) | 168,075 |
| Allocated Contingency | 71,963 | (16,459) | (123) | (16,582) | 55,382 |
| **Total Contingency** | **320,555** | **(96,976)** | **(123)** | **(97,099)** | **223,456** |

# DISADVANTAGED BUSINESS ENTERPRISE (DBE)

**DISADVANTAGED BUSINESS ENTERPRISE (DBE) STATUS**

**Contract C1045 Westside Purple Line Extension - Section 1**

*(Reported Data as of September 2017)*

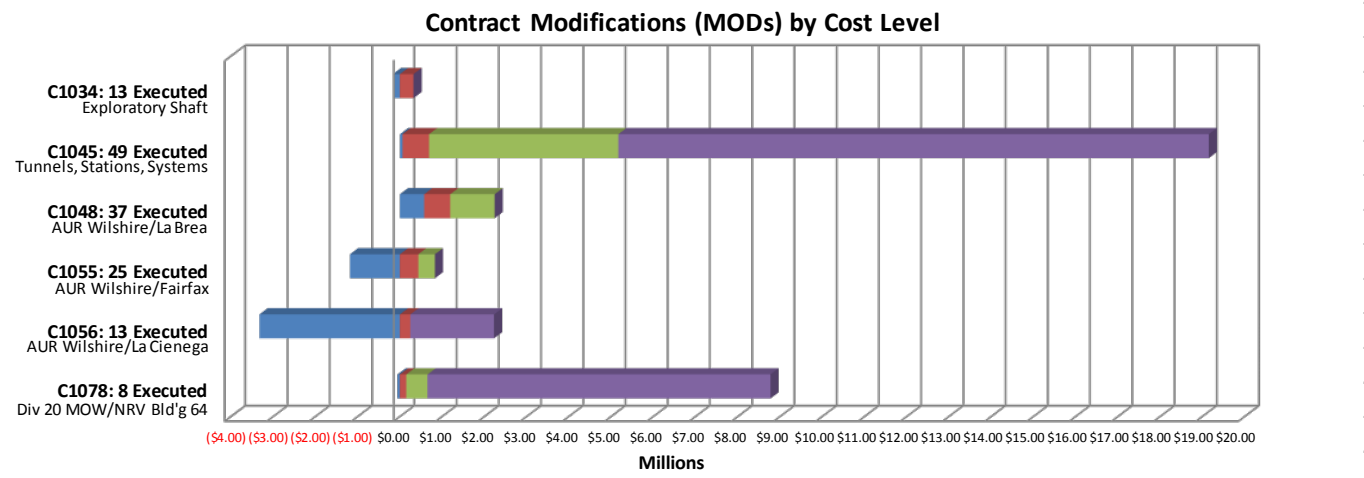
| | |
|---|---|
| • **DBE Goal – Design**<br>A numerically expressed percentage of funds apportioned to Design Contracts and is calculated based upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area. | 20.00% |
| • **Current DBE Commitment – Design**<br>Total DBE Committed Dollars divided by Total Contract Value for Design or Construction. | *$12,991,612.35*<br>(20.25%) |
| • **Current DBE Participation**<br>Total amount paid to date to DBEs divided by the amount paid to date to Prime. | *$11,485,526*<br>*(18.13%)* |
| Fourteen (14) Design DBE subcontractors have been identified to-date. | |
| | |
| • **DBE Goal – Construction**<br>A numerically expressed percentage of funds apportioned to Construction Contracts and is calculated based upon the relative availability of DBE firms as compared to all firms in the relevant. | 17.00% |
| • **Current DBE Commitment – Construction**<br>Contract commitment divided by current contract value for Construction. | *$261,757,489*<br>(17.00%) |
| • **Current DBE Participation**<br>Total amount paid to date to DBEs divided by the amount paid to date to Prime. | *$64,309,414*<br>*(13.59%)* |
| *One hundred-one (101) Construction DBE subcontractors have been identified to-date.* | |

# PROJECT LABOR AGREEMENTS (PLA) STATUS

**Contract C1045 Westside Purple Line Extension, Section 1 Design-Build**
(Reporting Data as of August 2017)

| | |
|---|---|
| • **Targeted Worker Goal**<br>Construction work to be performed by residents from Economically Disadvantaged Area in the United States | 40.00% |
| • **Targeted Worker Current Participation** | 66.32% |
| • **Apprentice Worker Goal**<br>Construction work to be performed by Apprentices | 20.00% |
| • **Apprentice Worker Current Participation** | 16.91% |
| • **Disadvantaged Worker Goal**<br>Construction work to be performed by Disadvantaged Workers who are residents of the United States | 10.00% |
| • **Disadvantaged Worker Current Participation** | 6.91% |

# SUMMARY OF CONTRACT MODIFICATIONS




| | C1034<br>13 Executed | C1045<br>49 Executed | C1048<br>37 Executed | C1055<br>25 Executed | C1056<br>13 Executed | C1078<br>8 Executed | Total |
|---|---|---|---|---|---|---|---|
| Under $100K | (164,288) | 62,392 | 574,448 | (1,179,119) | (3,324,793) | (57,435) | **(4,088,795)** |
| $100K to $250K | 321,000 | 626,791 | 616,809 | 436,190 | 245,024 | 151,324 | **2,397,138** |
| $250K to $1M | - | 4,482,506 | 1,050,980 | 390,709 | - | 500,798 | **6,424,993** |
| Over $1M | - | 13,979,069 | - | - | 1,983,179 | 8,121,591 | **24,083,839** |
| **Total Contract MODs** | **156,712** | **19,150,758** | **2,242,237** | **(352,220)** | **(1,096,590)** | **8,716,278** | **28,817,175** |
| **Contract Award Amount** | **6,487,020** | **1,636,418,585** | **6,181,000** | **14,430,000** | **20,250,000** | **52,830,310** | **1,736,596,915** |
| **% of Contract MODs** | **2.4%** | **1.2%** | **36.3%** | **-2.4%** | **-5.4%** | **16.5%** | **1.7%** |

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

Thirteen Contract MODs with a total value of $0.2 million have been executed since the award of Contract C1034 – Exploratory Shaft Construction by Innovative Construction Solutions (ICS). The contract has been completed and is closed out.

*Forty-nine Contract MODs with a total value of $19.2 million have been executed since the award of Contract C1045 – Tunnels, Stations, Trackwork, Systems and Systems Integration Testing by Skanska - Traylor - Shea, a Joint Venture.*

Thirty-seven Contract MODs with a total value of $2.2 million have been executed since the award of Contract C1048 – Advanced Utility Relocations at Wilshire/La Brea by Metro Builders & Engineering Group, LTD. The contract has been completed and is closed out.

Twenty-five Contract MODs with a total value of <$0.4> million have been executed since the award of Contract C1055 – Advanced Utility Relocations at Wilshire/Fairfax by W. A. Rasic Construction Company, Inc. The contract has been completed and is closed out.

Thirteen Contract MODs with a total value of <$1.1> million have been executed since the award of Contract C1056 – Advanced Utility Relocations at Wilshire/La Cienega by Steve Bubalo Construction Co. *The contract has been completed and is closed out.*

Eight Contract MODs with a total value of $8.7 million have been executed since the award of Contract C1078 – Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building Location 64.

(IN MILLIONS OF DOLLARS)

| SOURCE | (A) ORIGINAL BUDGET | (B) TOTAL FUNDS ANTICIPATED | (C) TOTAL FUNDS AVAILABLE | (D) COMMITMENTS $ | (D/B) COMMITMENTS % | (E) EXPENDITURES $ | (E/B) EXPENDITURES % | (F) BILLED TO FUNDING SOURCE $ | (F/B) BILLED TO FUNDING SOURCE % |
|---|---|---|---|---|---|---|---|---|---|
| FEDERAL - SECTION 5309 NEW STARTS | $1,250.000 | $1,250.000 | $365.000 | $1,250.000 | 100% | $320.034 | 26% | $317.122 | 25% |
| FEDERAL CMAQ | $12.171 | $12.171 | $12.171 | $12.171 | 100% | $12.171 | 100% | $12.171 | 100% |
| FEDERAL SECTION 5339 - ALTERNATIVES ANALYSIS | $0.512 | $0.512 | $0.512 | $0.512 | 100% | $0.512 | 100% | $0.512 | 100% |
| MEASURE R - TIFIA LOAN | $856.000 | $856.000 | $340.707 | $345.843 | 40% | $147.928 | 17% | $123.036 | 14% |
| MEASURE R 35% | $869.178 | $874.178 | $593.732 | $733.218 | 84% | $556.458 | 64% | $506.370 | 58% |
| STATE STIP RIP | $2.568 | $2.568 | $2.568 | $2.568 | 100% | $2.568 | 100% | $2.568 | 100% |
| STATE CAPITAL PROJECT LOANS - OTHERS * | $83.648 | $83.648 | $83.648 | $83.648 | 100% | $83.648 | 100% | $54.500 | 65% |
| CITY OF LOS ANGELES | $75.273 | $75.273 | $0.000 | $0.000 | 0% | $0.000 | 0% | $0.000 | 0% |
| TOTAL | $3,149.350 | $3,154.350 | $1,398.338 | $2,427.960 | 77.0% | $1,123.319 | 35.6% | $1,016.279 | 32.2% |

ORIGINAL BUDGET BASED ON JULY 2014 BOARD APPROVED LOP BUDGET

* OTHERS INCLUDE TDA ADMINISTRATION ($4.1M), LTF GENERAL REVENUES ($1.8M), AND LEASE REVENUES ($37.8M)

# FINANCIAL/GRANT STATUS

## STATUS OF FUNDS ANTICIPATED

**FEDERAL SECTION 5309 NEW STARTS:** FTA Grant CA-03-0824 for $65.0 million was awarded on June 2, 2014. FTA Grant CA-03-0824-01 for $100.0 million was awarded on August 10, 2015. FTA Grant CA-2016-017 for $100.0 million was awarded on September 8, 2016. FTA Grant CA-2016-017 Amendment No. 1 for $100.0 million was awarded on September 22, 2017. Funds are available for drawdown.

**FEDERAL SECTION 5339 ALTERNATIVE ANALYSIS:** FTA Grant CA-39-0006 of $0.5 million was awarded on July 25, 2014. Funds are available for drawdown.

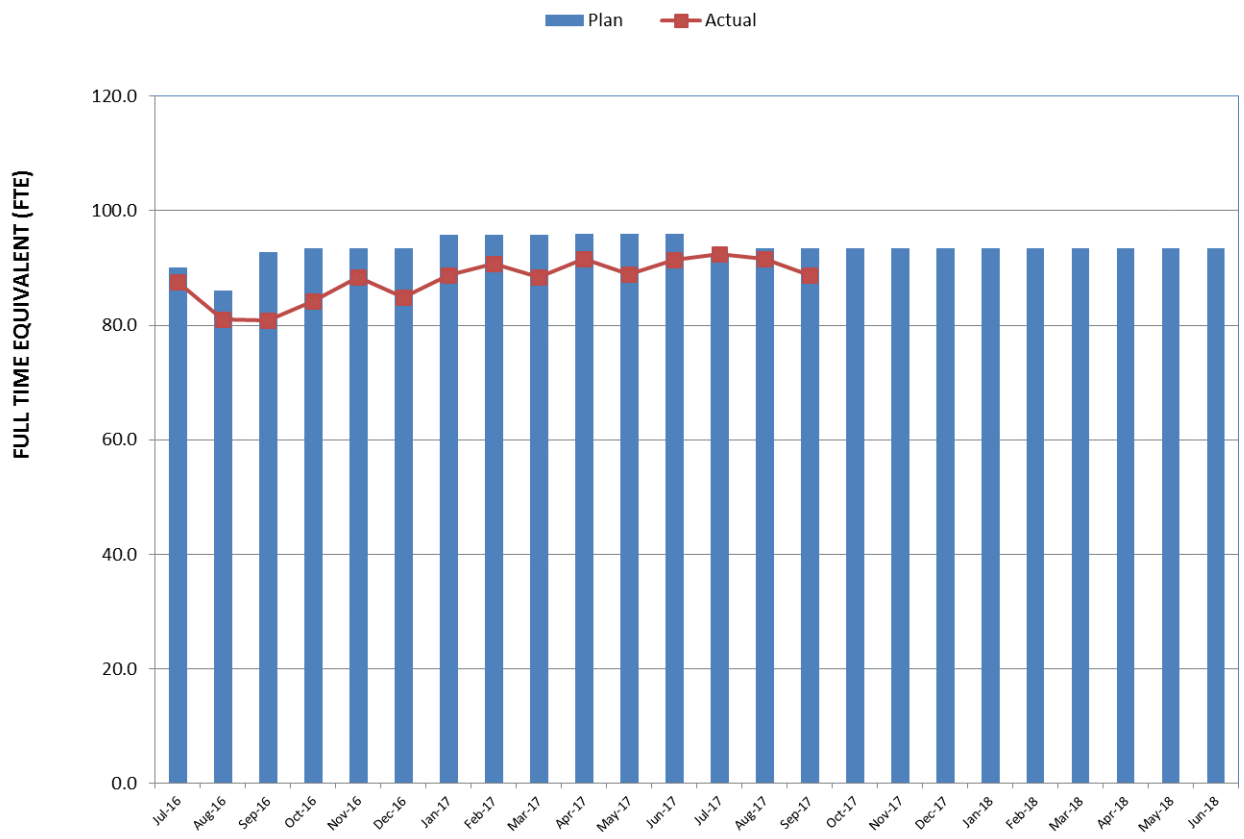
**MEASURE R – TIFIA LOAN (Transportation Infrastructure Finance & Innovation Act):** TIFIA Loan was executed on May 21, 2014 for $856.0 million. $340.7 million funds are available for drawdown. First requisition for $82.2 million and second requisition for $40.8 million were submitted in June and July 2017, respectively.

**MEASURE R 35%:** $593.7 million have been allocated to the Project through FY18. Funds are available for drawdown.

**STATE STIP RIP:** State grant application of $8.4 million, of which $2.6 million has been allocated to this project, was awarded on July 26, 2007. Funds are available for drawdown.

**CMAQ (Congestion Mitigation & Air Quality):** FTA Grant CA-95-X264 for $12.2 million was awarded on July 27, 2015. Funds are available for drawdown.

# STAFFING STATUS
## Total Project Staffing – FTES



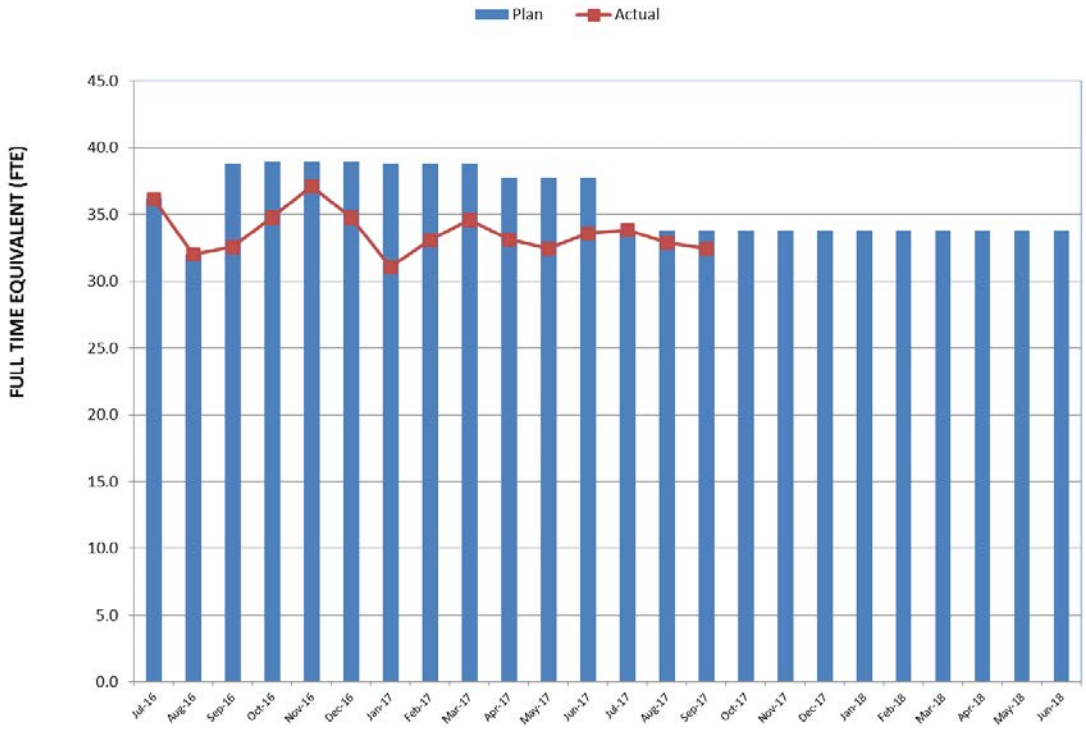

# TOTAL PROJECT STAFFING

The overall FY18 Total Project Staffing Plan averages 93.4 FTEs per month.

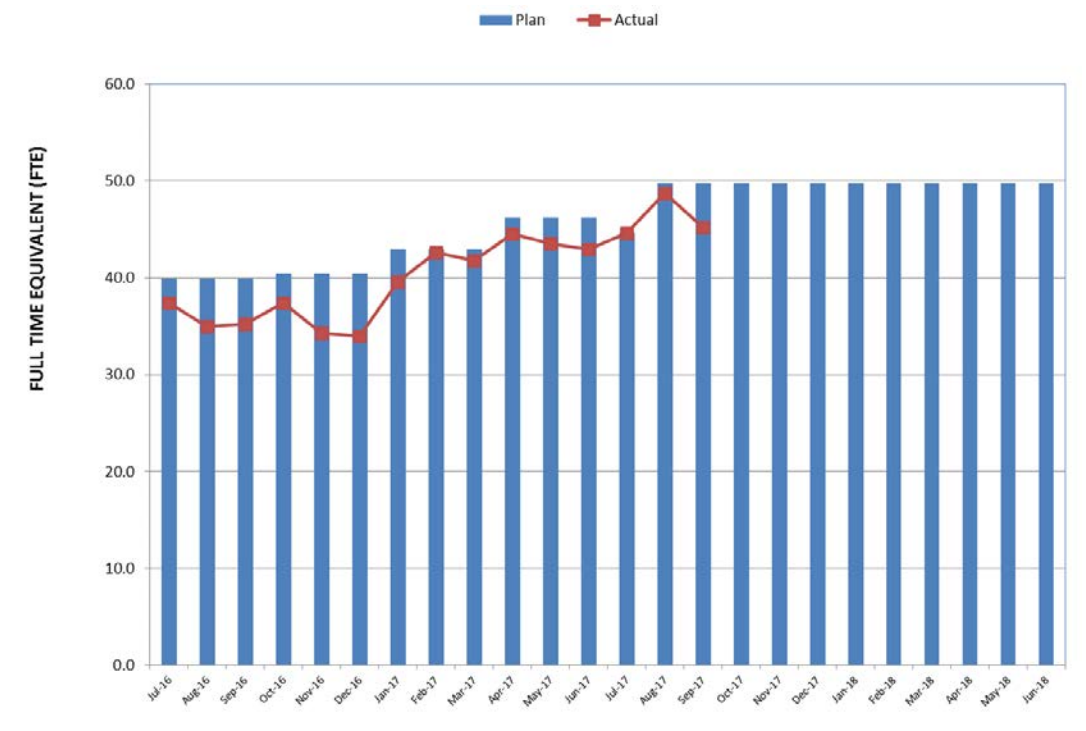
*For September 2017, there were a total of 32.5 FTEs for MTA's Project Administration Staff and 56.2 FTEs for Consulting Staff. The total project staffing for September 2017 was 88.7 FTEs.*

# STAFFING STATUS (Continued)

## METRO STAFFING – FTES

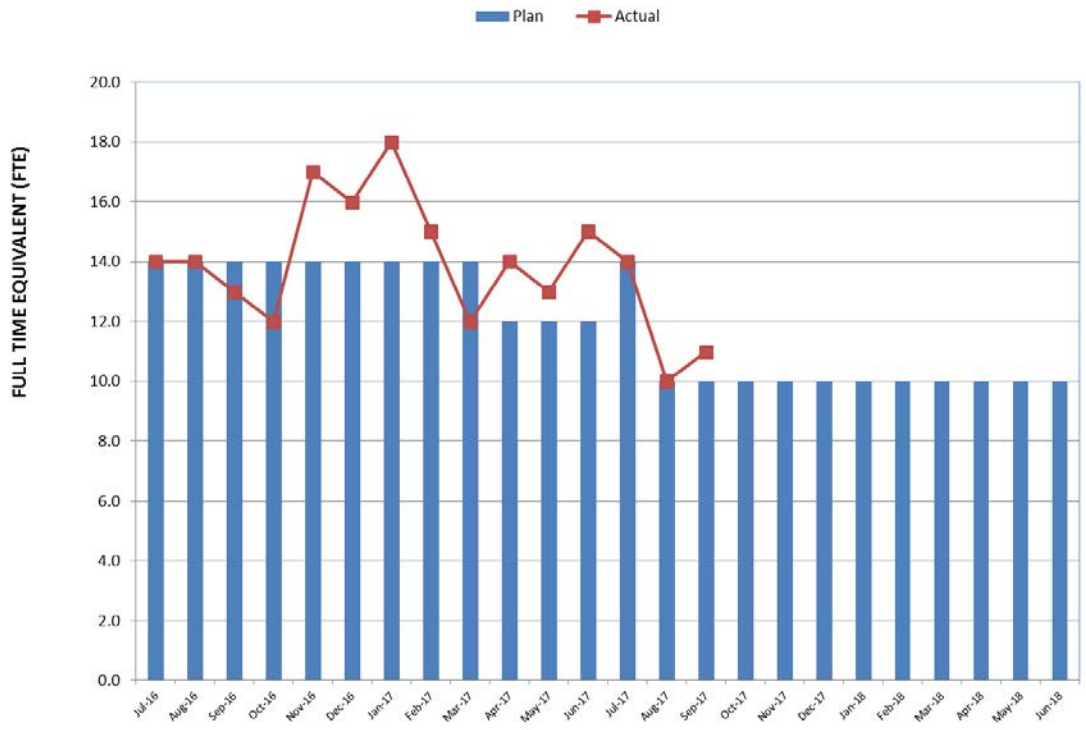



## CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONSULTANT – FTES



# STAFFING STATUS (Continued)

## ENGINEERING MANAGEMENT SERVICES CONSULTANT – FTES



# REAL ESTATE STATUS

| Purple Line Extension Section 1 - Real Estate Status Summary | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Description | Number of Parcels | Certified | Appraisals Completed | Offers Made | Agreements/ Settlements Signed | Relocations | | Parcels Available |
| | | | | | | Required | Completed | |
| Full Takes | 9 | 9 | 9 | 9 | 8 | 109 | 109 | 9 |
| Part Takes | 6 | 6 | 6 | 6 | 6 | 0 | 0 | 6 |
| TCE | 4 | 4 | 4 | 4 | 2 | 0 | 0 | 4 |
| **Total Parcels** | **19** | **19** | **19** | **19** | **16** | **109** | **109** | **19** |

Metro has possession of all the parcels by either acquisition, possession and use agreements or stipulations. The C1045 contractor has possession of all properties needed to construct the Project. The purchase agreement for Parcel W-6104 (Chalmers) at Division 20 was approved by the Metro Board in June 2016. A right-of-entry agreement has been executed between Chalmers and Metro in order to proceed with construction work in advance of closing escrow.

# QUALITY ASSURANCE STATUS

**C1045 – Tunnels, Stations, Trackwork, Systems and Systems Integration Testing**

- Attended weekly Project staff meetings and progress meetings with the Contractor Skanska/Traylor/Shea (STS).
- Attended bi-weekly Quality Meeting with Contractor's Quality Department.
- Ongoing discussions and coordination with the Engineering Management Services Consultant (EMSC) and Construction Management Support Services Consultant (CMSSC) support staff for quality oversight.
- Reviewed daily inspection reports from the Contractor/Field Technician and CMSSC oversight inspection personnel. Inspections show that the work is predominately compliant.
- Reviewed and provided comments on quality related submittals construction work plan, project specifications, product data and quality manuals.
- Continue to track structural support members which require modification through open items list and RFI process (Wilshire/La Brea and Wilshire/Fairfax Support of Excavation).
- Metro QAC conducted surveillances of the Contractors implementation of their Quality procedures at the Wilshire/ La Brea and Wilshire/Fairfax Support of Excavation including precast plants for fabrication of deck panels and tunnel ring segments.
- Processed 16 surveillances, 7 Quality Action Requests and 8 Nonconformance Reports and 1 Corrective Action Request.

**C1078 – Division 20 MOW and NRV Building Location 64**

- Attended weekly Project Staff Meetings and Progress Meetings with the Contractor.
- Reviewed and provided comments on quality related submittals.
- Reviewed daily inspection reports from Contractor's quality assurance inspection team. Inspections show that the work is predominately compliant.
- *Engaged in concrete materials testing of building foundation members including spread and continuous footings.*

# ENVIRONMENTAL STATUS

- Conducted field environmental monitoring and spot inspections for construction noise, vibration, stormwater Best Management Practices (BMPs), dust and cultural resources for C1045, C1078, and Third Party work activities.
- Attended weekly Project staff meetings and progress meetings with the Contractor Skanska/Traylor/Shea (STS) and adjacent city jurisdictions.
- Conducted weekly Environmental Compliance Progress Meetings and monthly Environmental Mitigation (MMRP) update meeting with C1045 contractor.
- Reviewed C1045 and C1078 Contractor submittals including: Waste Management Plan, Wastewater Management Plan, Sustainability Plan and Quarter 3 Noise Control and Monitoring Plan.
- Submitted Final Noise and Vibration Technical Memo to the FTA regarding the use of resilient rail fasteners and low impact cross overs.
- *Continued evaluation and noise data collection related to ventilation system noise levels at Ogden yard including coordination with City of Los Angeles Police Commissioner.*
- *Researched and compiled supporting soil classification documentation related to increase disposal cost claims by C1045 contractor.*
- *Worked with the City of Beverly Hills Independent Compliance Monitor (ICM) to establish reporting protocols.*
- *Evaluated 2015 studies and recent noise data to support increased threshold values for noise receptor at Wilshire/La Cienega Station.*
- *Continued coordination with Metro and Contractor staff to determine FTA requirements for proposed extension of center muck shaft at Wilshire/La Brea.*
- *Attended Board of Public Works Meeting for Western Street closures.*
- *Finalized MMRP 18$^{th}$ Quarterly updates and submitted final report to the FTA.*
- *Cogstone paleo monitors found two fossils at the Wilshire/La Brea Station excavation. The first was a large chunk of wood and the second was a small fragment of a large mammal bone. All finds were reported to the FTA.*

# CONSTRUCTION RELATIONS STATUS

- *Produced and distributed eight construction work notices for advance utility relocations and construction activities*.
- *Held Meetings and made Project Presentations at the following: Wilshire Center Koreatown Neighborhood Council; Mid City West Community Council, Elected Officials Briefing, Sycamore Square Neighborhood Association, Construction Community Meetings and various stakeholders.*
- *Construction issues: Noise complaints near Wilshire/Western. Business mitigation measures put in place to address complaints from Young Dong Restaurant.*
- *Visited and updated businesses and residences at future station locations to discuss jet grouting, Wilshire/Fairfax Station excavation, tie-in work at Wilshire/Western Station, decking installation and closures at Wilshire/La Cienega Station.*
- *Continued outreach for Tunnel Boring Machine Contest. Visited libraries and schools to encourage students to participate. Contest has been extended through November 17, 2017.*
- Attended the following meetings: Construction Management, Advanced Utility Relocations, Construction Relations, Environmental Mitigations, STS Third Party Workshop, Beverly Hills MOA and AUR, Marketing, Social Media, Eat, Shop, Play, Bus Relocations and Stops, DOT/Elected Officials, Beverly Hills Traffic Coordination and John Burroughs Middle School Traffic Safety Meeting.
- Updated website, Facebook, Twitter as needed.
- Continued with the “Eat, Shop, Play Spotlight” campaign to advertise and promote businesses that participate in ESP Wilshire.

# CREATIVE SERVICES STATUS

- Responded to RFIs and submittals.
- Participated in Design Build Workshops and document reviews.
- Facilitated artwork proposal development for nine locations.
- Continued design development for Wilshire Customer Center artwork relocation.
- *Continued design development for MOW Building Location 64.*

# SAFETY & SECURITY STATUS

- *The design build contractor (C1045) reported two recordable injuries during October 2017. Both cases involved work restrictions and are therefore DART cases.*

- Design Builder's construction activities (both day and swing) and the C1078 Maintenance of Way Building site continue to be monitored to document contractor compliance with contract specifications.

- Metro Safety staff attended weekly Tool Box Meetings, Progress Meetings, readiness reviews, and other project meetings to evaluate Contractors Safety Program compliance with contract requirements.

- *Metro Construction Safety hosted Monthly All Hands Safety Meeting for all Westside-Purple Line Extension Contractors (including environmental contractors) on October 24, 2017.*

- Construction Safety staff continue to work 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.

- *September 2017 Contractor Work Hours (Design & Construction): 75,038*

- *Contractor - Project to Date Work Hours (Design & Construction)(through 9/30/2017): 1,685,891*

- *Total Project to Date Work Hours (Contractor & the IPO Staff) (through 9/30/2017): 2,151,585*

- Project to Date Recordable Injury Rate: 0.7 (Seven Recordable Injuries)(each rate is per 200,000 work hours)(National Rate: 2.8)

- *Project to Date Total Days Away (DART) Injury Rate: 0.4* (Four Time Away From Work (DART) Injuries)(National Rate: 1.7)

- *Project to Date Total Days Away Rate: 37.1 (399 Days Away From Work)* (No National Rate Published)

- National Rates for Heavy and Civil Construction (NAICS Code 237) are for Calendar Year 2015, published by USBLS in October 2016.

# THIRD PARTY AGREEMENT STATUS

| Third Party | Type of Agreement | Forecast Execution Date | Required Need Date | Status/ Comments |
|---|---|---|---|---|
| City of Los Angeles (LA) | Master Cooperative Agreement | N/A | N/A | Parties will work under 2003 MCA. |
| City of Beverly Hills (BH) | Memorandum of Agreement (La Cienega only) | 9/14 (AUR)<br><br>02/17 (D/B) | 9/14 (AUR)<br><br>1/17 (D/B) | City of Beverly Hills approved the MOA for the C1056 Wilshire/La Cienega AUR contract on August 19, 2014. City Council approved the MOA for the C1045 Design/Build contract on February 21, 2017. Required Need Date reflects the early contractual turnover date to C1045 contractor for all areas at Wilshire/La Cienega. |
| Los Angeles Department of Water and Power | Master Cooperative Agreement | N/A | N/A | Metro and LADWP will continue to work under the terms of the previous MCA. |
| Los Angeles County Public Works | Master Cooperative Agreement | 4/11 | 3/12 | Executed |
| Caltrans | Master Cooperative Agreement | 8/11 | 3/12 | Executed |
| Private Utilities | Utility Cooperative Agreement | 9/14 | N/A | Metro is working with affected third party utilities under existing agreements except for Qwest/Century Link and Level 3. Draft agreements for Qwest/Century Link and Level 3, and a new agreement for SCE are all under review. In absence of an agreement, work is being performed via work orders. |

# ADVANCED UTILITY RELOCATION STATUS

- All advanced utility relocations by third parties have been completed.

# PEAK HOUR AND NIGHTTIME CONSTRUCTION VARIANCES

Metro is actively pursuing extended hour variances/exemptions to accommodate the Project needs. Metro staff is working with the City of Los Angeles Bureau of Engineering and the Los Angeles Police Commission to obtain Peak Hour Exemptions and Nighttime Construction Variances. Current efforts center around extending the existing nighttime noise variances to accommodate advanced utility relocations at the Wilshire/La Brea and Wilshire/Fairfax Station sites as well as obtaining new nighttime noise variances and peak hour exemptions to allow night work and weekend work to accommodate the Wilshire/La Brea, Wilshire/Fairfax and Wilshire/Western piling operations for the Design/Build contractor.

- A Peak Hour Exemption for the center muck shaft at Wilshire/La Brea Station has been approved by the City of Los Angeles for the dates of April 13, 2017 through November 17, 2017.
- *A Peak Hour Exemption for the sewer relocation at Wilshire/Western Station has been approved by the City of Los Angeles for the dates of September 25, 2017 through October 27, 2017*
- The Nighttime Noise Variance for the Wilshire/La Brea Advanced Utility Relocation work has been extended to November 18, 2017 by the Los Angeles Police Commission.
- The Nighttime Noise Variance for the Wilshire/Fairfax Advanced Utility Relocation work has been extended to December 16, 2017 by the Los Angeles Police Commission.
- The Nighttime Noise Variances for the five yard locations in the City of Los Angeles (North La Brea, South La Brea, Fairfax, Western and Crenshaw) have been extended to January 15, 2018 by the Los Angeles Police Commission.
- The Nighttime Noise Variance for the decking and excavation work at Wilshire/La Brea Station has been extended to January 30, 2018 by the Los Angeles Police Commission.
- A Nighttime Noise Variance for decking and excavation work at Wilshire/Fairfax Station has been extended to November 19, 2017 by the Los Angeles Police Commission.
- A Nighttime Noise Variance for the Venice Yard in the City of Los Angeles has been approved for the dates of July 20, 2017 through November 20, 2017.
- A Nighttime Noise Variance for utility relocations at the Wilshire/Western Station has been approved for the dates of September 3, 2017 through February 1, 2018.
- *A Nighttime Noise Variance for piling operations and jet grouting at the Wilshire/Western Station has been approved for the dates of October 11, 2017 through February 11, 2018.*

# CHRONOLOGY OF EVENTS

| | |
|---|---|
| June 2007 | Began Alternatives Analysis study |
| January 2009 | Board approval of Alternatives Analysis study and next phase |
| February 2009 | Began Draft Environmental Impact Statement / Report (EIS / EIR) |
| October 2010 | Board approval of Draft EIS / EIR and selection of locally preferred alternative |
| January 2011 | FTA approval to enter Preliminary Engineering |
| May 2011 | Began Preliminary Engineering |
| April 2012 | Board certification of Final EIS / EIR and adoption of project |
| July 2012 | Completion of Exploratory Shaft final design |
| August 2012 | FTA Record of Decision |
| September 2012 | Began Real Estate Acquisition |
| November 2012 | Began Final Design - C1048 - Advanced Utility Relocations contract – Wilshire/La Brea |
| November 2012 | Began Final Design - C1055 - Advanced Utility Relocations contract – Wilshire/Fairfax |
| November 2012 | Issued RFQ for C1045 Design / Build contract |
| December 2012 | Began Final Design - C1056 - Advanced Utility Relocations contract – Wilshire/La Cienega |
| January 2013 | Began C1034 Exploratory Shaft construction |
| February 2013 | Received RFQ responses for C1045 Design / Build contract |
| June 2013 | Issued RFP for C1045 Tunnels, Stations, Trackwork, Systems and Systems Integration Testing |
| June 2013 | Beginning of C1055 AUR Wilshire/Fairfax Bid Period |
| July 2013 | Submitted draft FFGA application |
| July 2013 | Completed Final Design - C1048 - Advanced Utility Relocations contract – Wilshire/La Brea |

# CHRONOLOGY OF EVENTS (Continued)

| | |
|---|---|
| July 2013 | Submitted TIFIA loan application |
| August 2013 | Began C1048 Advanced Utility Relocations contract – Wilshire/La Brea |
| August 2013 | NTP for Construction Management Support Services Contract |
| January 2014 | Submitted application to FTA requesting an FFGA |
| January 2014 | Received RFP Proposals for Contract C1045 |
| February 2014 | Beginning of C1056 AUR Wilshire/La Cienega Bid Period |
| May 2014 | FTA awarded FFGA |
| May 2014 | Received TIFIA Loan |
| June 2014 | Began C1055 Advanced Utility Relocations at Wilshire/Fairfax |
| July 2014 | Metro Board approved staff recommendation to award Contract C1045 and approved Life-of-Project Budget |
| September 2014 | Issued Invitation to Bid for Contract C1078 |
| October 2014 | Issued C1056 Contract Award |
| November 2014 | Issued C1045 Contract Award |
| January 2015 | Issued C1045 Contract Notice to Proceed |
| January 2015 | Issued C1056 Contract Notice to Proceed |
| February 2015 | Received Contract C1078 Bids |
| August 2015 | Issued C1078 Contract Award |
| September 2015 | Issued C1078 Contract Notice to Proceed |
| October 2015 | Contract C1055 achieved Substantial Completion |
| December 2015 | Began piling operations for Wilshire/La Brea Station |
| June 2016 | Began deck beam and decking operations for Wilshire/La Brea Station |
| August 2016 | Began piling operations for Wilshire/Fairfax Station |
| August 2016 | Contract C1056 achieved Substantial Completion |

# CHRONOLOGY OF EVENTS (Continued)

| | |
|---|---|
| February 2017 | Began deck beam and decking operations for Wilshire/Fairfax Station |
| March 2017 | Began piling operations for Wilshire/La Cienega Station |
| June 2017 | Decking operations for Wilshire/Fairfax Station are complete |
| September 2017 | Began utility relocation work at the Wilshire/Western site |
| *October 2017* | *Began street decking for Wilshire/La Cienega Station.* |

# CONTRACT C1045 STATUS

**Description: Westside Purple Line Extension Design-Build**

**Contractor: SKANSKA - TRAYLOR - SHEA**

**Contract No.** **C1045**

**Status as of:** **October 27, 2017**

## Progress / Work Completed:

- Wilshire/La Cienega Station piling operation complete
- Wilshire/La Cienega Station street decking commenced

## Major Activities (In Progress):

- Wilshire/Western utility existing structure potholing
- Wilshire/La Brea Station excavation and dewatering
- Wilshire/Fairfax excavation continues
- Wilshire/Fairfax strut and waler installation
- Wilshire/La Cienega street decking
- Wilshire/La Cienega instrumentation installation
- Tunnel instrumentation installation along Reach 1
- Tunnel Boring Machine (TBM) currently in transit to US

## Areas of Concern:

Dewatering and utility hanging (gas, storm drain, sewer) activities have impacted Wilshire/La Brea Station excavation. Schedule recovery efforts have been implemented to mitigate the impacts experienced with the Wilshire/La Brea Station excavation operation. Contract Modification 45, which is the advancement of critical work at La Brea Station, has been executed and the Wilshire/La Brea Station excavation effort is scheduled to complete in November 2017.

## Major Activities Next Period:

- Wilshire/Western Stage 1 Work Traffic Control Plan implemented
- Wilshire/La Brea Station mud mat installation
- Wilshire/Fairfax Station excavation continues
- Wilshire/Fairfax Station under deck strut installation continues
- Wilshire/La Cienega street decking continues
- Tunnel instrumentation installation along Reach 1 continues

## Schedule Summary:

| | |
|---|---|
| Date of Award: | 11/04/14 |
| Notice to Proceed: | 01/12/15 |
| Original Contract Duration: | 3250 CD |
| Current Contract Duration: | 3250 CD |
| Elapsed Time from NTP: | 1019 CD |

| | Original Contract Dates | Time Extension | Current Contract | Forecast | Variance CDs |
|---|---|---|---|---|---|
| Notice to Proceed (Estimated) | 01/12/15 | 0 | 01/12/15 | 01/12/15 | 0 |
| Milestone 1: Substantial Completion | 06/09/23 | 0 | 06/09/23 | 06/09/23 | 0 |
| Milestone 2: Stations available to UFS | 10/07/22 | 0 | 10/07/22 | 10/07/22 | 0 |
| Milestone 3: Start of Integration Testing to ROC | 01/10/23 | 0 | 01/10/23 | 01/10/23 | 0 |
| Milestone 4: Demobilization | 12/06/23 | 0 | 12/06/23 | 12/06/23 | 0 |
| Milestone 5: Temporary Construction Easements | 01/10/23 | 0 | 01/10/23 | 01/10/23 | 0 |

## Physical Percent Complete:

Physical completion: 22.89%*

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

## Cost Summary:

| | $ In millions |
|---|---|
| 1. Award Value: | 1,636.4 |
| 2. Executed Modifications: | 19.2 |
| 3. Approved Change Orders: | 0.0 |
| 4. Current Contract Value (1+2+3): | 1,655.6 |
| 5. Incurred Cost: | 611.8 |

# CONTRACT C1078 STATUS

**Description: Building Location 64 (MOW/NRV)**
**Contractor: Clark Construction**

**Contract No.** **C1078**
**Status as of:** **October 27, 2017**

## Progress / Work Completed:

- Artwork: Artist presentation received. Non-standard materials under review by Metro
- Temporary power pole in place. LADWP to energize in November 2017
- Construction banner coordination underway
- Real Estate: Property exchange agreement between Metro and Chalmers currently in escrow. Targeting to close escrow in December 2017
- Awaiting final signature for the COLA access road and track easement
- Right of Entry agreement being drafted through Metro Legal in parallel with the exchange agreement
- Environmental: Task order being prepared for groundwater remediation
- Lucky Brand Jeans: formwork for the retaining wall compete
- Storm Drain Relocation at Santa Fe Ave complete
- Elevator jack casings complete

## Areas of Concern:

- Access to C1045 Contractor of Dec 17, 2019 continues to be monitored and tracked. No impact at this time.

## Major Activities (In Progress):

- Contractor continues design development
- Foundation rebar placement and concrete pours ongoing
- Inspection pit excavation, shoring, and methane barrier installation ongoing
- Processing CN-00011: Schedule impacts to 3rd Party contractor work - Pending Cost Schedule Proposal (CSP), Time Impact Analysis (TIA), and Independent Cost Estimate (ICE)
- Processing CN-00012: City of Los Angeles access gate - CN issued to the Contractor. Pending CSP clarification
- Processing CN-00013: AST Leak Detection and Remote Lubrication Fill/Extract Station - CN issued. Pending CSP and ICE
- Processing CN-00015: Additional Sidewalk - CN issued. Pending CSP and ICE
- Processing CN-00016: Additional street lights, trees, and drip irrigation - CN issued. Pending CSP and ICE
- Processing CN-00018: Storm Drain Differing Site Conditions - CN to be issued to Contractor

## Major Activities Next Period:

- Foundation layout and concrete pours continue
- Deep plumbing installation begins
- Structural steel fabrication continues

## Schedule Summary:

| | |
|---|---|
| Date of Award: | 08/03/15 |
| Notice to Proceed: | 09/30/15 |
| Original Contract Duration: | 853 CD |
| Current Contract Duration: | 1,023 CD |
| Elapsed Time from NTP: | 758 CD |

| | Original Contract Dates | Time Extension | Current Contract | Forecast | Variance CDs |
|---|---|---|---|---|---|
| Notice to Proceed (Estimated) | 09/30/15 | 0 | 0 | 09/30/15 | 0 |
| Milestone 1: Substantial Completion | 01/30/18 | 170 | 1,023 | 07/19/18 | -170 |
| | | | | | |

## Physical Percent Complete:

Physical completion: 19.66%

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

## Cost Summary:

| | $ In millions |
|---|---|
| 1. Award Value: | $ 52.8 |
| 2. Executed Modifications: | $ 8.7 |
| 3. Approved Change Orders: | $ 1.2 |
| 4. Current Contract Value (1+2+3): | $ 62.7 |
| 5. Incurred Cost: | $ 17.4 |

# CONSTRUCTION PHOTOGRAPHS

*Under Deck Excavation at Wilshire/La Brea Station*

*TBMs being shipped to the United States*

# 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 |
| DB | 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 |
| HMM | Hatch Mott MacDonald |
| 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 |
| LRV | Light Rail Vehicle |
| 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 |

# APPENDIX

## LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| PEER | Permit Engineering Evaluation Report |
| PIP | Project Implementation Plan |
| PLA | Project Labor Agreement |
| 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 |
| RLPE | Red Light Photo Enforcement |
| 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 |
| *SBCC* | *Steve Bubalo Construction Co* |
| 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 |
| SOE | Support of Excavation |
| SOQ | Statement of Qualification |
| SOV | Schedule Of Value |
| SOW | Statement Of Work |

# APPENDIX

## LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| SP | Special Provision |
| SSMP | Safety and Security Management Plan |
| STB | Surface Transportation Board |
| STIP | State Transportation Improvement Program |
| STP | Surface Transportation Program |
| 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 |
| 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 |