Los Angeles County
Metropolitan Transportation Authority

# Westside Purple Line Extension

## Section 1 Project

MONTHLY PROJECT STATUS REPORT
JULY 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).

**JULY 2017**

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# Westside Purple Line Extension Section 1 Project — July 2017
# Monthly Project Status Report

## PROJECT SUMMARY

**LOCATION:** Los Angeles / Beverly Hills
**DESIGN CONSULTANT:** WSP USA Inc.

**CONSTRUCTION MANAGEMENT CONSULTANT:** WEST, a Joint Venture
**CONTRACTOR:** Skanska, Traylor and Shea, a Joint Venture

**Lowering Level C Strut at Wilshire/La Brea Station**

**WORK COMPLETED PAST MONTH**

- C1045 Wilshire/La Brea – Level B walers & struts complete
- C1045 Wilshire/La Brea Station excavation continues (Level C complete)
- C1045 Wilshire/La Brea tie-back and strut installation continues (Level C walers & struts)
- C1045 Wilshire/Fairfax – Steady-state traffic controls implemented
- C1045 Wilshire/Fairfax installation of temporary ventilation system continues
- C1045 Wilshire/Fairfax utility hanging below the deck panels continues
- C1045 Wilshire/La Cienega piling installation on-going (Stage 2)
- C1045 Wilshire/La Cienega instrumentation installation continues
- C1045 Wilshire/Western potholing at shaft areas for existing utilities commenced
- C1045 Tunnel Boring Machine (TBM) #1 acceptance test completed
- C1078 Div 20 Bldg construction activities for the building pad completed

**EXPENDITURE STATUS**
**($ In Millions)**

| ACTIVITIES | CURRENT BUDGET | EXPENDED AMOUNT | PERCENT EXPENDED |
|---|---|---|---|
| **DESIGN** | $159.2 | $148.2 | 93.1% |
| **RIGHT-OF-WAY** | $175.6 | $180.8 | 102.9% |
| **CONSTRUCTION** | $1,740.3 | $586.6 | 33.7% |
| **OTHER** | $1,079.3 | $152.5 | 14.1% |
| TOTAL | $3,154.4 | $1,068.1 | 33.9% |

Current Budget includes Environmental/Planning and Finance Costs.

AREAS OF CONCERN

**SCHEDULE ASSESSMENT**

| MAJOR SCHEDULE ACTIVITIES | PRIOR PLAN | CURRENT PLAN | VARIANCE WEEKS |
|---|---|---|---|
| **Environmental** | | | |
| FEIS / FEIR | N/A | 05/31/12 | Complete |
| | | | |
| **Design** | | | |
| PE Notice to Proceed | N/A | 01/12/11 | Complete |
| Final Design complete | 03/22/17 | 06/30/17 | -14.3 |
| **Right-of-Way** | | | |
| All parcels available* | 12/31/15 | 12/31/15 | 0 |
| **Construction - Main Design / Build Contract** | | | |
| Notice to Proceed | 01/12/15 | 01/12/15 | Complete |
| Construction complete | 11/08/23 | 11/08/23 | 0 |

* Parcels related to main D/B Contract C1045

| **ROW ACQUISITION** | PLAN | AVAILABLE | REMAINING |
|---|---|---|---|
| PERMANENT PARCELS | 15 | 15 | 0 |
| TEMPORARY PARCELS | 4 | 4 | 0 |
| **TOTAL PARCELS** | 19 | 19 | 0 |

**CRITICAL ACTIVITIES / 3 MONTH LOOK AHEAD**

- C1045 Wilshire/Western – Implement traffic control plan
- C1045 Wilshire/La Brea Station – Level C install walers / struts complete
- C1045 Wilshire/Fairfax – Level A install walers / struts complete
- C1045 Wilshire/La Cienega decking begins
- C1045 Complete TBM acceptance testing

# 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 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 61S Contract.

For the Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building 61S Contract (C1078), support to Metro continues with responding to RFI's and submittals and design updates. *The team also participated in a coordinated over-the-shoulder meeting to review progress on drawings for the Approved for Construction (AFC) Design Unit #1 and Design Unit #2 submissions*.

*Notable meetings this period for the EMS team were a continued series of meeting with Metro and third parties on SCE conduit routing at Wilshire/La Cienega Station and Wilshire/Fairfax Station lagging design. Notable reviews this period included Books of Plans, product data, factory test plans and test procedures submittals for train control and communications. Also provided continued support in reviewing system design submittals, construction related work plans, third party submittals and responses to RFI's*.

The C1045 Contractor, Skanska, Traylor and Shea (STS), and their final design team, Parsons Transportation Group (PTG), have identified the design work into six distinct design units. They are:

1. Design Unit 1 – Wilshire/Western Interface Chamber (Shaft)
2. Design Unit 2 – Wilshire/La Brea Station
3. Design Unit 3 – Wilshire/Fairfax Station
4. Design Unit 4 – Wilshire/La Cienega Station
5. Design Unit 5 – Tunnels
6. Design Unit 6 – Systems/Traffic/Trackwork

Each design unit package was submitted and evaluated at each of the following phases; 60%, 85%, 100%, Approved for Construction (AFC) and Issued for Construction (IFC). Some critical

design units were advanced as Advanced Partial Design Units (APDU's) to support ongoing construction activities.

Monthly Metro Fire/Life/Safety meetings are occurring.

*The AFC dates of design submittals are as follows:*

| Design Unit | Percentage | Submittal Date |
|---|---|---|
| DU# 1 - Western | AFC | 10/27/2016 |
| DU# 2 - La Brea | AFC | 12/5/2016 |
| DU# 3 - Fairfax | AFC | 1/27/2017 |
| DU# 4 - La Cienega | AFC | 3/31/2017 |
| DU# 5 - Tunnels | AFC | 11/2/2016 |
| DU# 6 - Systems | AFC | 6/30/2017 |

*As of June 2017, final design is complete for all six design units.*

STS is continuing with the required contractual submittals.

**Major Contract Procurement**
All construction contracts for the Project have been awarded.

**Construction**

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 by 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 with ventilation under the concrete deck panels is on-going. *Station excavation has begun.*

The Wilshire/La Cienega Station pile installation began on March 20, 2017. Stage 1 piling along the south side of Wilshire Boulevard was completed on June 4, 2017. The traffic control switch to the north side of Wilshire Boulevard for stage 2 piling occurred on June 24, 2017. *The Stage 2 piling operation began on July 15, 2017.*

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

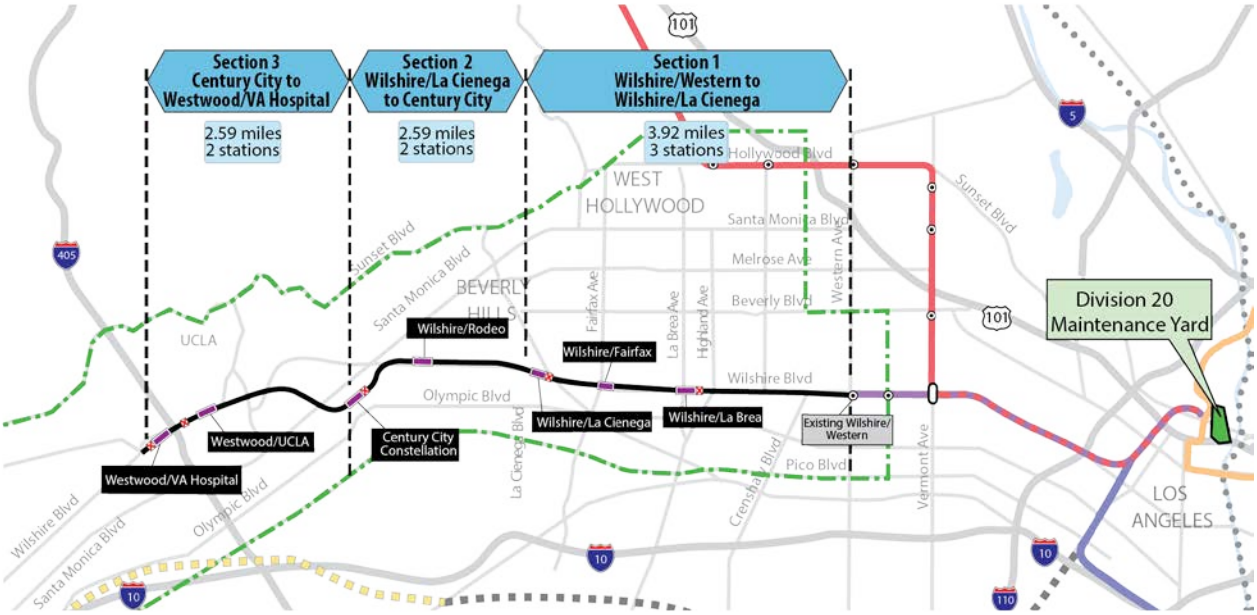
The manufacturing of the two TBMs by Herrenknecht Tunneling Systems USA, Inc. is underway. Delivery is expected in late 2017 to support the start of tunneling from Wilshire/La Brea to Wilshire/Western (Reach 1) in 2018. *One TBM has been accepted by the contractor.*

The storm drain relocation work at the Division 20 Maintenance-of-Way and Non-revenue Vehicle Building 61S continues. *The phase II environmental work has been completed and access has been given to the C1078 contractor to begin construction.*

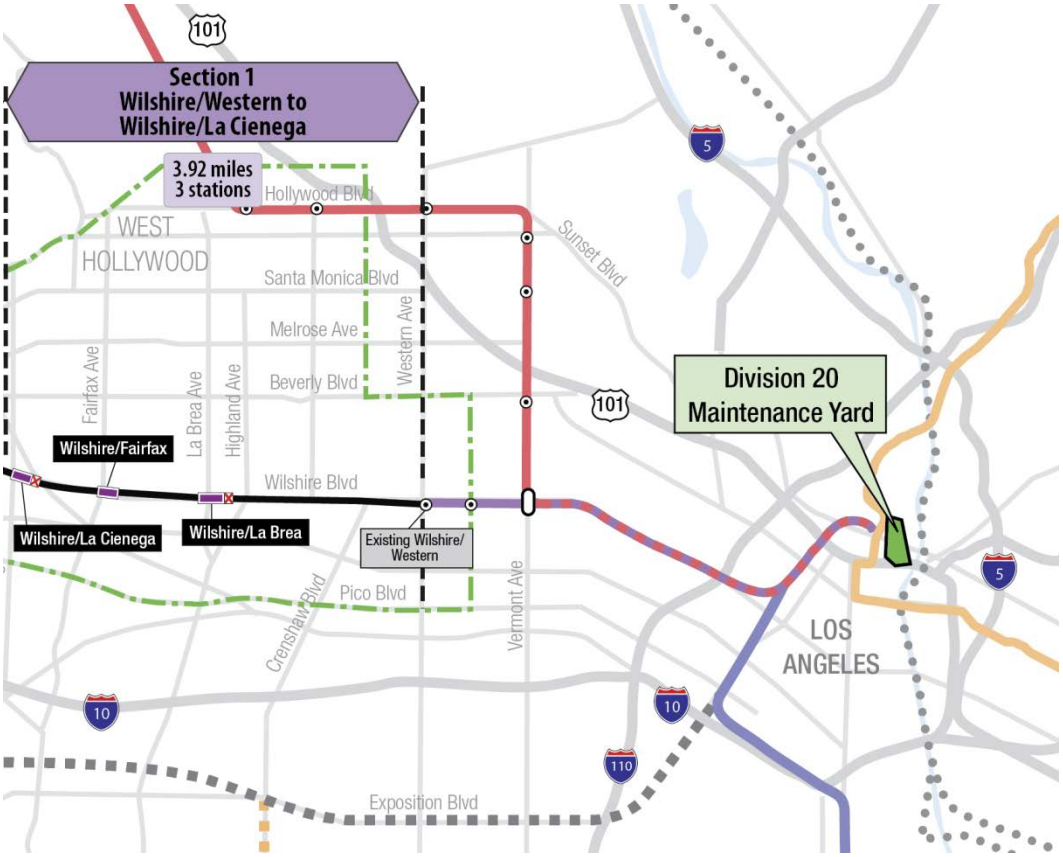
# MANAGEMENT ISSUES

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.

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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 61S**
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 61S). 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.

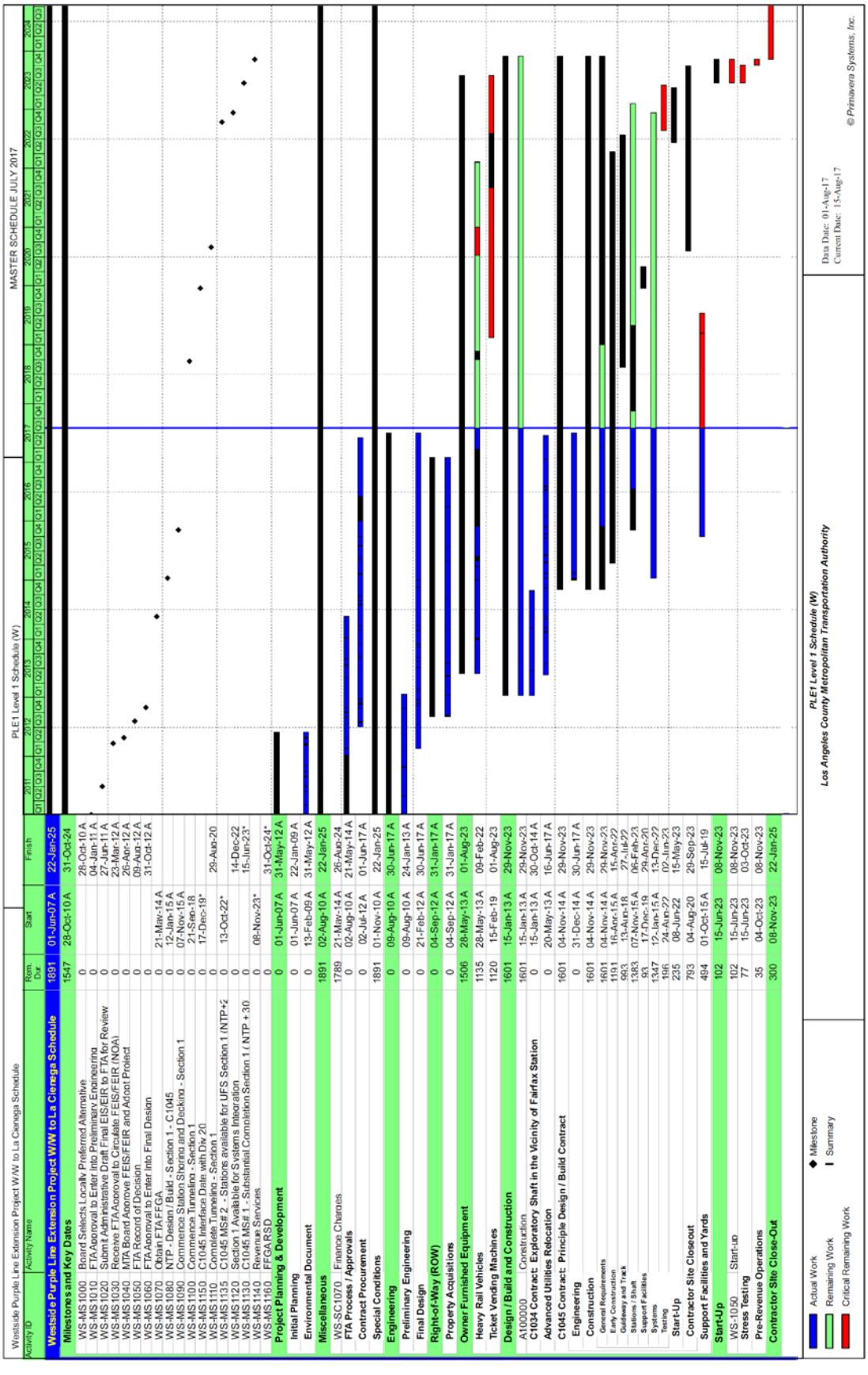
# KEY MILESTONES SIX-MONTH LOOK AHEAD

| | Milestone Date | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17 | Jan-18 |
|---|---|---|---|---|---|---|---|
| C1078 Div 20 Building Construction Mobilization Begins | 08/01/17 | ☐ | | | | | |
| C1045 Tunnel Boring Machine (TBM) #2 Acceptance Testing | 08/21/17 | ☐ | | | | | |
| C1045 Wilshire/Fairfax Level A Excavation Complete | 09/18/17 | | ☐ | | | | |
| C1045 Wilshire/La Brea Muck Shafts Excavation Complete | 10/19/17 | | | ☐ | | | |
| C1045 Wilshire/Western Shaft Pile Installation Begins | 10/21/17 | | | ☐ | | | |
| C1045 Wilshire/La Cienega Street Decking Begins | 10/21/17 | | | ☐ | | | |
| C1045 Tunnel Boring Machine Delivery | 11/03/17 | | | | ☐ | | |
| C1045 Wilshire/La Brea Station Excavation Complete | 11/03/17 | | | | ☐ | | |
| C1045 Wilshire/Fairfax Level B Excavation Complete | 11/09/17 | | | | ☐ | | |
| C1045 Wilshire/Western Shaft Soldier Pile Installation Complete | 12/19/17 | | | | | ☐ | |
| C1045 Wilshire/Western Shaft Decking and Excavation Begins | 01/06/18 | | | | | | ☐ |

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

△ Other Agencies  ☐ Contractors

# PROJECT SUMMARY SCHEDULE

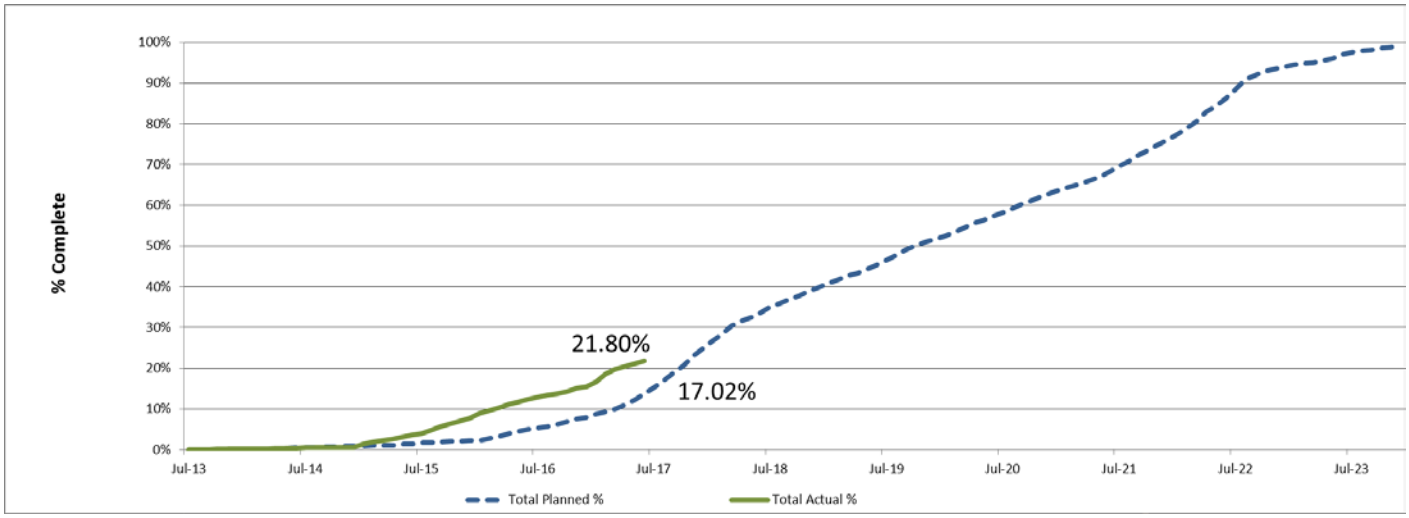


# SCHEDULE MEASUREMENTS

| | 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% | 2.00% | |
| Contract C1078 | 75.12% | 2.25% | |
| **Construction Contracts Progress*:** | | | |
| Contract C1048 | 100.00% | 0.00% | Completed on schedule |
| Contract C1045 | 19.57% | 0.63% | |
| Contract C1055 | 100.00% | 0.00% | Completed on schedule |
| Contract C1056 | 100.00% | 0.00% | Completed on schedule |
| Contract C1078 | 17.03% | 1.62% | |

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

# OVERALL CONSTRUCTION PROGRESS CURVE




*The actual overall construction progress is 21.80% versus a planned of 17.02% through July 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 61S (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 | 11/3/17 | 8/13/18 |
| Deliver to Site - Station HVAC System | 12/4/17 | 1/13/18 | 10/29/18 | 1/4/21 |
| Deliver to Site - Ventilation Fans | 12/4/17 | 1/13/18 | 2/21/19 | 9/18/19 |
| Deliver to Site - Elevators | 8/6/17 | 10/5/17 | 11/13/18 | 11/4/21 |
| Deliver to Site - Escalalators | 10/5/17 | 12/4/17 | 1/12/19 | 11/4/21 |
| | | | | |
| **Heavy Rail Vehicles** | 7/16/15 | 10/3/18 | 2/9/22 | 1/9/23 |
| | | | | |
| **Ticket Vending Machines** | 2/15/19 | 10/8/21 | 9/8/21 | 1/20/22 |
| | | | | |

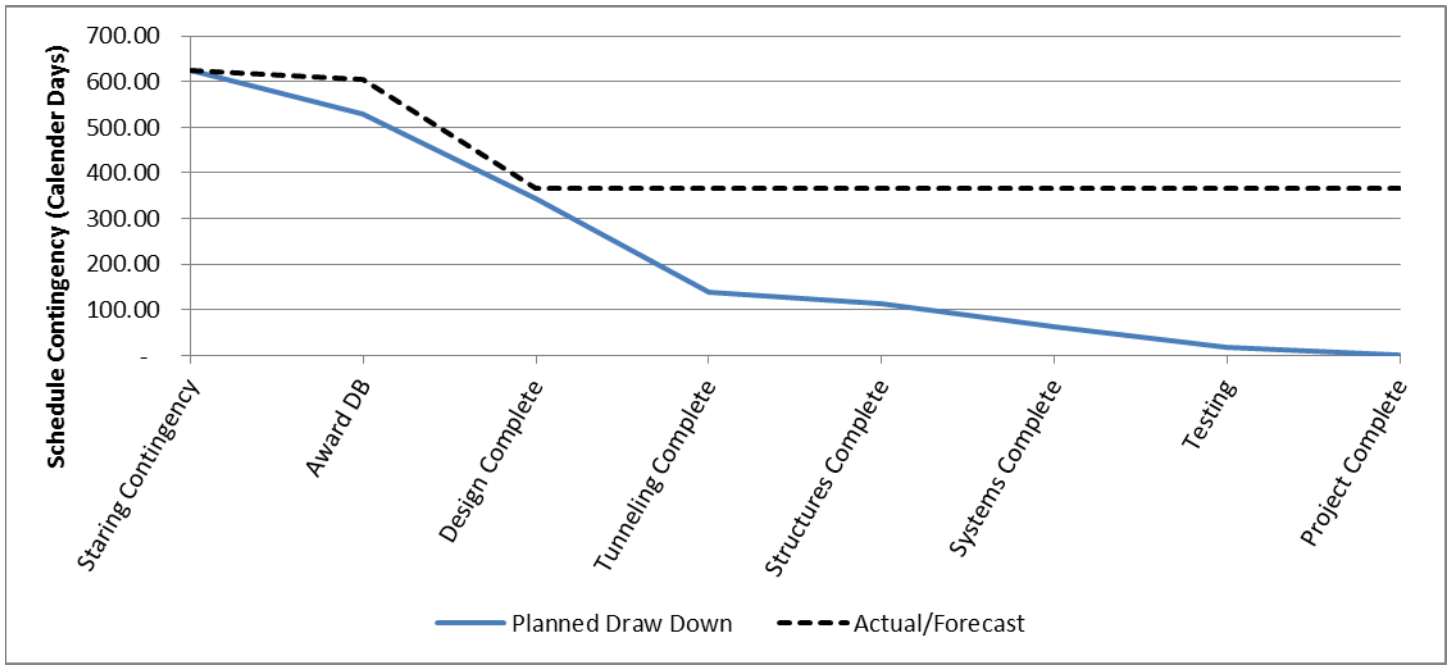
# DESIGN BUILDER'S (C1045) LONG LEAD ITEM LIST

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

# 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 | 2,431 | 50,819 | - | 387,938 | (356) |
| 20 | STATIONS, STOPS, TERMINALS, INTERMODAL | 440,621 | - | 440,621 | 452 | 436,376 | 3,332 | 68,175 | - | 473,316 | 32,695 |
| 30 | SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS | 43,323 | - | 43,323 | - | 36,392 | 110 | 2,220 | - | 43,991 | 668 |
| 40 | SITEWORK & SPECIAL CONDITIONS | 751,566 | - | 754,491 | - | 772,310 | 5,643 | 454,033 | - | 797,069 | 42,578 |
| 50 | SYSTEMS | 113,574 | - | 113,574 | - | 99,267 | - | 11,364 | - | 114,574 | 1,000 |
| | CONSTRUCTION SUBTOTAL (10-50) | 1,737,378 | - | 1,740,303 | 452 | 1,725,315 | 11,516 | 586,611 | - | 1,816,888 | 76,585 |
| 60 | ROW, LAND, EXISTING IMPROVEMENTS | 175,634 | - | 175,634 | - | 202,980 | 18 | 180,776 | - | 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 | 12,217 | 299,664 | 1,498 | 255,835 | - | 418,141 | 3,356 |
| | SUBTOTAL (10-80) | 2,485,918 | - | 2,490,918 | 12,668 | 2,326,077 | 13,032 | 1,028,698 | - | 2,546,312 | 55,393 |
| 90 | UNALLOCATED CONTINGENCY | 248,592 | - | 248,592 | - | - | - | - | - | 237,604 | (10,988) |
| 100 | FINANCE CHARGES | 375,470 | - | 375,470 | - | - | - | - | - | 331,065 | (44,405) |
| | TOTAL PROJECTS 465518 & 865518 (10-100) | 3,109,980 | - | 3,114,980 | 12,668 | 2,326,077 | 13,032 | 1,028,698 | - | 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 | 12,668 | 2,365,447 | 13,032 | 1,068,055 | - | 3,154,350 | - |

# PROJECT COST ANALYSIS

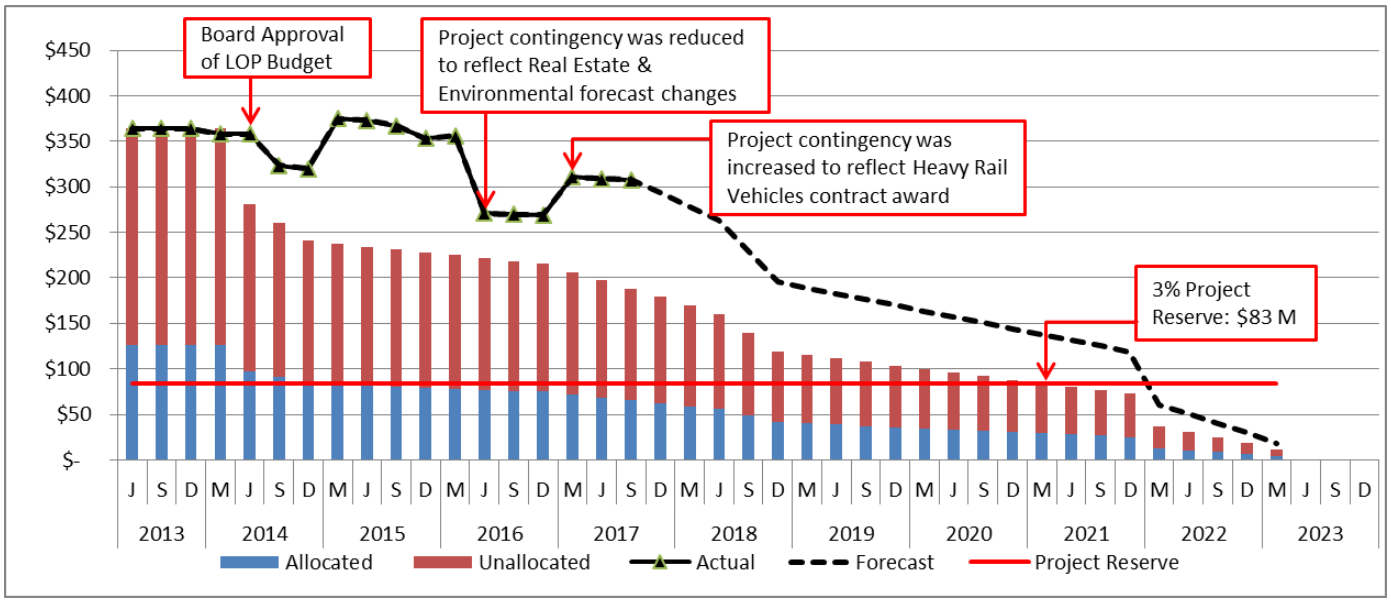
**Original Budget**
The Original Budget of $3.2 billion reflects the Board approved Life of Project Budget, July 24, 2014, plus Finance Charges of $0.4 billion.

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

**Commitments**
*The Commitments increased by $12.7 million due to executed Contract Modifications for Professional Services and the Design/Build Contract C1045. The $2.4 billion in Commitments to date represents 75.0% of the Current Budget.*

**Expenditures**
*The Expenditures increased by $13.0 million primarily for costs associated with the Design/Build Contracts C1045 and C1078, Real Estate Acquisitions, Master Cooperative Agreement with the City of Los Angeles, Legal Services, Engineering Management Services, Construction Management Support Services, and Metro Project Administration. The $1.1 billion in Expenditures to date represents 33.9% 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 $0.5 million due to an executed Contract Modification 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 | (10,988) | - | (10,988) | 237,604 |
| Allocated Contingency | 71,963 | (454) | (452) | (906) | 71,058 |
| **Total Contingency** | **320,555** | **(11,442)** | **(452)** | **(11,894)** | **308,661** |

# DISADVANTAGED BUSINESS ENTERPRISE (DBE)

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

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

- DBE Goal – Design 20.00%
- Current DBE Commitment $12,979,563 (20.25%)
- Current DBE Participation $10,915,825 (17.08%)
- Fourteen (14) Design DBE subcontractors have been identified for Design

- DBE Goal – Construction 17.00%
- Current DBE Commitment $259,812,529 (17.00%)
- Current DBE Participation $51,003,849 (11.08%)
- Ninety-three (91) Construction DBE subcontractors have been identified to-date

# PROJECT LABOR AGREEMENTS (PLA) STATUS

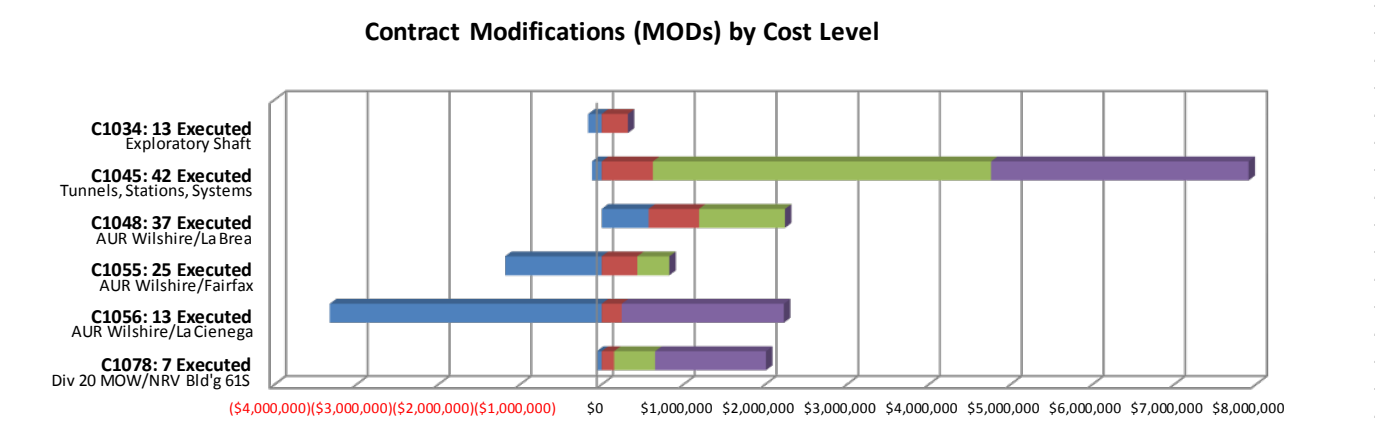
**Contract C1045 Westside Purple Line Extension, Section 1 Design-Build**
(Reporting Data as of June 2017)

- Targeted Worker Goal 40.00%
- Targeted Worker Current Participation 66.58%

- Apprentice Worker Goal 20.00%
- Apprentice Worker Current Participation 16.93%

- Disadvantaged Worker Goal 10.00%
- Disadvantaged Worker Current Participation 7.23%

# SUMMARY OF CONTRACT MODIFICATIONS




| | C1034<br>13 Executed | C1045<br>42 Executed | C1048<br>37 Executed | C1055<br>25 Executed | C1056<br>13 Executed | C1078<br>7 Executed | Total |
|---|---|---|---|---|---|---|---|
| Under $100K | (164,288) | (118,565) | 574,448 | (1,179,119) | (3,324,793) | (57,435) | **(4,269,752)** |
| $100K to $250K | 321,000 | 626,791 | 616,809 | 436,190 | 245,024 | 151,324 | **2,397,138** |
| $250K to $1M | - | 4,135,566 | 1,050,980 | 390,709 | - | 500,798 | **6,078,053** |
| Over $1M | - | 3,150,000 | - | - | 1,983,179 | 1,357,586 | **6,490,765** |
| **Total Contract MODs** | **156,712** | **7,793,792** | **2,242,237** | **(352,220)** | **(1,096,590)** | **1,952,273** | **10,696,204** |
| **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%** | **0.5%** | **36.3%** | **-2.4%** | **-5.4%** | **3.7%** | **0.6%** |

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-two Contract MODs with a total value of $7.8 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.

Seven Contract MODs with a total value of $2.0 million have been executed since the award of Contract C1078 – Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building 61S.

(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 | $265.000 | $1,250.000 | 100% | $265.000 | 21% | $265.000 | 21% |
| 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% | $82.222 | 10% |
| MEASURE R 35% | $869.178 | $874.178 | $593.732 | $670.705 | 77% | $556.228 | 64% | $493.502 | 56% |
| 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 | $1,298.338 | $2,365.447 | 75.0% | $1,068.055 | 33.9% | $910.475 | 28.9% |

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 submitted on July 26, 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. Metro submitted TIFIA Requisition #1 for $82.2 million on June 12, 2017. *Metro submitted TIFIA Requisition #2 for $40.8 million on July 10, 2017.*

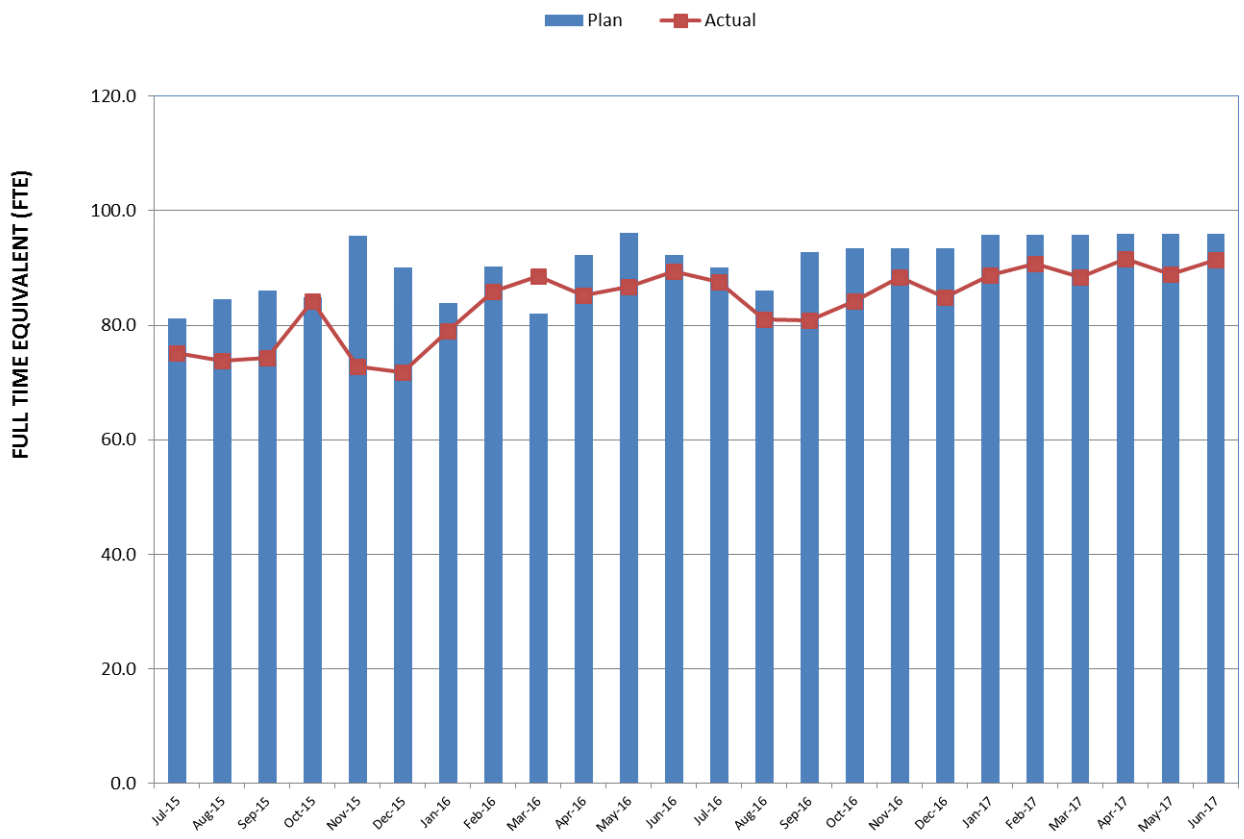
**MEASURE R 35%:** *$593.7 million have been allocated to the Project through FY18*. Funds are available for drawdown.

**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



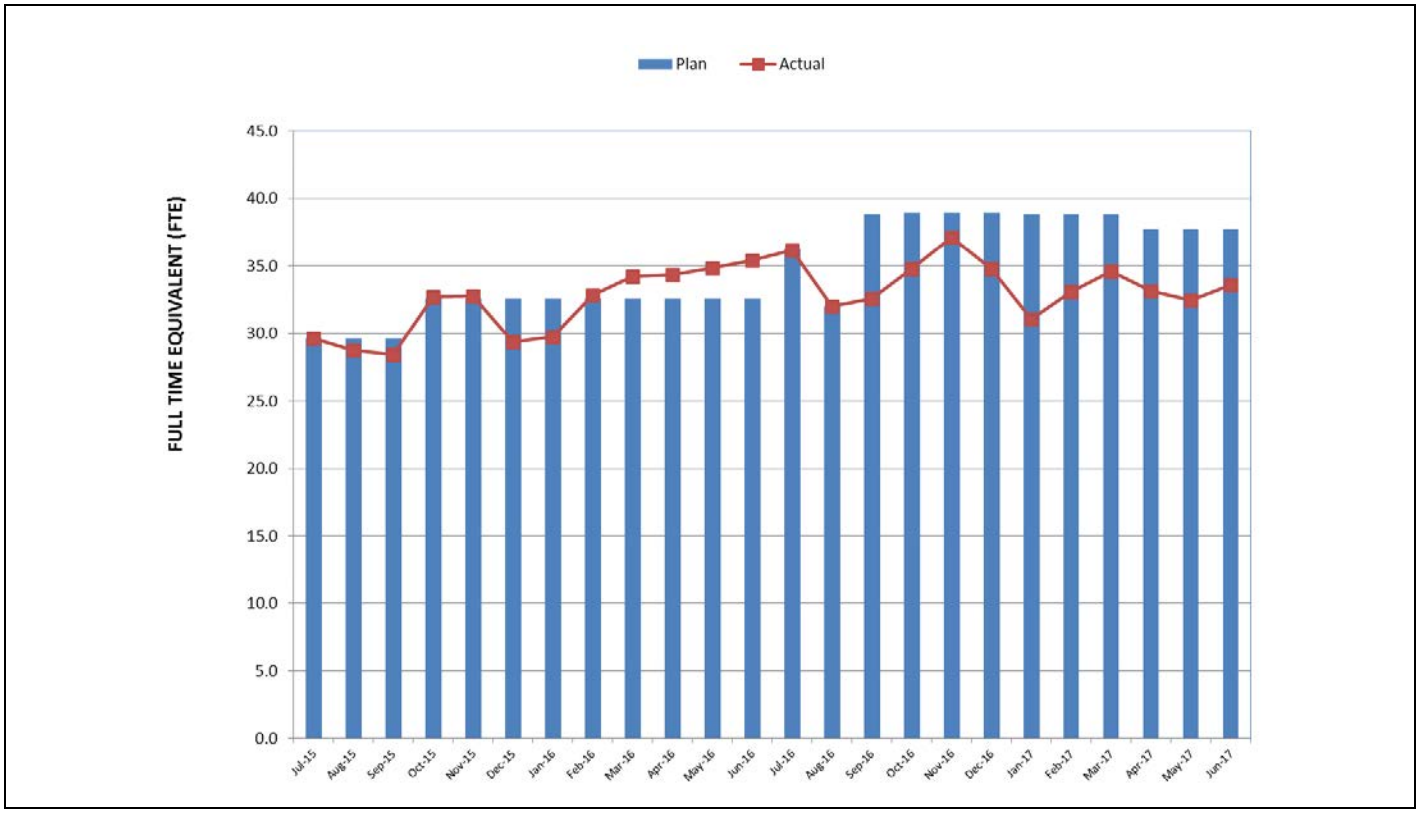

# TOTAL PROJECT STAFFING

The overall FY17 Total Project Staffing Plan averages 93.7 FTEs per month.

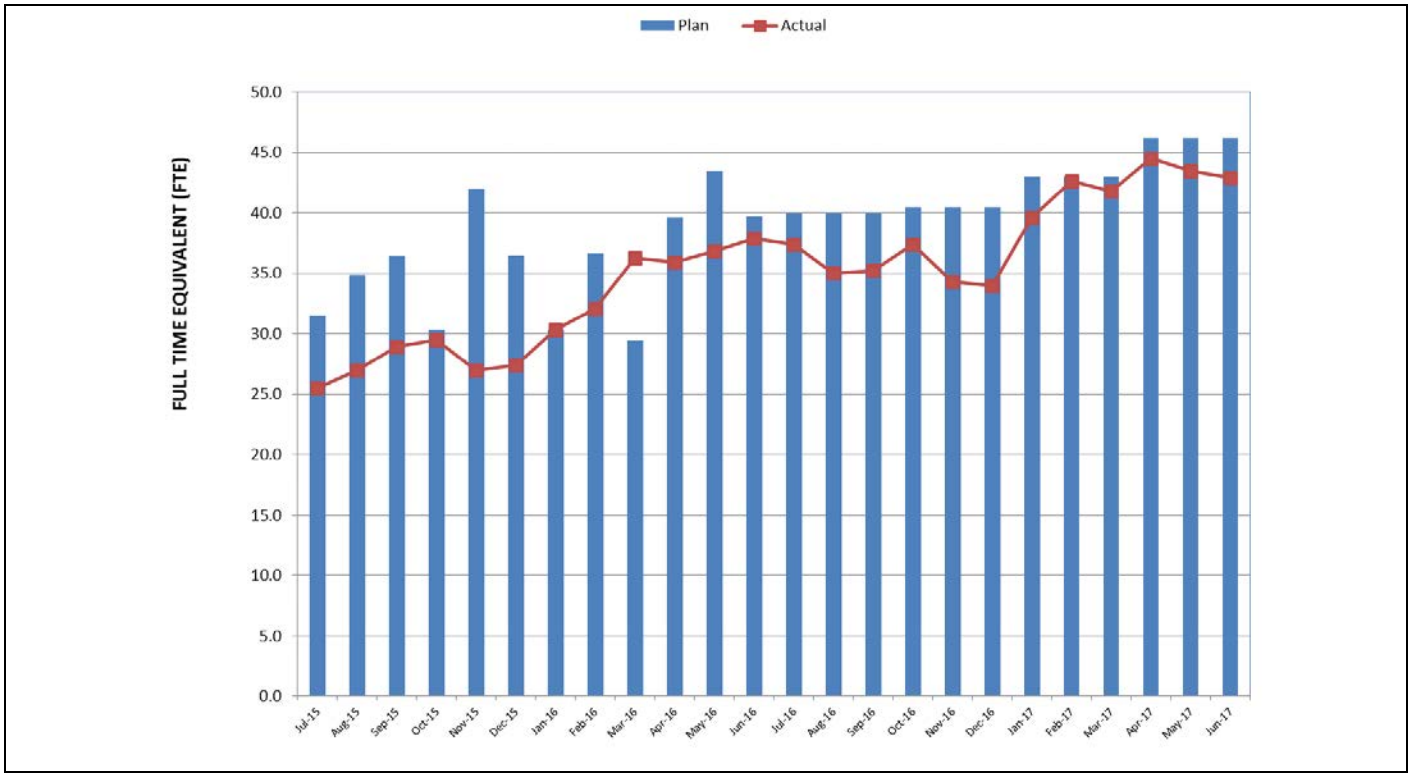
*For June 2017, there were a total of 33.6 FTEs for MTA's Project Administration Staff and 57.9 FTEs for Consulting Staff. The total project staffing for June 2017 was 91.5 FTEs.*

# STAFFING STATUS (Continued)

## METRO STAFFING – FTES

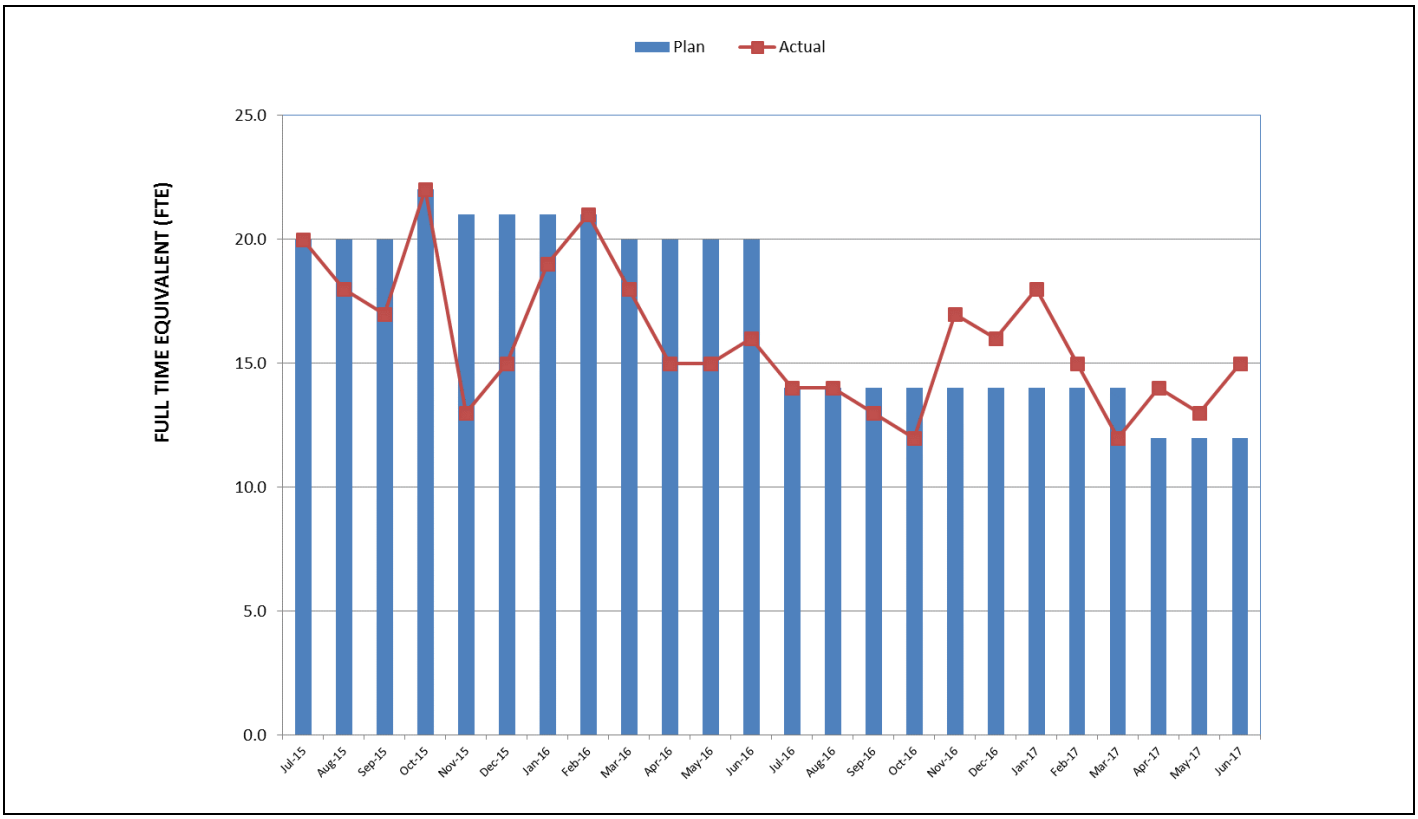



## CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONSULTANT – FTES



# 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 | 6 | 109 | 109 | 9 |
| Part Takes | 6 | 6 | 6 | 6 | 3 | 0 | 0 | 6 |
| TCE | 4 | 4 | 4 | 4 | 2 | 0 | 0 | 4 |
| **Total Parcels** | **19** | **19** | **19** | **19** | **11** | **109** | **109** | **19** |

The total count of the 19 parcels include the two Division 20 parcels required for constructing the MOW/NRV Building 61S.

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, 8 Nonconformance Reports, and 1 Corrective Action Request.

**C1078 – Division 20 MOW and NRV Building 61S**

- 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.

# ENVIRONMENTAL STATUS

- Conducted field environmental monitoring and spot inspections for construction noise, vibration, storm water 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, but not limited to, the Waste Management Plan and Q2 Noise Control and Monitoring Plan.*
- Evaluated environmental impacts and EIR/EIS requirements for FTA review.
- *Annual Sustainability Plan report submitted and approved.*
- *Assess air sampling viable threshold values and review against Wilshire/Fairfax ventilation plan and air scrubber permit limitations to assess proposed flow rate operations are compliant with all requirements.*
- *Study and address ventilation noise issues and concerns.*
- *Reviewed 3 months of water discharge reports and compared to Daily Inspection Report (DIR) information.*
- *Finalize agreement with La Brea Tar Pit Museum for display of WPLE discovered specimens at "fishbowl".*
- *Completed Phase 2 geotechnical excavation and backfill for Location 61S (EN077).*

# CONSTRUCTION RELATIONS STATUS

- *Produced and distributed 16 construction work notices for advance utility relocations and construction activities*.
- *Held Meetings and made Project Presentations at the following: Micropolitan Apt. Property Manager, Wilshire Center Koreatown Neighborhood Council, Mid City West Community Council, Manhattan Senior Apartments, Elected Officials Briefing, Mercury Property HOA, Ramada Hotel, Shaby Hyang, Solair Wilshire Homeowners Association, Wilshire Center Business Improvement District, Construction Community Meeting, Happy Village Korean American Development Center, Lafayette Park Security Council and various stakeholders.*
- Construction issues: Noise complaints regarding piling and utility work at Wilshire/La Cienega Station, ventilation fans complaint at Wilshire/La Brea Station Staging Yard and lights complaint from Ogden Staging Yard.
- Visited and updated businesses and residences at future station locations to discuss jet grouting, Wilshire/Fairfax Station excavation, utility relocation, decking installation at Wilshire/Fairfax Station, Wilshire/La Cienega Station k-rail installation and pre-piling activities, and business profiles and new Eat, Shop, Play (ESP) Wilshire promotional campaign for businesses.
- *Began extensive outreach for Wilshire/Western tie-in construction activities beginning in August 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 and DOT/Elected Officials.
- 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.
- *Convened community based Art Panel for station artwork opportunities and selected artist candidates.*
- *Completed community resource guide for station artwork opportunities.*

# SAFETY & SECURITY STATUS

- *There were no recordable injuries during July 2017.*
- *Metro continues to work with the D/B contractor to insure adequate Construction Safety Staffing in compliance with the Contract.*
- Design Builder's construction activities (also day and night) and the C1078 Maintenance of Way Building site continue to be monitored to document contractor compliance with contract specifications.
- *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 July 25, 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 transient encampment hazards as well as public interactions with the construction crews.
- The statistics below continue to be estimates due to the under-report of hours discussed previously. Metro staff is working with the contractor to return to the actual reported numbers.
- *June 2017 Contractor Work Hours (Design & Construction): 62,500*
- *Contractor - Project to Date Work Hours (Design & Construction) (through 6/30/2017): 1,477,757*
- *Total Project to Date Work Hours (Contractor & the IPO Staff) (through 6/30/2017): 1,907,465*
- *Project to Date Recordable Injury Rate: 0.6 (Six Recordable Injuries) (each rate is per 200,000 work hours) (National Rate: 2.8)*
- Project to Date Total Time Away Injury Rate: 0.3 (Three Time Away From Work Injuries) (National Rate: 1.7)
- *Project to Date Total Days Away Rate: 33.2 (317 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 by work orders. |

# ADVANCED UTILITY RELOCATION STATUS

- All advanced utility relocations by third parties have been completed.
- *An unknown Verizon fiber line was found within an abandoned SCE conduit at Wilshire/La Cienega Station. Cutover and removal of the fiber expected to be completed by Verizon in first week of August.*

# 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 Wilshire/Fairfax Station south side K-Rail setup has been approved by the City of Los Angeles for the dates of March 15, 2017 through July 31, 2017.
- 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 jet grouting work at Cross Passages #14 and #15 have been approved by the City of Los Angeles for the dates of June 12, 2017 through August 28, 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 September 30, 2017 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 jet grouting work at Cross Passages #14 and #15 in the City of Los Angeles have been approved for the dates of June 24, 2017 through October 15, 2017.*

# 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 |

# CONTRACT C1045 STATUS

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

**Contractor: SKANSKA - TRAYLOR - SHEA**

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

**Status as of:** **July 28, 2017**

## Progress / Work Completed:

- Wilshire/Fairfax steady-state traffic controls implemented
- Tunnel Boring Machine (TBM) #1 acceptance test completed
- Wilshire/La Brea Level B walers and struts complete

## Major Activities (In Progress):

- Wilshire/La Brea Station excavation continues
- Wilshire/La Brea tie-back and strut installation continues
- Wilshire/Fairfax installation of temporary ventilation system continues
- Wilshire/Fairfax hanging of utilities under the concrete deck continues
- Wilshire/La Cienega piling installation continues
- Wilshire/La Cienega instrumentation installation continues
- Wilshire/Western potholing at shaft areas has commenced

## 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. Other options for float recovery continue to be explored.

## Major Activities Next Period:

- Wilshire/La Brea under deck excavation continues
- Wilshire/La Brea under deck strut installation continues
- Wilshire/Fairfax hanging of utilities under the deck continues
- Wilshire/La Cienega piling installation continues
- Jet grouting along Wilshire Blvd 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: | 928 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: 19.57%*

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

## Cost Summary:

| | $ In millions |
|---|---|
| 1. Award Value: | 1,636.4 |
| 2. Executed Modifications: | 7.8 |
| 3. Approved Change Orders: | 0.0 |
| 4. Current Contract Value (1+2+3): | 1,644.2 |
| 5. Incurred Cost: | 565.8 |

# CONTRACT C1078 STATUS

**Description: Building 61S (MOW/NRV)**
**Contractor: Clark Construction**

**Contract No.** **C1078**
**Status as of:** **July 28, 2017**

## Progress / Work Completed:

- Artwork: PE Design coordination meeting was completed. Next coordination meeting scheduled for week of August 7, 2017
- Preliminary plan for street lights has been approved
- Real Estate: Property exchange agreement between Metro and Chalmers is currently in escrow. Targeting to close escrow in August 2017
- Environmental contractor completes Phase II scope of work
- COLA access road and track easement: awaiting final signature

## Major Activities (In Progress):

- Contractor continues design development
- Processing CN-00010: Construction impacts of relocating building Technical Analysis (TA) and Pre Negotiation Plan (PNP) to be completed. Negotiations to follow
- 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 by Contractor
- Processing CN-00013: AST Leak Detection and Remote Lubrication Fill/Extract Station - CN issued. Pending CSP and ICE.

## Areas of Concern:

- None at this time

## Major Activities Next Period:

- Demobilization of environmental contractor after Phase II completion
- Submittal of final phase II QC Report by Arcadis
- Turnover of construction site and mobilization of Clark Construction
- Delivery of construction trailers to site

## 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: | 667 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: 17.03%

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

## Cost Summary:

| | $ In millions |
|---|---|
| 1. Award Value: | $ 52.8 |
| 2. Executed Modifications: | $ 2.0 |
| 3. Approved Change Orders: | $ 2.8 |
| 4. Current Contract Value (1+2+3): | $ 57.6 |
| 5. Incurred Cost: | $ 14.7 |

# CONSTRUCTION PHOTOGRAPHS

*Under Deck Excavation at Wilshire/La Brea Station*

*Securing Cap Beams at Wilshire/La Cienega Station*

# 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 |