# Westside Purple Line Extension Section 1 Project



# 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).

**NOVEMBER 2014** 

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# Westside Purple Line Extension Section 1 Project Monthly Project Status Report

# **PROJECT SUMMARY**

LOCATION: DESIGN CONSULTANT:	Los Angeles / Parsons / Brin	=		CONSTRUCTION MANAGEMENT CONSULTANT: WEST, a Joint Venture CONTRACTOR: Skanska, Traylor and Shea, a Joint Venture						
PREPARING TRENCH FO	OR ADVANCED	UTILITY REL	CATIONS	WORK COMPLETED PAST MONTH						
			ELA	- C1034 Exploratory Shaft has been completed - C1048 Advanced Utility Relocations (AUR) substantially complete - Continuing real estate acquisitions - C1055 Fairfax AUR ductbank Segments 2, 5, 6, 13, 12 complete - C1055 Fairfax AUR Water Line relocation mobilization began						
EXPENDITURE STATUS (\$ In Millions)				SCHEDULE ASSESSME	NT					
ACTIVITIES	CURRENT BUDGET	EXPENDED AMOUNT	PERCENT EXPENDED	MAJOR SCHEDULE ACTIVITIES	PRIOR PLAN	CURRENT PLAN	VARIANCE WEEKS			
				Environmental	1					
DESIGN	\$157.7	\$61.3	38.9%	FEIS / FEIR	N/A	05/31/12	Complete			
RIGHT-OF-WAY	\$175.6	\$61.6	35.1%	Design						
CONSTRUCTION	\$1,737.4	\$21.1	1.2%		N/A	01/12/11	Complete			
	. ,			Final Design complete	03/22/17	03/22/17	0			
OTHER	\$1,078.7	\$71.6	6.6%	Right-of-Way						
TOTAL	\$3,149.4	\$215.6	6.8%	All parcels available	12/31/15	12/31/15	0			
Current Budget includes Envi	ronmental/Planr	ning and Financ	e Costs.	Construction - Main Design / Build Contract						
AREAS OF CONCERN				Notice to Proceed	01/12/15	01/12/15	0			
				Construction complete	11/08/23	11/08/23	0			
ROW ACQUISITION	PLAN	ACQUIRED	REMAINING	CRITICAL ACTIVITIES /	3 MONTH LO	OK AHEAD				
PERMANENT PARCELS	17	1	16	- C1034 Exploratory Shaft: Contract closeout to complete - C1048 La Brea AUR: Contract closeout to complete						
TEMPORARY PARCELS	1	0	1	- C1045 Design/Build: Issue Notice to Proceed (NTP) - C1055 Fairfax AUR: Construction of water & power, MS #1 to complete - C1056 La Cienega AUR: Issue NTP						
TOTAL PARCELS	18	1	17							

# **Westside Purple Line Extension Section 1 Project Monthly Project Status Report**

#### **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 design team continued to support Metro in preparation of the final reports for the exploratory shaft and continued to provide design support to the three advanced utility relocation (AUR) contracts.

For the Wilshire/Fairfax Exploratory Shaft Contract (C1034), the team is preparing the final monthly progress report, reviewed as-built drawings in support of record drawing production and finalizing the field observations report.

For the Wilshire/La Brea AUR Contract (C1048), the team continues to receive red line drawings from the contractor. The information from these drawings is being incorporated into the Tunnels, Stations, Trackwork, Systems and Systems Integration Testing Contract (C1045) composite utility drawings.

For the Wilshire/Fairfax AUR Contract (C1055), the team continues to support Metro in responding to Request for Information (RFI's) and submittals. Most of the construction activities are occurring at night and to support timely responses to field queries, a fulltime field engineering representative has been assigned. The team continues to review potholing data from the contractor.

For the Wilshire/La Cienega Station AUR Contract (C1056), the team is supporting Metro with traffic control requests for additional potholing being undertaken by the third party contractors.

The team continues to provide support to Metro in responding to bidders' questions and coordinating with various third parties for the Division 20 Maintenance-of-Way Building (MOW) and the Non-Revenue Vehicle (NRV) Facility Contract (C1078). The engineer's estimate has been prepared and is being reviewed.

#### **Major Contract Procurement**

The recommendation to award the C1045 contract was presented at the July 2014 Metro Board Meeting. The Board of Directors approved staff's recommendation to award to Skanska, Traylor and Shea, a joint venture (STS) and authorized the Chief Executive Officer (CEO) to award the 107 month firm fixed price contract, subject to the resolution of any timely protests. Two protests were received on July 22, 2014. Responses to the protests were issued on September 4, 2014. The two protesters issued appeals on September 16, 2014. The two appeals were denied on November 4, 2014 and the contract was awarded the same day. The contract Notice to Proceed (NTP) is planned for January 12, 2015.

The Wilshire/La Cienega AUR Contract (C1056) was advertised for bid on February 28, 2014. Price bids were received on May 21, 2014. The Notice of Intent to Award was issued on September 26, 2014. Contract award was issued to Steve Bubalo Construction Company on October 13, 2014. The Notice to Proceed (NTP) is planned for January 12, 2015.

The Division 20 Maintenance-of-Way Building (MOW) and the Non-Revenue Vehicle (NRV) Facility Contract (C1078) Invitation for Bid (IFB) was issued on September 19, 2014. Amendment 1 was issued on October 31, 2014, which extended the due date for bids from December 5, 2014 to January 16, 2015. A second amendment is expected to be issued in December 2014.

### **PROJECT OVERVIEW & STATUS (Continued)**

#### Construction

The demolition and backfill operations have been completed for the Wilshire/Fairfax Exploratory Shaft Contract (C1034). The contractor has also demobilized the field offices and their equipment from the site. The contractor is completing punch list items and preparing for contract closeout.

The Wilshire/La Brea AUR Contractor (C1048) achieved substantial completion on October 27, 2014. Work performed in the same area by AT&T is expected to be completed in March 2015. LADWP power and Southern California Gas work is anticipated to be completed in January 2015. This will complete all AUR work at this location.

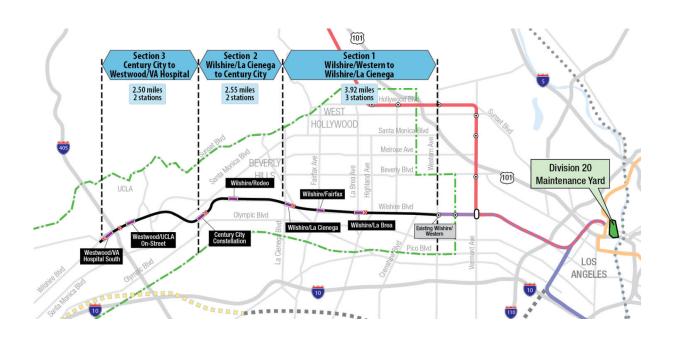
The Wilshire/Fairfax AUR (C1055) contractor is continuing with submittals and water and power relocations, and is on schedule to complete in October 2015. The fiber optics companies are continuing with their work in the same area.

CES has completed the relocation of fiber optic cables at the Wilshire/La Cienega Station area.

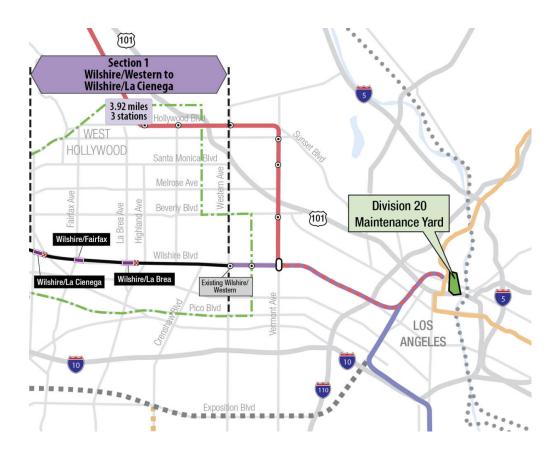
#### **MANAGEMENT ISSUES**

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 is constructing an exploratory shaft to observe ground conditions prior to the award of Contract C1045. The location of the exploratory shaft is adjacent to the future Wilshire/Fairfax Station. The construction of the shaft includes 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 will be maintained for an observation time period. Afterwards, the shaft will be dismantled and the site backfilled in a condition acceptable to the property owner.

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

Relocate existing LADWP power, water utilities and a sewer line within the construction limits of the Wilshire/La Brea Station. The contractor is responsible for working in streets, procure materials, and coordinate with the utility owner. The contractor is to construct the new facilities

### **BASE PROJECT SCOPE (Continued)**

in accordance with utility plans and specifications, provide traffic control, restore streets, and support utility crews installing cabling and during cut-over of the existing utilities.

#### <u>Contract C1055 – Wilshire/Fairfax Advanced Utility Relocations</u>

Relocate existing LADWP power and water utilities within the construction limits of the Wilshire/Fairfax Station. The contractor is responsible for working in streets, procure materials, and coordinate with the utility owner. The contractor is to construct the new facilities in accordance with utility plans and specifications, provide traffic control, restore streets, and support utility crews installing cabling and during cut-over of the existing utilities.

#### Contract C1056 - Wilshire/La Cienega Advanced Utility Relocations

Relocate existing City of Beverly Hills water, storm drain and sewer utilities within the construction limits of the Wilshire/La Cienega Station. The contractor is responsible for working in streets, procure materials, and coordinate with the utility owner. The contractor is to construct the new facilities in accordance with utility plans and specifications, provide traffic control, restore streets, and support utility crews during cut-over of the existing utilities.

#### <u>Contract C1045 - Tunnels, Stations, Trackwork, Systems and Systems Integration</u> 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.

# <u>Contract C1078 – Division 20 Maintenance-of-Way Building and Non-Revenue Vehicle Facility</u>

The Design/Build contract provides for final design and construction of a new Maintenance-Of-Way (MOW) stores building and a Non-Revenue Vehicle (NRV) facility at the south end of the existing Division 20 Yard. 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 will procure separate contacts to provide the 34 Heavy Rail Vehicles (HRV) and the Universal Fare System (UFS) necessary to operate the extension to the Purple Line. The scope of the HRV contract includes design, manufacturing, testing and delivery of the vehicles. The scope of the UFS contract includes design, fabrication and installation of equipment at the three stations and system testing.

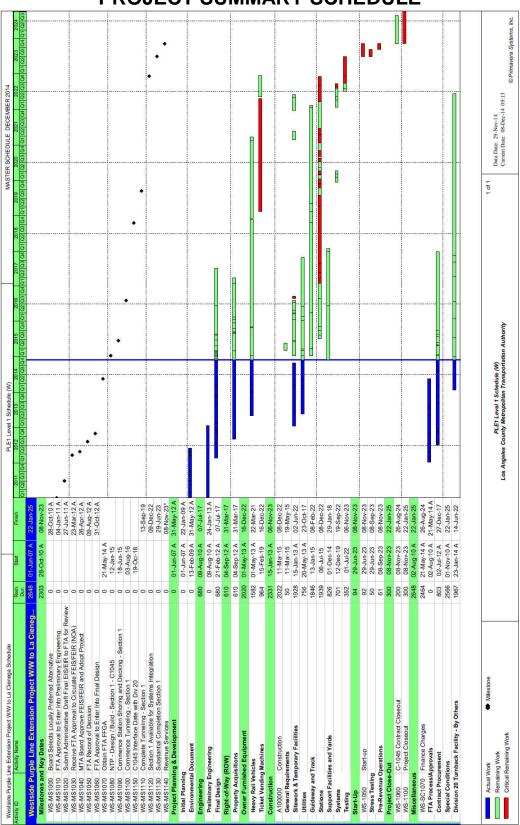
#### Start Up

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**

							I
	Milestone Date	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
C1034 Exploratory Shaft Contract Closeout Complete	12/31/14	•					
C1048 La Brea AUR Contract Closeout Complete	12/31/14	•					
C1056 La Cienega AUR - NTP	01/12/15		•				
C1045 Design / Build Contract - NTP	01/12/15		<b>•</b>				
C1055 MS#1 Water @ La Brea Complete	01/15/15						
C1078 Division 21 MOW & NRV Facilities Receive Bids	01/16/15						
C1045 Final Design Begins	02/25/15						
C1056 Utility Relocation Construction Begins	03/23/15						
TBM Procurement	04/01/15						
◆ MTA Staff MTA Board Action	FTA (Federa	al Transit A	dministratio	on)			
△ Other Agencies ☐ Contractors	О РВ						

#### PROJECT SUMMARY SCHEDULE



# **SCHEDULE MEASUREMENTS**

# **OVERALL CONSTRUCTION PROGRESS CURVE**

# **MAJOR EQUIPMENT DELIVERY**

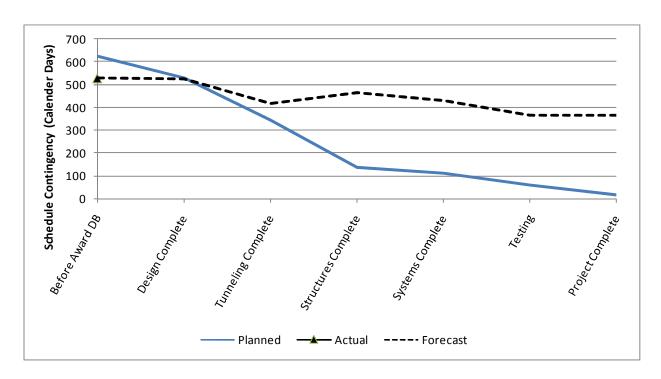
# **DESIGN BUILDER'S (C1045) LONG LEAD ITEM LIST**

#### **CRITICAL PATH NARRATIVE**

#### **Critical Path:**

The critical path for the Westside Purple Line Extension 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 La Brea advanced utilities that are being relocated under the C1048 contract and by third parties. Upon completion of utility relocations, the contractor begins installation of soldier piles, first on the north side of the 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 / Fairfax station box, installation of trackwork 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.

#### PROJECT COST STATUS

SCC	DESCRIPTION		GINAL CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		CURRENT BUDGET / FORECAST
CODE		BUDGET	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	VARIANCE
10	GUIDEWAY & TRACK ELEMENTS	388,294	-	388,294	376,895	380,680				388,294	
20	STATIONS, STOPS, TERMINALS, INTERMODAL	440,621	-	440,621	431,023	431,981	-			440,621	
30	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	43,323	-	43,323	(3,881)					43,323	
40	SITEWORK & SPECIAL CONDITIONS	751,566	-	751,566	687,899	728,510	1,290	21,093	2,011	754,818	3,25
50	SYSTEMS	113,574	-	113,574	97,466	97,466	-	-	-	113,574	
CONSTRUCTION SUBTOTAL (10-50)		1,737,378	-	1,737,378	1,589,401	1,638,637	1,290	21,093	2,011	1,740,630	3,25
60	ROW, LAND, EXISTING IMPROVEMENTS	175,634	-	175,634	56,624	175,634	22,421	61,580		175,634	
70	VEHICLES	160,196	-	160,196						160,196	
80	PROFESSIONAL SERVICES	412,710	-	412,710	79,426	199,228	2,255	93,712		412,710	
	SUBTOTAL (10-80)	2,485,918	-	2,485,918	1,725,452	2,013,499	25,966	176,385	2,011	2,489,170	3,25
90	UNALLOCATED CONTINGENCY	248,592	-	248,592	(4,238)				(2,011)	245,340	(3,25
100	FINANCE CHARGES	375,470	-	375,470						375,470	
	TOTAL PROJECTS 465518 & 865518 (10-100)	3,109,980	-	3,109,980	1,721,213	2,013,499	25,966	176,385		3,109,980	
	ENVIRONMENTAL/PLANNING - 405518	8,505	-	8,505		8,505		8,505		8,505	
ENVIRONMENTAL/PLANNING - 465518			-	30,865	-	30,865	7	30,704	-	30,865	
	TOTAL PROJECTS 405518 & 465518 (ENV / PLAN'G)	39,370		39,370		39,370	7	39,209	•	39,370	_
	TOTAL PROJECTS 405518, 465518 & 865518	3,149,350	_	3,149,350	1,721,213	2,052,868	25,973	215.593		3,149,350	

#### PROJECT COST ANALYSIS

#### **Original Budget and Current Budget**

The Original Budget and Current Budget of \$3.1 billion reflect the Board approved Life of Project Budget, July 24, 2014, plus Finance Charges of \$0.4 billion.

#### **Current Forecast**

The Current Forecast remains within the Board approved budget of \$3.1 billion. However, the Sitework & Special Conditions was increased by \$2.0 million to reflect the Board approved Contract Modification Authority increase to Contract C1055 – Advanced Utility Relocations at Wilshire/Fairfax.

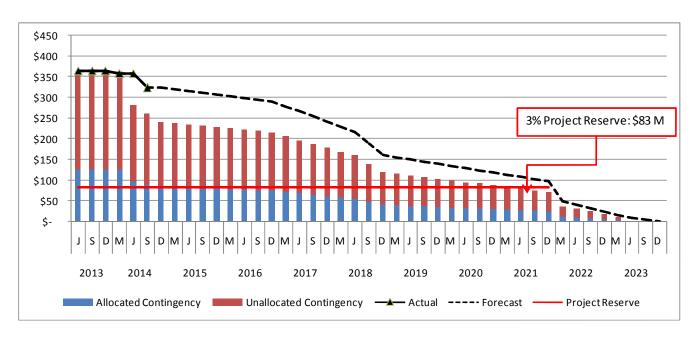
#### Commitments

The Commitments increased by \$1.7 billion primarily due to the award of Contract C1045 – Tunnels, Stations, Trackwork, Systems and Systems Integration Testing. The \$2.1 billion in Commitments to date represents 65.2% of the Current Budget.

#### **Expenditures**

The expenditures are cumulative through October 2014. The expenditures increased by \$26.0 million this period primarily for costs associated Advanced Utility Relocations, Real Estate Acquisitions, Engineering Management Services, Construction Management Support Services, Legal Services, and Metro Project Administration. The \$215.6 million in Expenditures to date represents 6.8% of the Current Budget.

#### PROJECT COST CONTINGENCY DRAWDOWN



#### PROJECT COST CONTINGENCY DRAWDOWN ANALYSIS

The current budget of \$2.8 billion, excluding finance charges, for the project includes an unallocated contingency amount of \$248.6 million. Also included within the current budget is an allocated contingency of \$75.0 million which is allocated, where applicable, to specific contracts within each Standard Cost Category (SCC) item. The allocated contingency is an amount to cover anticipated but unknown contract modifications issued by Metro. The total project cost contingency is \$323.6 million or 11.7% of total project cost.

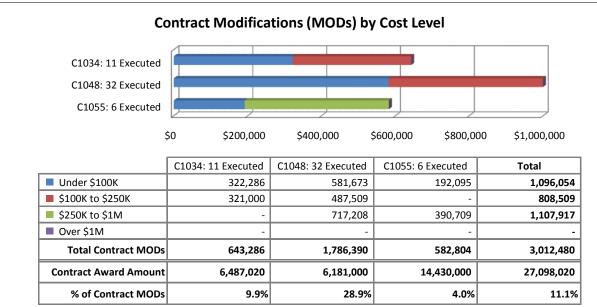
Included in the project cost contingency drawdown is a 3% project reserve threshold. Metro's Board is to be notified when it becomes necessary to drawdown contingency below the project reserve threshold to cover project costs. This was adopted by the Metro Board of Directors in September 2012.

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

# **DISADVANTAGED BUSINESS ENTERPRISE (DBE)**

# PROJECT LABOR AGREEMENTS (PLA) STATUS

#### **SUMMARY OF CONTRACT MODIFICATIONS**



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

Eleven Contract MODs with a total value of \$0.6 million have been executed since the award of Contract C1034 – Exploratory Shaft Construction by Innovative Construction Solutions (ICS).

Thirty-two Contract MODs with a total value of \$1.8 million have been executed since the award of Contract C1048 – Advanced Utility Relocations at Wilshire/La Brea by Metro Builders & Engineering Group, LTD.

Six Contract MODs with a total value of \$0.6 million have been executed since the award of Contract C1055 - Advanced Utility Relocations at Wilshire/Fairfax by W. A. Rasic Construction Company, Inc.

#### FINANCIAL/GRANT STATUS

NOVEMBER 2014	STATUS OF FUNDS BY SOURCE								
SOURCE	(A) ORIGINAL BUDGET	(B) TOTAL FUNDS	(C) TOTAL FUNDS	(D) COMMI	(D/B) TMENTS	(E) EXPEN	(E/B) IDITURES	(F) BILLED TO SOUR	
		ANTICIPATED	AVAILABLE	\$	%	\$	%	\$	%
FEDERAL - SECTION 5309 NEW STARTS	\$1,250.000	\$1,250.000	\$65.000	\$1,250.000	100%	\$65.000	5%	\$65.000	5%
FEDERAL CMAQ	\$12.171	\$12.171	\$0.000	\$0.000	0%	\$0.000	0%	\$0.000	0%
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	\$0.000	\$0.000	0%	\$0.000	0%	\$0.000	0%
MEASURE R 35%	\$869.178	\$869.178	\$255.104	\$716.140	82%	\$96.615	11%	\$70.333	8%
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	\$64.931	\$83.648	100%	\$50.898	61%	\$50.898	61%
CITY OF LOS ANGELES	\$75.273	\$75.273	\$0.000	\$0.000	0%	\$0.000	0%	\$0.000	0%
TOTAL	\$3,149.350	\$3,149.350	\$388.115	\$2,052.868	65.2%	\$215.593	6.8%	\$189.311	6.0%

EXPENDITURES ARE CUMULATIVE THROUGH OCTOBER 2014
ORIGINAL BUDGET BASED ON JULY 2014 BOARD APPROVED LOP BUDGET

#### STATUS OF FUNDS ANTICIPATED

**FEDERAL SECTION 5309 NEW STARTS:** FTA grant application of \$65 million was awarded on June 2, 2014. Funds are available for drawdown.

**FEDERAL SECTION 5309 ALTERNATIVE ANALYSIS:** FTA grant application of \$511.6 million was awarded on July 25, 2014. Funds are available for drawdown.

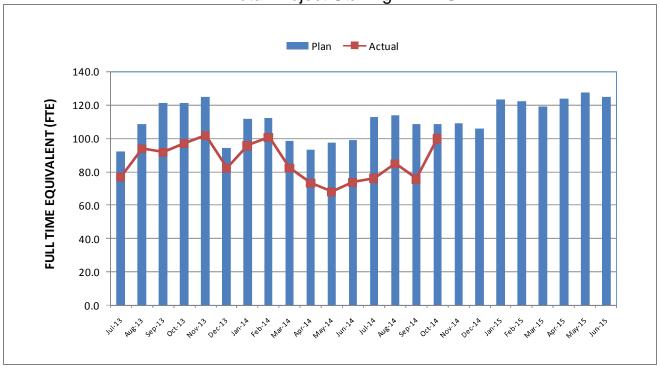
**MEASURE R – TIFIA LOAN (Transportation Infrastructure Finance & Innovation Act):** TIFIA Loan was executed on May 21, 2014 for \$856 million. First disbursement is planned for FY 2018.

**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.

<sup>\*</sup> OTHERS INCLUDE TDA ADMINISTRATION (\$4.1M), LTF GENERAL REVENUES (\$1.8M), AND LEASE REVENUES (\$37.8M)

**STAFFING STATUS** 

Total Project Staffing - FTES

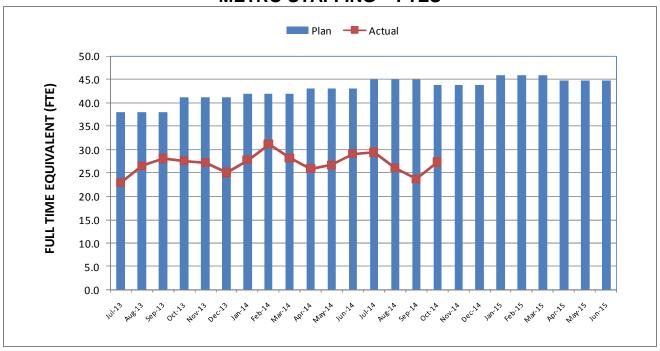


#### **TOTAL PROJECT STAFFING**

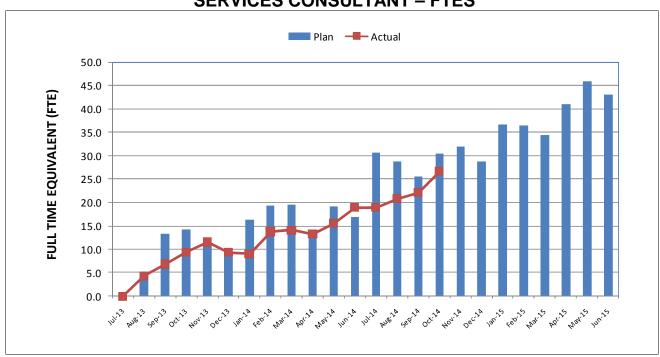
The overall FY15 Total Project Staffing plan averages 116.5 FTEs per month.

For October 2014, there were a total of 27.3 FTEs for MTA's Project Administration staff and 72.6 FTEs for consulting staff. The total project staffing for October 2014 was 99.9 FTEs.

# STAFFING STATUS (Continued) METRO STAFFING – FTES



# CONSTRUCTION MANAGEMENT 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 Signed	Condemnation Filed	Reloc Required	ations Completed	Parcels Available		
Full Takes	15	15	15	15	2	11	109	14	1		
Part Takes	2	2	2	2	0	2	0	0	0		
TCE	1	1	1	1	0	1	0	0	0		
Total Parcels	18	18	18	18	2	14	109	14	1		

#### **QUALITY ASSURANCE STATUS**

#### **C1034 Exploratory Shaft**

- Performed quality surveillance, S-042 of the placement of Controlled Low Strength Material (CLSM), grading inspection (City of Los Angeles) and field sampling and testing for acceptance purposes prior to providing contract closeout quality memo to the Project.
- Provided contract closeout quality memo to the project.

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

- Attended bi-weekly Project staff meetings and pre-construction meetings.
- Ongoing discussions with the Project staff to plan for EMSC/CMSC coordination and oversight.

#### C1048 - Advanced Utility Relocations - Wilshire/La Brea

- Attended weekly Project meetings with the Contractor.
- Coordination with CMSS Inspector. Reviewed daily inspection reports from the Contractor/Field Technician.
- Reviewed and provided comments on submittals.
- Met with the Contractor to discuss progress with the Non-Conformance Report, NCR-01.

#### C1055 - Advanced Utility Relocations - Wilshire/Fairfax

- Attended-weekly Project meetings with the Contractor.
- Reviewed and provided comments on submittals, including CWPs.
- Coordination with CMSS Inspector. Reviewed daily inspection reports from the Contractor/Field Technician.

#### **ENVIRONMENTAL STATUS**

- Noise and Volatile Organic Compounds (VOC) monitoring in support of AUR Contracts and basic oversight on SWPPP requirements.
- Continued review of Wilshire/Fairfax AUR submittals. Continued to finalize the Baseline Ambient Noise Report and adding 13 additional sensitive receptor locations. An additional seven locations are being proposed pending City of Beverly Hills approval of survey methods.
- Attended weekly progress meetings for Wilshire/Fairfax and Wilshire/La Brea AUR contracts.
- Held discussions with Saban Working Group and with City of Beverly Hills.
- Submitted Tree Removal Plan and Mitigation Plan for Wilshire/Fairfax, Wilshire/La
  Brea and Wilshire/Western locations. Plan was prepared by a qualified Registered
  Arborist. Waiting on response from City of Los Angeles.
- Working on 7<sup>th</sup> Quarter MMRP.
- Working on DTSC requirements regarding clearance of 590 S. Santa Fe (LOC 61S) MOW/NRV building site.
- Job walk held on November 21<sup>st</sup> for ACM/LBP/DEMO of 675 Crenshaw Blvd. residence, which is located in the center of the Wilshire/Crenshaw laydown yard. Current schedule indicates the work should be completed by the end of December 2014.

#### **CONSTRUCTION RELATIONS STATUS**

- Attended the following meetings: Pre-Construction, Construction Management, Advanced Utility Relocations, Exploratory Shaft, Construction Relations, Marketing/Informative Materials, Environmental Mitigations, City of Beverly Hills MOA, tree removal, replacement and landscape, groundbreaking preparations and bus stop relocation.
- Produced and distributed 11 construction work notices for advanced utility relocations.
- Gave Project Presentations to Senator Feinstein groundbreaking preparation, Carthay Circle Home Owners Association and Fairfax coordination construction projects.
- Visited and updated businesses and residences at future station locations to discuss utility relocations, business profiles and project area discounts.
- Fielded and addressed nighttime noise complaints at Wilshire/Fairfax, Wilshire/La Brea and Wilshire/Crenshaw Yard, Lorraine Avenue parking signage and validated parking for replacement spots in Beverly Hills.
- Updated Facebook/Twitter website as needed.

#### **CREATIVE SERVICES STATUS**

#### **Art Program**

Initiated preliminary meetings with artists.

#### Signage Design

• Customer Center sign removed.

#### **SAFETY & SECURITY STATUS**

- There were no recordable injuries on the Project during November 2014.
- Safety staff participated in scheduled readiness review meetings to ensure compliance with approved Work Plans and contract specifications.
- Construction activities (Advanced Utility Relocations and Exploratory Shaft Punch List) continue to be monitored during both day and night work shifts to ensure contractor compliance with contract specifications.
- Safety staff monitored and provided Licensed Underground Safety Representative and Gas Tester coverage for backfilling operations at the exploratory shaft.
- Safety staff attended weekly progress meetings and other project meetings to evaluate Contractors Safety Program compliance with contract requirements.
- 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.
- Work Hour and Injury statistics are reported with a one month lag. Contract C1048 failed to submit October hours report in time for this report. They will be included in the November report.
- October Contractor Work Hours (Design & Construction): 4,072
- Contractor Project to Date Work Hours (Design & Construction through 10/31/2014): 81,860
- Total Project to Date Work Hours (Contractor & the IPO Staff through 10/31/2014): 159,566
- Project to Date Recordable Injury Rate: 0.0 (Zero Recordable Injuries). Each rate is per 200,000 work hours.
- Project to Date Total Time Away Injury Rate: 0.0 (Zero Time Away From Work Injuries).
- Project to Date Total Days Away Rate: 0.0 (Zero Days Away From Work).

# Westside Purple Line Extension Section 1 Project Monthly Project Status Report

### THIRD PARTY AGREEMENT STATUS

Third Party	Type of Agreement	Forecast Execution Date	Required Need Date	Status/ Comments
City of Los Angeles (LA)	Amendment to Master Cooperative Agreement	N/A	N/A	Parties will work under 2003 MCA.
City of Beverly Hills (BH)	MOAs (La Cienega only)	9/14 (AUR) 3/15 (D/B)	9/14 (AUR) 9/15 (D/B)	City of Beverly Hills approved the MOA for the Wilshire/La Cienega AUR contract on August 19, 2014. Metro continues to work with the City to establish an MOA for the C1045 Design/Build contract.
Los Angeles Department of Water and Power	Amendment to Memorandum of Understanding	N/A	N/A	Metro and LADWP will continue to work under the terms of the previous Cooperative Agreement.
Los Angeles County Public Works	Letter of Agreement	4/11	3/12	Executed
Caltrans	Amendment	8/11	3/12	Executed
Private Utilities	LOA, MOU, MCA, or MUA	9/14	N/A	Metro is working with affected third party utilities under existing agreements except for Qwest and Level 3. Metro has provided comments to Qwest on the revised agreement. Awaiting Level 3 response to accept and honor an existing agreement in lieu of a new MCA. Metro's proposed MOU is being reviewed by SCE. In absence of an agreement, work is being performed by work orders.

#### **ADVANCED UTILITY RELOCATION STATUS**

- C1048 AUR for the Wilshire/La Brea Station was substantially completed on October 27, 2014. Punch list items are underway with an expected completion in December 2014.
- AT&T relocations at the Wilshire/La Brea Station are scheduled to be completed in March 2015. AT&T relocations at the Wilshire/Fairfax Station are scheduled to begin in December 2014.
- LADWP Power continued cable pulling at the Wilshire/La Brea Station site and is scheduled to be completed in January 2015. Southern California Gas relocations in the +same area are also scheduled to be completed in January 2015.
- The C1055 AUR contractor for Wilshire/Fairfax Station continues with submittals and power and water relocations.
- CES is continuing fiber relocations at the Wilshire/Fairfax Station and has completed the work at the Wilshire/La Cienega Station.
- The Notice of Intent to Award for the Wilshire/La Cienega AUR Contract (C1056) was issued on September 26, 2014. Contract award occurred on October 13, 2014 with a Notice to Proceed (NTP) planned for January 12, 2015.

#### 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.

- The Peak Hour Exemption for Wilshire/La Brea pile installation was approved by the City of Los Angeles on November 8, 2013.
- The Peak Hour Exemptions for Wilshire/Fairfax and Wilshire/Western pile installations were approved by the City of Los Angeles on May 12, 2014.
- The Nighttime Noise Variance for the Wilshire/La Brea and Wilshire/Fairfax Advanced Utility Relocation work was extended to February 17, 2015 by the Los Angeles Police Commission.
- A Nighttime Noise Variance application was submitted on June 19, 2014 for the Wilshire/La Cienega AUR contract for the area east of San Vicente Boulevard (City of Los Angeles). Metro received approval from the Los Angeles Police Department (LAPD) on July 3, 2014.
- Metro is working with the City of Los Angeles on a Peak Hour Exemption for the area near the La Cienega Station. This will accommodate the spillover of traffic control devices from the City of Beverly Hills into the City of Los Angeles.
- An exemption to the City of Los Angeles Holiday Moratorium was issued on October 27, 2014 to allow utility relocations to continue during the holiday season at both Wilshire/La Brea and Wilshire/Fairfax Stations.
- A new Nighttime Noise Variance application for pile installations at the Wilshire/Fairfax Station area will be submitted in late 2014.

### **CHRONOLOGY OF EVENTS**

	Office Country		
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	2 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		
,			

## **CHRONOLOGY OF EVENTS (Continued)**

July 2013	Completed Final Design - C1048 - Advanced Utility Relocations contract – Wilshire/La Brea	
July 2013	Submitted TIFIA loan application	
August 2013	Began C1048 Advanced Utility Relocations contract – Wilshire/La Brea	
August 2013	NTP for Construction Management 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.	
November 2014	Issued C1045 Contract Award	

### **CONTRACT C1034 STATUS**

Description: Exploratory Shaft Contractor: Innovative Construction Solutions (ICS)	Contract No. C1034 Status as of: November 28, 2014						
Progress / Work Completed:	Major Activities (In Progress):						
- Notice to Proceed: 01/15/13 - Demolition / site preparation: 04/05/13 - 06/17/13 - Site Utilities: 05/06/13 - 09/04/13 - Soldier Piles: 07/05/13 - 08/27/13 - Shaft excavation started: 09/03/13 - Shaft excavation to 15' depth: 10/18/13 - Shaft excavation to 20' depth: 11/01/13 - Shaft excavation to 32' depth: 11/30/13 - Shaft excavation to 44' depth: 12/27/13 - Shaft excavation to 58' depth: 01/31/14 - Shaft excavation to 66' depth: 02/28/14 - Shaft excavation to bottom of pit: 03/28/14 - Monitoring period began: 04/01/14 - Monitoring period completed: 09/22/14 - Backfill complete 10/22/14 - Substantial Completion 10/28/14 - Demobilized  Areas of Concern:  None	- Contract closeout  Major Activities Next Period:  - Complete contract closeout						
Schedule Summary:	Original Contract Dates Time Current Extension Contract CDs						
Date of Award: 11/26/12  Notice to Proceed: 01/15/13	Notice to Proceed 01/15/13 0 01/15/13 01/15/13 0						
Original Contract Duration: 669 CD Current Contract Duration: 669 CD	Milestone 1: 02/14/14 16 03/07/14 03/28/14 -21						
Elapsed Time from NTP: 669 CD	Milestone 2: Substantial Completion 11/15/14 0 11/15/14 11/15/14 0						
Physical Percent Complete:	Cost Summary: \$ In millions  1. Award Value: 6.5						
Physical completion: 99%*  * Note: Physical completion assessment reflects work completed and work in progress.	<ol> <li>Executed Modifications: 0.6</li> <li>Approved Change Orders: 0.0</li> <li>Current Contract Value (1+2+3): 7.1</li> <li>Incurred Cost: 6.4</li> </ol>						

### **CONTRACT C1048 STATUS**

Description: AUR - Wilshire/La Brea Contractor: Metro Builders & Engineers Group, Ltd.		Contract No. C1048 Status as of: November 28, 2014						
Progress / Work Completed:		Major Activities (In Progress):						
- Substantial Completion		- Contract closeout			<b>σ</b> γ.			
Areas of Concern: None		Major Activities Next Period: -Contract closeout & demobilization						
Schedule Summary:			Original Contract Dates	Time Extension	Current Contract	Forecast	Variance CDs	
Date of Award:	05/13/13	Notice to Proceed	08/01/13	0	08/01/13	08/01/13	0	
Notice to Proceed: Original Contract Duration: Current Contract Duration:	08/01/13 230 CD 452 CD	Milestone 1: Completion of LADWP Power Work	12/28/13	0	12/28/13	05/22/14	-145	
Elapsed Time from NTP:	452 CD	Milestone 2: Substantial Completion	03/18/14	150	08/15/14	10/27/14	-73	
Physical Percent Complete:  Physical completion: 99%*		1. Award Value:	Cost Summary:  1. Award Value: 2. Executed Modifications:			<b>\$ In millions</b> 6.2 1.8		
* Note: Physical completion assessment reflects work completed and work in progress.			<ul><li>3. Approved Change Orders:</li><li>4. Current Contract Value (1+2+3):</li><li>5. Incurred Cost:</li></ul>			0.0 8.0 7.9		

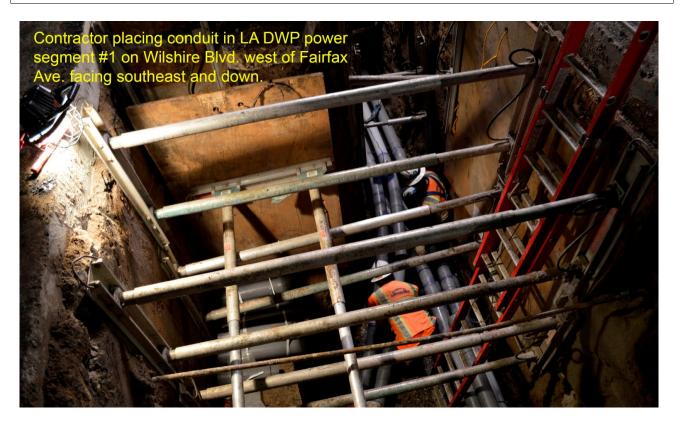
### **CONTRACT C1055 STATUS**

Description: Fairfax AUR Contractor: W.A. RASIC Construction Company, Inc.	Contract No. C1055 Status as of: November 28,2014						
Progress / Work Completed:	Major Activities (In Progress):						
- SCG line excavation	- Power on west on Wilshire - Power on Fairfax - La Brea waterline @Orange - Sound wall gate - La Brea waterline @Sycamore						
Areas of Concern: None	Major Activities Next Period:  - Waterline at La Brea begins  - Material fabrication & delivery  - Ductbank at Wilshire/Fairfax intersection continues  - Vault 702  - Vault 6011						
Schedule Summary:	Original Contract Contract Dates Time Current Contract CDs						
Date of Award:         03/28/14           Notice to Proceed:         05/01/14	Notice to Proceed 05/01/14 0 05/01/14 05/01/14 0						
Original Contract Duration: 535 CD Current Contract Duration: 535 CD	Milestone 1:						
Elapsed Time from NTP: 212 CD	Milestone 2: Power @ Fairfax 07/25/15 0 07/25/15 07/25/15 0						
	Milestone 3: Substantial Completion 10/18/15 0 10/18/15 10/18/15 0						
Physical Percent Complete:  Physical completion: 22%*  * Note: Physical completion assessment reflects work completed and work in progress.	Cost Summary: \$ In millions  1. Award Value: 14.4  2. Executed Modifications: 0.6  3. Approved Change Orders: 0.0  4. Current Contract Value (1+2+3): 15.0  5. Incurred Cost: 4.0						

### **CONSTRUCTION PHOTOGRAPHS**



C1055 Contractor Backfilling Power Trench on Fairfax Avenue



C1055 Contractor Performing Power Relocations on Wilshire Boulevard

# APPENDIX COST AND BUDGET TERMINOLOGY

#### **Project Cost Descriptions**

ORIGINAL BUDGET The Original Project Budget as authorized by the Metropolitan

Transportation Authority (Metro) Board (to be established).

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 Includes design engineering, project management assistance,

SERVICES 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

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

CMSC Construction Management 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

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

EMSC Engineering Management Services Consultant

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

## **Westside Purple Line Extension Section 1 Project Monthly Project Status Report**

## APPENDIX LIST OF ACRONYMS (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

LONP 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

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

## Westside Purple Line Extension Section 1 Project Monthly Project Status Report

## APPENDIX LIST OF ACRONYMS (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

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

SCAQMD Southern California Air Quality Management District

SCADA Supervisory Control and Data Acquisition

SCC Standard Cost Category SCE Southern California Edison

SCG Southern California Gas Company

SCRRA Southern California Regional Rail Authority

SHA State Highway Account

SHPO State Historic Preservation Office

SIT System Integration Testing SOQ Statement of Qualification

SOV Schedule Of Value SOW Statement Of Work

# APPENDIX LIST OF ACRONYMS (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

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