

# Crenshaw/LAX Transit Project



Metro<sup>®</sup>

# **CRENSHAW/LAX TRANSIT PROJECT**

## **QUARTERLY PROJECT STATUS REPORT**

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

**SEPTEMBER 2016**

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**PROJECT SUMMARY**

**CRENSHAW/LAX TRANSIT PROJECT**

**As of September 2016**

<b>LOCATION:</b> Crenshaw Blvd at Exposition to Green Line <b>DESIGN/CONSULTANT:</b> Hatch Mott				<b>CONSTRUCTION MANAGEMENT CONSULTANT:</b> Stantec <b>CONTRACTORS:</b> Walsh-Shea Corridor Constructors (Alignment) and Hensel Phelps / Herzog (Southwestern Yard)			
<b>PROJECT PHOTO:</b> Deck formwork starts for the Downtown Inglewood Station platform.				<b>WORK COMPLETED PAST MONTH:</b>			
				<ul style="list-style-type: none"> <li>o Continued tunnel segment production.</li> <li>o Commenced TBM mining of SB tunnel from MLK to Leimert Park.</li> <li>o Completed concrete placement of available lower walls at Expo Station and commenced lower level column construction.</li> <li>o Completed concrete placement of available lower walls at MLK Station.</li> <li>o Completed concrete placement of the invert slab at Vernon Station.</li> <li>o Continued street work at Park Mesa area.</li> <li>o Continued construction of Green Line superstructure.</li> <li>o Completed installation of all support of excavation bracing at UG#3.</li> <li>o Commenced falsework construction for I-405 bridge.</li> <li>o Completed footing and wall concrete placement for La Brea Station.</li> <li>o Completed northbound platform footing placement for Hindry Station.</li> </ul>			
<b>EXPENDITURE STATUS</b> (\$ In Millions)				<b>SCHEDULE ASSESSMENT</b>			
ACTIVITIES	CURRENT BUDGET	EXPENDED AMOUNT	PERCENT EXPENDED	MAJOR SCHEDULE ACTIVITIES	PRIOR PLAN	CURRENT PLAN	VARIANCE WEEKS
<b>DESIGN</b>	\$ 136.7	\$ 123.1	90.0%	<b>Environmental</b>			
				FEIS/FEIR	Sep-11	Sep-11	Complete
				Record of Decision	Dec-11	Dec-11	Complete
<b>RIGHT-OF-WAY</b>	\$ 127.4	\$ 120.6	94.6%	<b>Design</b>			
				Preliminary Engineering	Nov-11	Nov-11	Complete
				Final Design	Sep-15	May-17	20.5 months behind
<b>CONSTRUCTION</b>	\$ 1,353.1	\$ 644.6	47.6%	<b>Right-of-Way</b>			
				Full-take parcels available	Jan-15	Jan-15	Complete
				Part-take and TCE parcels	Sep-15	Apr-16	Complete (base scope)
<b>OTHER</b>	\$ 440.8	\$ 159.9	36.3%	<b>Construction</b>			
				D-B Notice to Proceed	Sep-13	Sep-13	Complete
				D-B Substantial Complete	Oct-18	May-19	7.2 months behind
				Revenue Service Date	Oct-19	Oct-19	On schedule*
<b>TOTAL</b>	\$ 2,058.0	\$ 1,048.1	50.9%	The D-B Substantial Complete prior plan has been modified by a 35-day concurrent delay contract modification in March 2015 and six-day modification in September 2016.			
Note: Cost expended as of Sept. 30, 2016.				*Note: Revenue Service Date includes a significant reduction in contingency.			
<b>AREAS OF CONCERN</b>				<b>CRITICAL ACTIVITIES / 3 MONTH LOOK AHEAD</b>			
<ul style="list-style-type: none"> <li>o Design-builder's ability to mitigate schedule delays.</li> <li>o Timely submittal of WSCC's design submittals and review by City of Los Angeles.</li> <li>o 96th street station accommodations cost/schedule impacts.</li> <li>o Ability of TBM to meet production rate forecasted on schedule.</li> </ul>				<ul style="list-style-type: none"> <li>o Complete TBM mining SB tunnel from MLK to Leimert Station.</li> <li>o Commence TBM mining NB tunnel from Expo to MLK Station.</li> <li>o Complete Green Line superstructure.</li> <li>o Complete Manchester Bridge superstructure.</li> <li>o Complete invert slab at Underground Structure #4.</li> <li>o Complete the structural concrete work for Century Station.</li> <li>o Commence trackwork in Segment B1.</li> </ul>			
<b>ROW ACQUISITION</b>	PLAN	ACQUIRED	REMAINING				
FULL TAKES	37	35	2				
PARTIAL TAKES	27	25	2				
TEMPORARY EASEMENTS	15	13	2				
<b>TOTAL PARCELS</b>	79	73	6				

## **PROJECT OVERVIEW**

### **Contract Closeout**

**Contract C0990** - The advanced utility relocations contract with Metro Builders and Engineers Group, LTD was substantially completed on August 21, 2014. The Metro Board authorized a final settlement in March 2016 on all remaining issues. *A final payment was issued to the contractor in April 2016 and the contract is projected to be closed out by October 7, 2016.*

**Contract C0992** – The concrete ties contract with Rocla Concrete Tie Inc., was substantially completed on August 15, 2014. The contractor was paid in full and the contract was closed out.

**Contract C0992A** – The running rail and bumping posts contract with LB Foster Rail Technology Corp was substantially completed on May 8, 2015. The contractor was paid in full and the contract was closed out.

**Design- Build Contract C0988 (Alignment)** – The design-builder, Walsh-Shea Corridor Constructors (WSCC) continues remaining base final design and change work. Construction efforts by the design-builder continued along all major areas. The major construction activity this month on the Project's critical path is the continuing of mining operations. *After the hole thru at MLK Station on August 22, 2016, the contractor repositioned the TBM at the south end of the Station and commenced tunnel boring of the south bound tunnel from MLK Station to Leimert Park Station. The contractor plans to complete excavation by end of October.*

**Design- Build Contract C0991 Southwestern Yard (Division 16)** – The design-builder, Hensel Phelps / Herzog JV was issued a notice-to-proceed on June 29, 2015. The design-builder continues final design and submission of required submittals. Design activities continued including reconciliation of various design packages. Contractor commenced construction activities in May 2016. *The contractor continues critical path work such as structural excavation and concrete placement of main shop building service and inspection pits, deep foundations, grade beams and blow down pits.*

### **Right-of-Way**

Metro added in January 2016, two full takes and five part-takes/TCE's required for the construction of the Project. There are now a total of 79 parcels (four have been decertified). There are 37 full takes, 27 partial takes and 15 temporary construction easements (TCE's). *There have been 73 parcels acquired through September 30, 2016. Thirty-five full takes, 25 part-takes and 13 TCE's have been provided to the design-builder WSCC.*

### **Systems**

*Metro staff initiated a study to explore possible alternative layouts to accommodate the central control functions associated with new project needs, such as Crenshaw/LAX project, within the existing ROC facility as an interim measure. Metro has determined that the best course of action is to expand the existing functional operations at the ROC to support the new five new rail lines and extensions including Foothill Ext., Expo II, Crenshaw/LAX, Regional Connector and Purple Extension Projects. The existing ROC service control and closed circuit television monitoring areas are being expanded and reconfigured for each new rail line extension. The*

## **PROJECT OVERVIEW (Continued)**

*supporting facilities and electrical/communication systems are also expanded and upgraded accordingly to suit the needs of the growing Metro operations. The ROC Reconfiguration Plan will be updated to suit the central control needs of each upcoming new rail line extension. Metro will prepare a design update for the Crenshaw/LAX Project. All work for the ROC is planned to be completed concurrently with the C0988 design-builder scope work to ensure continuity of the systems effort.*

### **Program Management**

In May 2013, the Board approved a Motion that amended the fiscal year 2014 Proposed Metro Budget to include funding for an underground station at Leimert Park Village and an at-grade station at Hindry as part of the baseline project. This Motion added \$135 million to the LOP budget which included \$80 million in uncommitted fiscal year 2014 funding and \$55 million from the City of Los Angeles. Metro reached agreement with the City of Los Angeles to cover the incremental cost of the stations above the \$80 million identified in fiscal year 2014 funding which the Metro Board approved in May 2013.

With board approval on June 27, 2013, the additional \$135 million is included in the sources of funds chart as well as the additional \$160.1 million for the increased cost of the base work. All recommendations were approved by the Board on June 27, 2013 except that change order authority was maintained at \$500,000. This board action amended the life of project budget to \$2,058 million.

The Board approved on May 28, 2015 an increase in the amount of funding that the Crenshaw/LAX Project is contributing toward the total cost of the Southwestern Yard Project. An additional \$10.8 million is required to be funded by drawdown from the Unallocated Contingency Current Budget SCC 90 and added to the Southwestern Yard Current Budget SCC 30. The current budget includes the 49% cost allocation share that the project is responsible for paying which includes funding of the design and construction for the Southwestern Yard. This amount is revised to \$150.2 million out of a new total of \$307.2 million adopted by the Board.

The amount of funding available for the Crenshaw/LAX Transit Corridor Project, excluding the Southwestern Yard \$150.2 million allocation and Environmental/Planning budget of \$26.0 million is \$1,881.8 million.

The LOP budget is funded by various sources of funds which include local, state and federal funding. The TIFIA Loan is categorized under local funds as the loan is secured by a pledge of Measure R local sales tax funds. The funding percentages are as follows: local funding 79.9%, (includes Measure R TIFIA Loan), state funding 10.5% and federal funding 9.6%.

## **PROJECT OVERVIEW (Continued)**

*The project commitments thru September 2016 are \$1,890 million or 91.9 % of the Current Budget. The project expenditures thru September 2016 are \$1,048.1 million or 50.9% of the Current Budget.*

The current period expenditures are for design-builders monthly design and construction costs and professional services costs such as construction management and administrative staffing. The expenditures to date also include the Southwestern Yard expenditures that are part of the 49% cost allocation share that the Project is responsible for paying for. The 51% cost allocation is reported within another internal project number and the total costs for the Southwestern Yard project is included in the Appendix.

*This month the project schedule reflects a seven (7) calendar day delay in project status. Metro is reporting a projected 220 calendar day delay to the design-builder's contract substantial completion milestone (forecast 2019).*



## **MANAGEMENT ISSUES**

**Concern No. 1: (CLOSED)** Execution of 3% Local Match funding agreement with the City of Inglewood.

**Status/Action** *Metro staff and the City of Inglewood staff have negotiated a contribution agreement. The agreement was approved by the Inglewood City Council in August 2016. The Metro Board approved the agreement in September 2016. The total face value of the contribution is \$12.0 million which is less than the programmed \$17.8 million. Based on the terms of the agreement none of the \$12.0 million will be provided during construction of the project so substitute funds will need to be identified to replace the total \$17.7 million originally planned as the City contributions. The funding sources will be determined through the Long Range Transportation Plan update process.*

**Concern No. 2:** Timely future reviews of WSCC final design submittals by City of Los Angeles.

**Status/Action** There are a few remaining final design submittals that are required to be submitted by the Contractor for City of Los Angeles review. Metro will continue to take action and strictly monitor the review comments from the agencies. Ensure WSCC submittals are coordinated, quality checked and submitted within necessary timeline for reviews.

**Concern No. 3:** Design-builders construction schedule

**Status/Action** *This month the project schedule reflects a seven (7) calendar day delay in project status. Metro is reporting a projected 220 calendar day delay to the design-builder's contract substantial completion milestone (forecast 2019).*

**Concern No. 4:** Cost and schedule impacts on the Crenshaw/LAX Transit Project to accommodate the future Airport Metro Connector Transit Station at 96<sup>th</sup> Street.

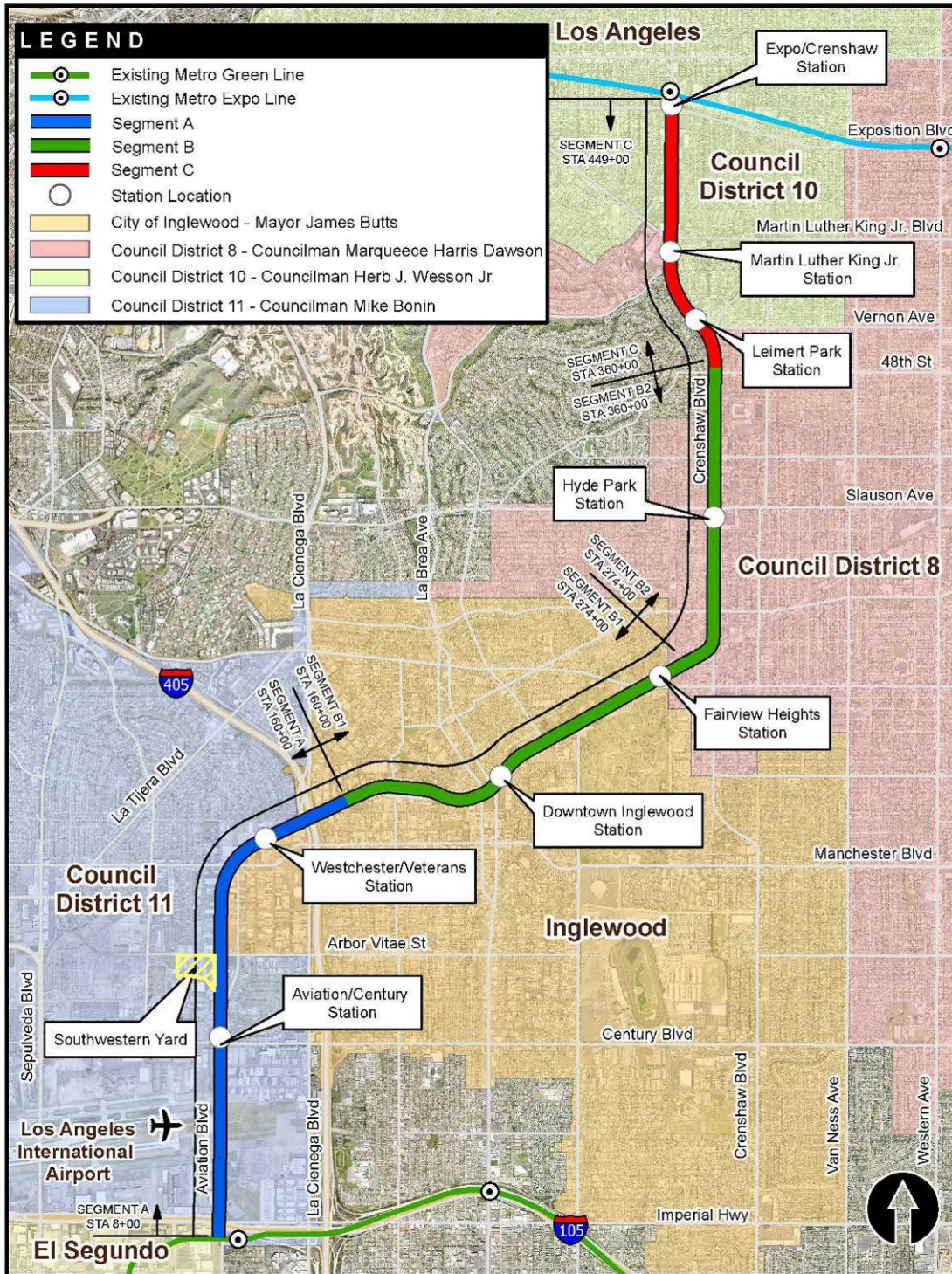
**Status/Action** In May 2015, the Metro Board approved Design Option 3 implementing changes required to the design-builder's design to accommodate the ultimate track configuration required for the future Airport Metro Connector Transit Station. The Metro Board approved \$7,400,000 for the direct construction costs for FY17, which was required to commence construction to prevent any additional schedule delay impact to the Project. The design submittal milestones to date have been completed earlier than planned. Metro continues to work with the design-builder to minimize impacts to construction. Metro is continuing to negotiate with the design-builder on the total time the work will take to accommodate the future Airport Metro Connector Transit Station. Any modifications to WSCC for this scope of work are not funded by the Crenshaw/LAX Transit Project but are funded by other funding sources.

## **MANAGEMENT ISSUES (Continued)**

**Concern No. 5:** Design-builder's ability to meet their planned tunneling productivity rate.

**Status/Action** After an initial learning curve the contractor plans to achieve a rate of 74 feet per work day tunneling toward MLK Station and 93 feet per work day tunneling from MLK Station to Leimert Park Station. *Thru the end of September 2016, the contractor is achieving an average of 40 feet per work day.* Metro is closely monitoring the daily production rate and is concerned about the ability of TBM to meet production rate forecasted on schedule.

**PROJECT ALIGNMENT**



## **PROJECT SCOPE**

The Crenshaw/LAX Transit Corridor is a north/south corridor that serves the cities of Los Angeles, Inglewood, Hawthorne and El Segundo as well as portions of unincorporated Los Angeles County. The alignment extends 8.5 miles, from the intersection of Crenshaw and Exposition Boulevards to a connection with the Metro Green Line at the Aviation/LAX Station. The project provides major connections with the Los Angeles International Airport (LAX) as well as links to the Metro Green Line, the Exposition Line and countywide bus network. The Board adopted a light rail system as the Locally Preferred Alternative (LPA) in December 2009.

The alignment is comprised of a double-tracked right-of-way consisting of sections of at-grade in-street, at-grade within railroad right-of-way, aerial, and below-grade guideway sections, eight stations, park and ride facilities at three locations, utilities, landscaping, roadway improvements required by the project and a maintenance & storage facility (Southwestern Yard).

The scope of work for the three construction contracts and two owner-supplied equipment contracts is shown below.

### **Contract C0990 Crenshaw/LAX Advanced Utility Relocations**

The design of several early utility relocations was advanced sufficiently into final design to allow for bidding of critical early utility relocations. This contract includes relocating three (3) existing duct banks that feed various NAVAIDS on the south airfield complex. New ductbank infrastructure will be built by Metro with the fiber replacement work and cut-over by FAA/LAWA. These ductbanks contain fiber lines and power lines which belong to both LAWA and FAA. Since the track alignment is below grade at these crossings, the ductbanks have to be relocated in advance to allow for the construction of the track alignment. In addition, other wet utilities along the Harbor Branch and Crenshaw Boulevard segments of the corridor that can be relocated in advance are included as part of this contract.

The project delivery method for this contract was bid-build Invitation for Bid (IFB).

### **Design-Build Contract C0988 Crenshaw/LAX Transit Corridor**

This is the largest project contract which will complete final design and construction of the infrastructure required along the corridor alignment. The structures required to be constructed are eight stations, grade separations including flyover structures, cut and cover trenching, tunneling and three park-n-ride facilities. The scope of work will include all the necessary systems work including train control, traction power supply substations and distribution, overhead catenary, communications, and systems tie-in to the existing Metro Green Line. The project delivery method for this contract was design-build utilizing a two-step best value procurement approach with submittal of qualification statements through a RFQ process, pre-qualification of qualified proposers followed by release of a RFP soliciting technical and price proposals with an option at Metro's discretion for best and final offers (BAFO).

## **PROJECT SCOPE (Continued)**

### **Design-Build Contract C0991 Southwestern Yard**

The Board-adopted 2009 Long Range Transportation Plan (LRTP) for Los Angeles County envisioned one new central Light Rail Transit (LRT) Maintenance facility to be used by all projects. Since the LRTP adoption, substantial progress on light rail system planning and development, including more accurate vehicle assignments, cost estimates, and functional requirements, has led Metro to conclude that two new LRT yards, an Eastern Yard and a Southwestern Yard, are necessary. This contract will construct the Southwestern Yard which will consolidate maintenance facility requirements for this project as well as the operating Metro Green Line, proposed South Bay Metro Green Line Extension and proposed Metro Green Line to LAX. The cost of constructing the Southwestern Yard will be proportionately split among the four projects.

The project delivery method for this contract was a two-step design-build IFB approach.

### **Owner-Supplied Equipment - Contract C0992 Crenshaw/LAX Concrete Ties and Assembly Items**

Metro added a contract for procuring owner-supplied equipment for the Design-Build Contract C0988 Crenshaw/LAX Transit Corridor Contractor. The equipment within the contract scope of work includes concrete ties and assembly items.

The project delivery method for this contract was bid-build IFB approach.

### **Owner-Supplied Equipment - Contract C0992A Crenshaw/LAX Rail and Bumping Posts Procurement**

Metro added a contract for rebidding the procurement of running rail and bumping posts for the Design-Build Contract C0988 Crenshaw/LAX Transit Corridor Contractor.

The project delivery method for this contract was bid-build IFB approach.

### **Start Up**

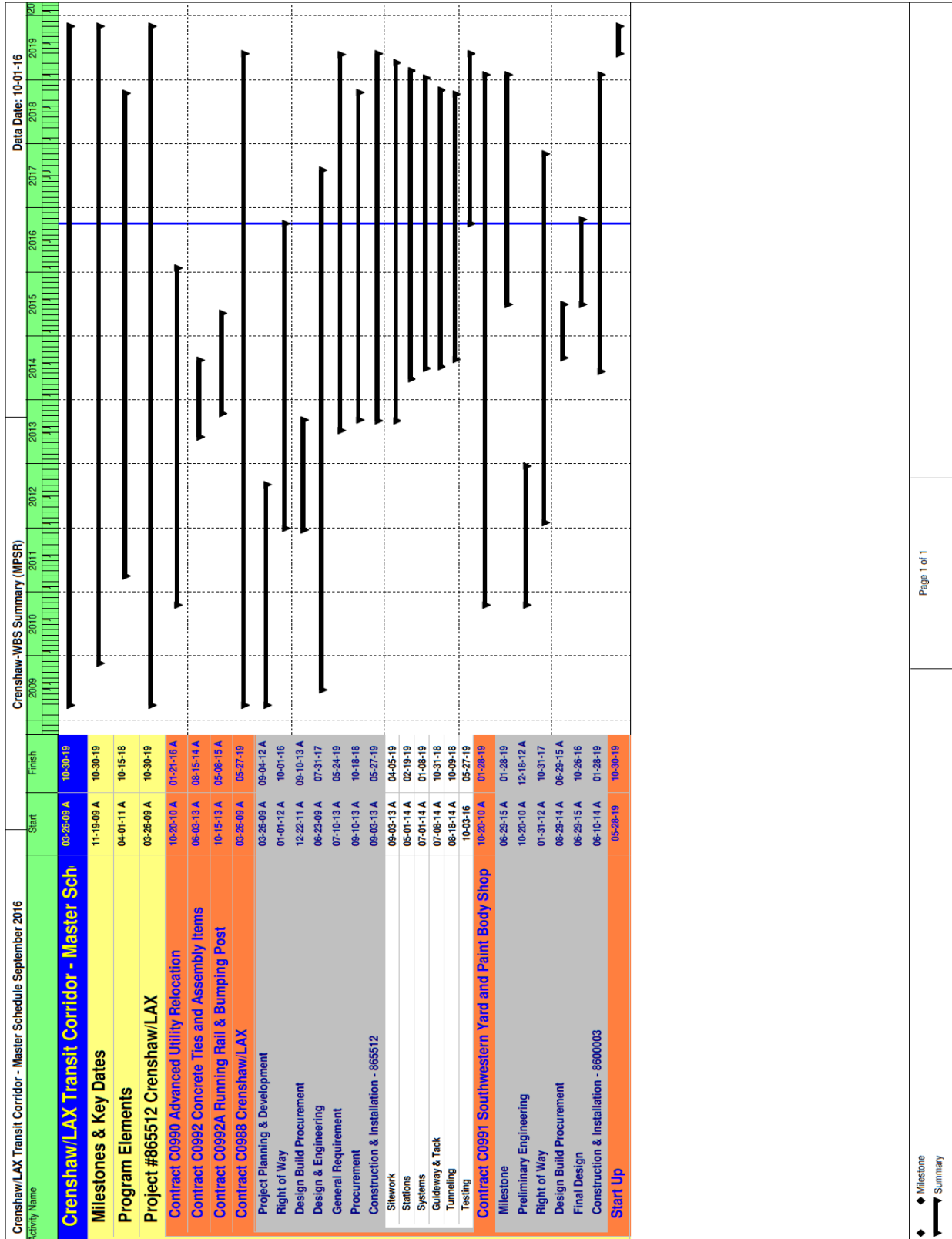
The commencement of pre-revenue operations will be determined by Metro Operations. The design-builder will have completed Phase I systems integration testing (SIT) and Metro will have subsequently completed and passed Phase II SIT. Metro may conduct some Phase II SIT efforts concurrently with the start of pre-revenue operations at the discretion of Metro Operations. All testing will be required to include and pass a "stress test" of maximum operational service levels to be acceptable. Pre-revenue operations includes: 1) train runs, especially those involving multiple trains, on the integrated and fully operational extension; 2) rehearsal of expected revenue operations scenarios; 3) as well as abnormal and emergency scenarios in which random combinations of system interactions are tested; 4) equipment "burned-in"; and 5) 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	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
C0988	R&R - Water Vault & Detector Check Valve Assembly [btn Imperial Hwy & 111th St.] - UT# 1052	20 - Oct - 16						
C0988	TPSS-01 Permanent Power Drop - SCE - Procurement of Cable and Equipment	20 - Oct - 16						
C0988	SIP - 21" RCP Storm Drain 6' NCL of 63rd St [63rd St] - UT# 1316	11 - Oct - 16						
C0988	R&R - 18" RCP Storm Drain Lateral [btn 48th St & Brynhurst Ave] - UT# 1361	14 - Oct - 16						
C0991	Completion of Design (Substantial Completion)	26 - Oct - 16						
C0988	TPSS-01 Permanent Power Drop - SCE - Utility Install Infrastructure and conduit	09 - Nov - 16						
C0988	TPSS-02 Permanent Power Drop - LADWP - Procurement of Cable and Equipment	09 - Nov - 16						
C0988	TPSS-06 Permanent Power Drop - SCE - Utility Install Infrastructure and conduit	29 - Nov - 16						
C0988	TPSS-02 Permanent Power Drop - LADWP - Utility Install Infrastructure and conduit	29 - Nov - 16						
C0988	Install DF Track - STA 200+50 to 201+33 - (La Brea Overcrossing) - Seg. B - SEGMENT 03	05 - Dec - 16						
C0988	Third Party Relocation - LADWP Water Requested Relocation - [Seg B-2 South Area] - UT# 1301, 8006 -	12 - Dec - 16						
C0988	Major PIP 54th ST/ Crenshaw Blvd 8-4" Telephone line 339+25 UT #1343 - Construction	12 - Dec - 16						
C0988	R&R 18" COLA RCP Storm Drain (Aviation and 104th St.) - UT# 2079- Procurement/Planning	15 - Dec - 16						
C0988	TPSS-05 Permanent Power Drop - SCE - Utility Install Equipment	08 - Jan - 17						
C0988	Construct Ballasted Track - STA 59+93 to 65+92 - RW 3 (RW60) - Seg. A	09 - Jan - 17						
C0988	TPSS-07 Permanent Power Drop - LADWP - Utility Install Equipment	12 - Jan - 17						
C0988	R&R 18" COLA RCP Storm Drain (Aviation and 104th St.)-UT# 2079 - Construction	16 - Jan - 17						
C0988	Install Ties - STA 201+33 to 274+25 - Seg. B1	30 - Jan - 17						
C0988	Construct Century Boulevard Future Right Turn Lane (LAWA)	07 - Feb - 17						
C0988	Install DF Track - STA 118+70 to 121+31 - Manchester Bridge - Seg. A	15 - Feb - 17						
C0988	Install Rail - STA 201+33 to 274+25 - Seg. B1	21 - Feb - 17						
C0988	TPSS-07 Permanent Power Drop - LADWP - Utility Terminations and Cable Testing	21 - Feb - 17						
C0988	Construct Underground Structure HDPE Geomembrane Cushion	22 - Feb - 17						
C0988	Install Top Ballast - STA 201+33 to 274+25 - Seg. B1	03 - Mar - 17						
C0988	Construct #10 Siding Track @ Sta 244+00 - Seg. B	21 - Mar - 17						
C0988	Construct #10 Crossover @ Sta 102+00 - Seg. A	22 - Mar - 17						
C0988	Final Ballast, Regulate & Destress Track - STA 92+86 to 118+70 - Seg. A	23 - Mar - 17						

MTA Staff    
 MTA Board Action    
 Walsh Shea    
 Hensel Phelps  
 "A" following date is actual and completed

## PROJECT SUMMARY SCHEDULE

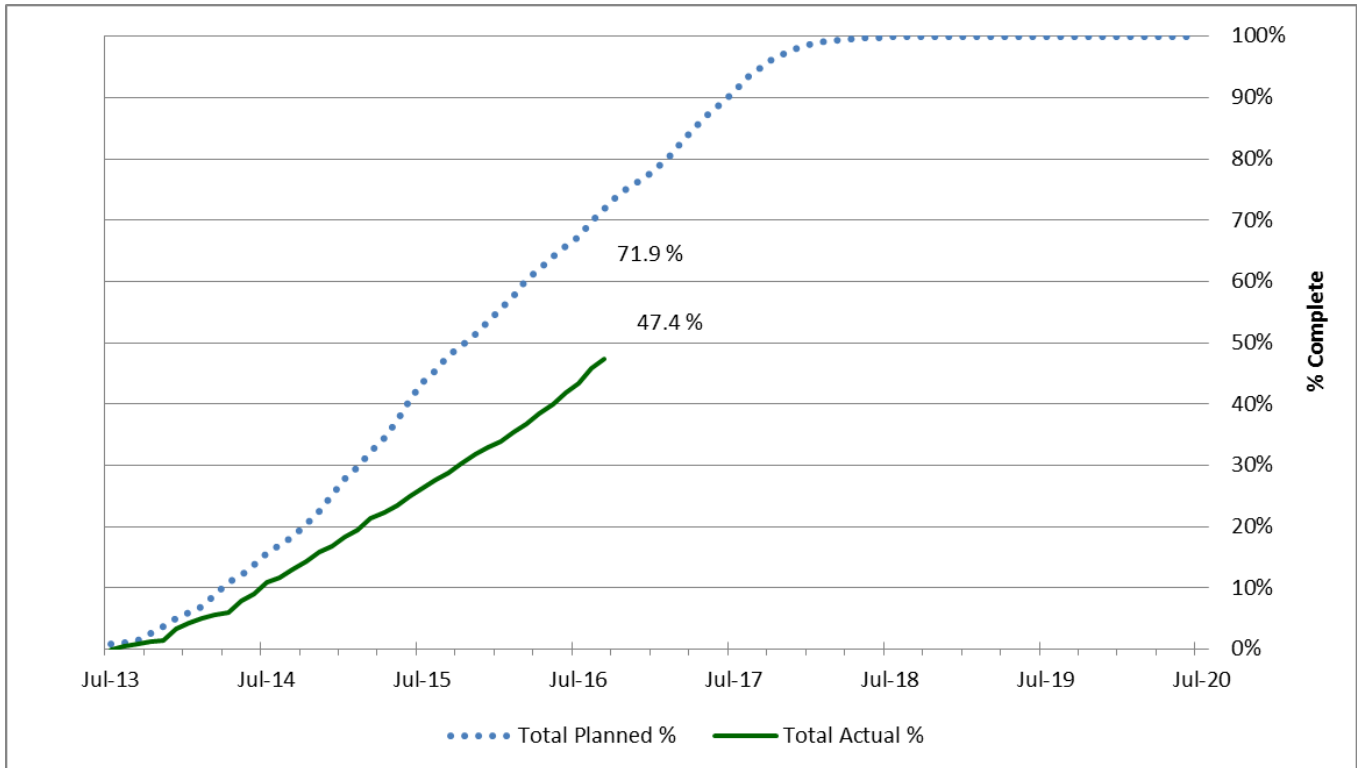


**SCHEDULE MEASUREMENTS**

	Status	Change from Last Period	Comment
Current Revenue Service:	10/30/2019	None	
Forecast Revenue Service:	10/30/2019	None	
TIFIA Revenue Service:	10/30/2019	None	
<b>Final Design Progress:</b>			
Contract C0988	97.6%	0.1%	Behind Schedule
Contract C0990	100%	None	Design Completed
Contract C0991	70.5%	3.0%	On Schedule
Contract C0992	100%	None	Design Completed
Contract C0992A	100%	None	Design Completed
<b>Construction Contracts Progress:</b>			
Contract C0988	41.3%	1.7%	Behind Schedule
Contract C0990	100%	None	Substantially Completed
Contract C0991	2.4%	0.7%	Construction Started May 2016
Contract C0992	100%	None	Substantially Completed
Contract C0992A	100%	None	Substantially Completed



## OVERALL CONSTRUCTION PROGRESS CURVE STATUS



The actual overall construction progress is 47.4% versus a planned progress of 71.9% through September 2016. 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 (C0988), advance utility relocation (C0990), and two equipment procurement contracts-concrete ties (C0992) and running rail (C0992A).

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 STATUS**

**Tunnel Boring Machine**

WSSC, the design-builder for Contract C0988, will procure the tunnel boring machine (TBM) and equipment. Following are the major milestone dates for TBM:

	Baseline	Jul-16	Aug-16	Monthly Variance
Submit Final Design Details for TBM	01/03/14	04/01/15A	04/01/15A	
Fabricate & Deliver TBM	09/22/14	11/21/14A	11/21/14A	
Procure & Deliver TBM Rolling Stock & Accessories	06/23/14	03/02/15A	03/02/15A	
TBM SB Tunnel Launch at Expo	04/28/15	04/27/16A	04/27/16A	
TBM SB Break through at Leimert Park	09/17/15	10/10/16	10/17/16	-7
TBM NB Tunnel Launch at Expo	10/29/15	11/25/16	12/02/16	-7
TBM NB Break through at Leimert Park	03/21/16	03/28/17	04/04/17	-7

**Light Rail Vehicles**

The Board approved exercising Option 1 of Contract P3010 with Kinki Sharyo International to provide light rail vehicles (LRV) for the Crenshaw/LAX project. The total number of vehicles in the option is 28 which include 20 LRVs for the Crenshaw/LAX project and two additional cars for spares.

The first two pilot cars for the initial order of cars (non-option) were ready on July 7, 2015; then four cars were planned to be delivered every month starting from Aug 2015 with the last group of cars to be delivered in Jan 2017. However, the production rate of four cars per month has only recently been achieved. The contractor has to achieve a higher production rate to complete production of base work by January 2017.

Mobilization of Option 1 will commence after completion of the initial order. First delivery of Option 1 cars will be February 2017 and the last of the cars in September 2017.

**Ticket Vending Machines**

Procurement of the ticket vending machines will commence after the design-builder completes final design and the total requirements for the project are known. Plan is to initiate change notice to the existing TVM contractor by November 2016 with a planned notice to proceed by August 2017.

**Concrete Ties and Assembly Items**

All 19,936 concrete ties have been delivered to the job.

**Running Rail & Bumping Post**

All required running rail & bumping post have been delivered to the job site.

**DESIGN-BUILDER'S (C0988) LONG LEAD ITEM LIST**

Item	Initiate Procurement	Submittal Needed By	Delivery	Installation Date
Tunnel Boring Machine	Executed	Complete	Completed	9/1/2015
Stations- Elevators	Executed	3/25/2015	Pits 10/5/15	Pits 10/5/15
Stations- Escalators	Selected	5/22/2015	7/1/2016	10/5/2016
Track- Special Trackwork	Selected	3/21/2015	10/26/2015	11/12/2015
Track- Restraining Rail and Grade Crossing Ties	4/13/2015	5/1/2015	2/10/2016	4/1/2016
TPSS- Substation 1	4/8/2015	5/23/2015	4/2/2016	6/1/2016
TPSS- Substation 2	6/8/2015	7/23/2015	6/2/2016	8/1/2016
TPSS- Substation 3	8/10/2015	9/24/2015	8/4/2016	10/3/2016
TPSS- Substation 5	10/8/2015	11/22/2015	10/2/2016	12/1/2016
TPSS- Substation 6	1/7/2016	2/21/2016	1/1/2017	3/2/2017
TPSS-Substation 7	3/7/2016	4/21/2016	3/2/2017	5/1/2017
TPSS- Substation 8	1/7/2016	2/21/2016	1/1/2017	3/2/2017
TPSS- Substation 9	12/9/2016	1/23/2016	12/3/2016	2/1/2017
Train Houses	3/1/2015	5/30/2015	3/27/2017	5/1/2017
OCS Poles	3/1/2015	5/30/2015	6/27/2016	8/1/2016
Traffic Signal Poles	3/15/2015	4/15/2015	8/1/2015	6/1/2015
LED Lighting Figures	3/15/2015	4/15/2015	8/1/2015	3/1/2016
Jet Fan- UG3	5/5/2016	4/7/2016	12/31/2016	3/1/2017
Jet Fan- UG4	11/5/2016	1/4/2017	7/3/2017	9/1/2017
Artwork- Century	1/6/2016	3/6/2016	9/2/2016	11/1/2016
Artwork- Hindry	1/6/2016	3/6/2016	9/2/2016	11/1/2016
Artwork- La Brea	11/6/2015	1/5/2016	7/3/2016	9/1/2016
Artwork- West	4/7/2016	6/6/2016	12/3/2016	2/1/2017
Artwork- Slauson	10/5/2016	12/4/2016	6/2/2017	8/1/2017
Artwork-Vernon Concourse	2/4/2017	4/5/2017	10/2/2017	12/1/2017
Artwork- Vernon Plaza	10/5/2016	12/4/2016	6/2/2017	8/1/2017
Artwork- MLK Concourse	2/4/2017	4/5/2017	10/2/2017	12/1/2017
Artwork- MLK Plaza	4/7/2017	6/6/2017	12/3/2017	2/1/2018
Artwork- Expo Concourse	7/5/2017	9/3/2017	3/2/2018	5/1/2018
Artwork- Expo Plaza	7/5/2017	9/3/2017	3/2/2018	5/1/2018
TVM- Century	N/A	7/5/2015	1/1/2016	3/1/2016
TVM- Hindry	N/A	4/5/2016	10/2/2016	12/1/2016
TVM- La Brea	N/A	9/3/2016	3/2/2017	5/1/2017
TVM- West	N/A	7/4/2016	12/31/2016	3/1/2017
TVM-Slauson	N/A	11/3/2016	5/2/2017	7/1/2017
TVM- Vernon	N/A	2/3/2017	8/2/2017	10/1/2017
TVM- MLK	N/A	3/6/2017	9/2/2017	11/1/2017
TVM- Expo	N/A	5/6/2017	11/2/2017	1/1/2018
Trees and Landscaping- La Brea	8/6/2015	10/5/2015	4/2/2016	6/1/2016
Irrigation and Landscape Planting- MLK	2/4/2017	4/5/2017	10/2/2017	12/1/2017
Landscape- West Park and Ride	8/6/2015	10/5/2015	4/2/2016	6/1/2016
Traffic Signal Controllers- Market and Florence	9/3/2014	11/2/2014	5/1/2015	6/30/2015
Traffic Signal Controllers- Locust Bus Bay and Florence	9/10/2014	11/9/2014	5/8/2015	7/7/2015
Traffic Signal Controllers- 111th and Aviation	3/11/2015	5/10/2015	11/6/2015	1/5/2016
Traffic Signal Controllers- Imperial and Aviation	11/26/2015	1/25/2015	7/23/2016	9/21/2016
Traffic Signal Controllers- Florence and High	4/17/2015	6/16/2015	12/13/2015	2/11/2016
Traffic Signal Controllers- Centinela and Florence	5/8/2015	7/7/2015	1/3/2016	3/3/2016
Traffic Signal Controllers- West and 71st	5/8/2015	7/7/2015	1/3/2016	3/3/2016
Traffic Signal Controllers- Hindry and Florence	1/1/2016	3/1/2016	8/28/2016	10/27/2016
Traffic Signal Controllers- La Brea and Florence	2/6/2016	4/6/2016	10/3/2016	12/2/2016
Traffic Signal Controllers- 104th and Aviation	9/30/2015	11/29/2015	5/27/2016	7/26/2016
Traffic Signal Controllers- Oak and Florence	3/5/2015	5/4/2015	10/31/2015	12/30/2015
Traffic Signal Controllers- Cedar and Florence	3/5/2015	5/4/2015	10/31/2015	12/30/2015
Traffic Signal Controllers- Eucalyptus and Florence	3/5/2015	5/4/2015	10/31/2015	12/30/2015
Traffic Signal Controllers- Ivy Florence and Cable	3/5/2015	5/4/2015	10/31/2015	12/30/2015
Traffic Signal Controllers-Century and Aviation	3/5/2015	5/4/2015	10/31/2015	12/30/2015
Traffic Signal Controllers- La Cienega and Florence	8/1/2016	5/4/2015	10/31/2015	12/30/2015
SF6 Gas Insulated Switches * Metro top/bottom	3/13/2015	6/1/2015	8/2/2016	10/1/2016

## **CRITICAL PATH NARRATIVE**

**Critical Path:**

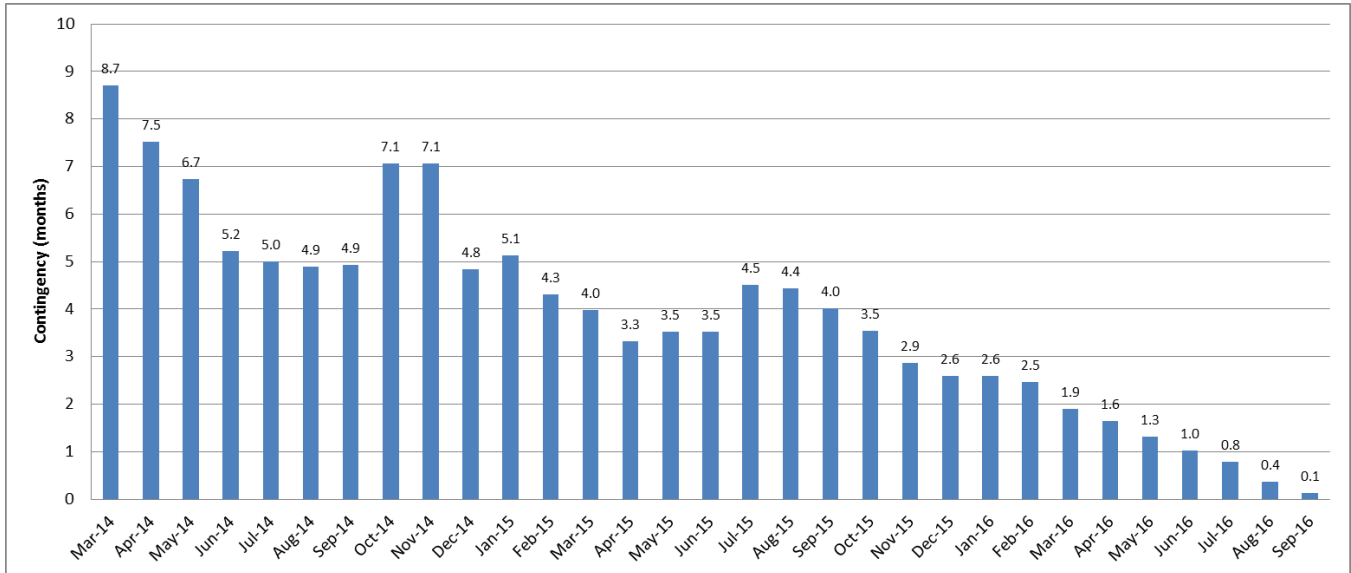
The longest path to project substantial completion begins with final design of the Design/Build Contract #C0988 Crenshaw/LAX Transit Corridor.

The most critical and longest path starts with the Expo Station support of excavation (SOE) and decking, excavation & invert construction; TBM mining operation; cross passage excavation, tunnel invert and walkway construction; track and system installation, while the MLK station SOE and decking, excavation & invert construction, OCS/Traction power and Train Control/Communication System installation follow closely as the secondary critical path.

Critical work concludes with phase I systems integration testing by the C0988 contractor, phase 2 systems integration testing by MTA and then pre-revenue operations.

The current critical path indicates Milestone 1 - Contract Substantial Completion date is May 27, 2019, which is 220 calendar days behind the current contract date.

**PROJECT SCHEDULE CONTINGENCY DRAWDOWN**



**PROJECT SCHEDULE CONTINGENCY DRAWDOWN ANALYSIS**

The project schedule contingency drawdown is based on the revenue service date of October 30, 2019. The change of LOP Contingency is due to design-builder re-forecast of their substantial completion milestone.

Metro this month reduced the forecast of the available project contingency by seven (7) calendar days. The seven (7) calendar days is the delay in the contractor’s schedule for the longer period of time required for mining the south bound tunnel.

The total contingency remaining is 0.1 months.

**PROJECT COST STATUS**

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	GUIDEWAYS	471,335,000	-	452,500,001	-	443,578,773	17,740,128	225,277,337	-	450,354,375	(2,145,626)
20	STATIONS	153,906,000	-	316,050,000	123,912	303,697,278	1,241,074	131,349,847	-	315,050,000	(1,000,000)
30	SUPPORT FACILITIES SOUTHWEST YARD	66,673,000	-	73,245,544	-	71,053,330	1,659,912	18,401,408	-	71,164,000	(2,081,544)
40	SITWORK/SPECIAL CONDITIONS	235,576,000	-	348,565,999	(77,206)	373,121,176	2,682,669	260,695,451	(107,000)	382,942,543	34,376,544
50	SYSTEMS	125,132,000	-	169,311,000	244,935	152,608,855	1,119,021	8,852,711	-	169,436,000	125,000
<b>CONSTRUCTION SUBTOTAL (10-50)</b>		<b>1,052,622,000</b>	<b>-</b>	<b>1,359,672,544</b>	<b>291,640</b>	<b>1,344,059,412</b>	<b>24,442,804</b>	<b>644,576,755</b>	<b>(107,000)</b>	<b>1,388,946,918</b>	<b>29,274,374</b>
60	RIGHT-OF-WAY	132,294,000	-	127,400,000	(12,134)	123,470,236	316,045	120,579,129	-	127,490,000	90,000.00
70	LRT VEHICLES	87,780,000	-	82,100,000	-	82,050,901	-	9,015,878	-	83,571,544	1,471,544
80	PROFESSIONAL SERVICES	273,147,000	-	300,093,178	9,740,761	315,259,098	5,485,977	248,380,025	9,516,900	355,438,610	55,345,432
<b>SUBTOTAL (10-80)</b>		<b>1,545,843,000</b>	<b>-</b>	<b>1,869,265,722</b>	<b>10,020,266</b>	<b>1,864,839,647</b>	<b>30,244,827</b>	<b>1,022,551,787</b>	<b>9,409,900</b>	<b>1,955,447,071</b>	<b>86,181,349</b>
90	UNALLOCATED CONTINGENCY	177,157,000	-	162,734,278	-	-	-	-	(9,409,900)	76,552,929	(86,181,349)
<b>TOTAL PROJECT 865512 (10-100)</b>		<b>1,723,000,000</b>	<b>-</b>	<b>2,032,000,000</b>	<b>10,020,266</b>	<b>1,864,839,647</b>	<b>30,244,827</b>	<b>1,022,551,787</b>	<b>-</b>	<b>2,032,000,000</b>	<b>-</b>
ENVIRONMENTAL/PLANNING - 405512		5,526,150	-	5,526,150	-	5,526,150	-	5,526,150	-	5,526,150	-
ENVIRONMENTAL/PLANNING - 465512		20,473,850	-	20,473,850	-	20,023,237	-	20,023,237	-	20,473,850	-
<b>TOTAL PROJECTS 405512 &amp; 465512 (ENV / PLAN'G)</b>		<b>26,000,000</b>	<b>-</b>	<b>26,000,000</b>	<b>-</b>	<b>25,549,388</b>	<b>-</b>	<b>25,549,388</b>	<b>-</b>	<b>26,000,000</b>	<b>-</b>
<b>TOTAL PROJECTS 405512, 465512 &amp; 865512</b>		<b>1,749,000,000</b>	<b>-</b>	<b>2,058,000,000</b>	<b>10,020,266</b>	<b>1,890,389,034</b>	<b>30,244,827</b>	<b>1,048,101,174</b>	<b>-</b>	<b>2,058,000,000</b>	<b>-</b>

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 30-SEP-2016.

**PROJECT COST ANALYSIS**

The project numbers 405512, 465512, 865512, and 860003 are internal to Metro and are used to differentiate between environmental/planning and construction components of the project.

**Original Budget:**

The Board in October 2011 established the Life-of-Project (LOP) budget of \$1,749 million for the Crenshaw/LAX Transit Project.

**Current Budget:**

There have been two increases in the LOP to date:

- The Board in December 2012 approved an increase of \$13.9 million for a new LOP total of \$1,762.9 million. The Unallocated Contingency Standard Cost Category (SCC) 90 budget line item was increased by the \$13.9 million for a new total of \$191.1 million.
- The Board in June 2013 approved an increase of \$295.1 million for a new LOP total of \$2,058.0 million. The total increase was based on two actions:
  - Increase LOP base project scope in the amount of \$160.1 million, and
  - Increase LOP to include the options for Crenshaw/Vernon Station (Leimert Park Village) and Florence/Hindry Station in the amount of \$135.0 million.

The Board during May approved an increase in the amount of funding that the Crenshaw/LAX project is contributing toward the total cost of the Southwestern Yard Project. An additional \$10.8 million is required to be funded by drawdown from the Unallocated Contingency Current Budget SCC 90 and added to the Southwestern Yard Current Budget SCC 30. The current budget includes the 49% cost allocation share that the project is responsible for paying which includes funding of the design and construction for the Southwestern Yard. This amount is revised to

## **PROJECT COST ANALYSIS (Continued)**

\$150.2 million out of a new total of \$307.2 million adopted by the Board. The \$150.2 million is spread among the SCC 30, 40, 60, 80 and 90 in the Cost Report by Element table above.

A project cost status chart depicting the adopted budget for Southwestern Yard Project is included this month in the appendix section of this report.

The amount of funding available for the Crenshaw/LAX Transit Project, excluding the Southwestern Yard Project \$150.2 million 49% allocation and Environmental/Planning budget of \$26.0 million, has been revised to \$1,881.8 million.

### **Current Forecast:**

The total project current forecast is \$2,058 million. Within the SCC codes there was a reallocation of forecast for SCC-30 shifting final design cost for the Southwestern Yard and design-builder cost-to-SCC-80 per FTA guidelines.

### **Commitments:**

The commitments are cumulative through September 30, 2016. The total commitments increased by \$10.0 million this period primarily due to the following:

- SCC-20 (Stations, Stops, Terminals, Intermodal) has increased by \$0.1 million due to executed modifications associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-50 (Systems) has increased \$0.2 million due to executed modifications associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor
- SCC-80 (Professional Services) has increased of \$9.7 million due to executed modifications associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor and fiscal year 2017 Annual Work Plan for third party coordination scope of work with Los Angeles City Departments. The total commitment of \$315.3 million includes \$21.2 million for the Southwestern Yard 49% allocation.

The \$1,890 million in commitments to date represents 91.9% of the current budget.

### **Expenditures:**

The expenditures are cumulative through September 30, 2016. The total expenditures increased by \$30.2 million this period due to the following:

- SCC-10 (Guideways) has increased by \$17.7 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-20 (Stations, Stops, Terminals, Intermodal) has increased by \$1.2 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-30 (Southwestern Yard) has increased by \$1.7 million for costs associated with Contract C0991 Division 16: Southwestern Yard (Design/Build).
- SCC-40 (Sitework and Special Conditions) has increased by \$2.7million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-50 (Systems) has increased \$1.1 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.

**PROJECT COST ANALYSIS (Continued)**

- SCC-60 (Right-of-Way) has increased by \$0.3 million for cost associated with real estate relocation. The total expenditure of \$120.8 million includes \$52.6 million for the Southwestern Yard 49% allocation.
- SCC-80 (Professional Services) has increased by \$5.5 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor, Contract C0991 Division 16: Southwestern Yard (Design/Build), Engineering and Design Contract E0117, Metro project administration, IPMO field office lease and utilities, construction management support services, legal services, design coordination oversight by Caltrans District 07, third party coordination by Los Angeles City Departments, environmental consultant services, project management assistance support and labor compliance monitoring services. The total expenditure of \$248.4 million includes \$11.5 million for the Southwestern Yard 49% allocation.

The \$1,048.1 million in expenditures to date represents 50.9% of the current budget

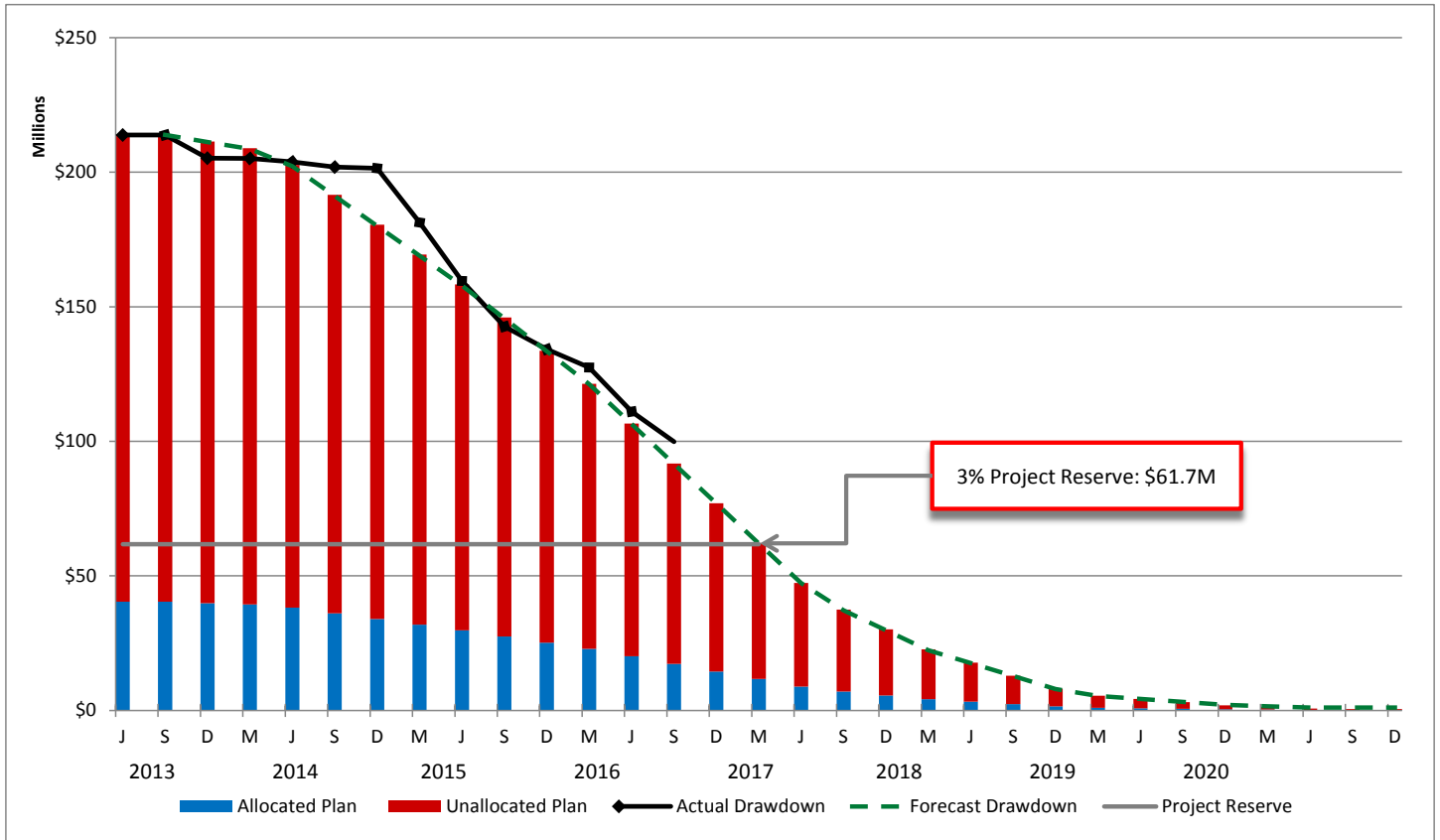
**Non-Crenshaw/LAX Transit Project Funded Scope of Work**

The costs shown in the table below are not part of Crenshaw/LAX Transit Project costs but are funded by other Metro projects using the services of the design-builder (Contract C0988).

C0988 NON-CRENSHAW/LAX TRANSIT PROJECT FUNDED SCOPE OF WORK										
DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT		FORECAST VARIANCE
		PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
405556 SYSTEMWIDE TRANSIT PLANNING	139,236	-	139,236	-	139,236	-	139,236	-	139,236	-
210090 FARE GATE PROJECT	2,310,000	-	2,482,746	-	2,482,746	-	172,746	-	2,482,746	-
460303 AIRPORT METRO CONNECTOR	366,400	-	3,001,555	-	2,311,024	-	2,182,405	-	3,001,555	-
500013 C/LAX LAWA SCOPE OF WORK	1,575,362	-	1,575,362	-	531,125	-	408,712	-	1,575,362	-
<b>TOTAL</b>	<b>4,390,998</b>	<b>-</b>	<b>7,198,899</b>	<b>-</b>	<b>5,464,131</b>	<b>-</b>	<b>2,903,100</b>	<b>-</b>	<b>7,198,899</b>	<b>-</b>



**PROJECT COST CONTINGENCY DRAWDOWN**



Through 30-Sep-2016

**PROJECT COST CONTINGENCY DRAWDOWN ANALYSIS**

The project current budget of \$2,058,000,000 includes an “unallocated contingency” amount of \$173,500,000 which is included as a separate Standard Cost Category (SCC) element. Also included within the current budget is an “allocated contingency” of \$40,366,792 which is allocated, where applicable, to specific contracts within each SCC element. The allocated contingency is not broken out separately in the current budget, as this amount covers anticipated but unknown contract modifications issued by Metro. The total project cost contingency is \$213,866,792 or 10.4%.

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

The project contingency drawdown curve is based on an October 2019 revenue service date.

**PROJECT CONTINGENCY DRAWDOWN ANALYSIS (Continued)**

There has been a cumulative drawdown of \$114,008,271 or 53.3% for both allocated and unallocated contingency through September 2016.

- The unallocated contingency decreased by \$9,409,900 for executed modifications for the design-build contract C0988 Crenshaw/LAX Transit Corridor, Legal Services and fiscal year 2017 Annual Work Plan for third party coordination scope of work with Los Angeles City Departments.
- Allocated contingency decreased by \$368,847 due to executed modifications for the design-build contract C0988 Crenshaw/LAX Transit Corridor.

<b>PROJECT COST CONTINGENCY (through 30-Sep-2016)</b>					
<b>UNITS IN DOLLARS</b>					
	Original Contingency (Budget)	Previous Period	Current Period	To-Date	Remaining Contingency (Forecast)
Unallocated Contingency	173,500,000	(87,537,171)	(9,409,900)	(96,947,071)	76,552,929
Allocated Contingency	40,366,792	(16,692,353)	(368,847)	(17,061,200)	23,305,592
<b>Total Contingency</b>	<b>213,866,792</b>	<b>(104,229,524)</b>	<b>(9,778,747)</b>	<b>(114,008,271)</b>	<b>99,858,521</b>

**DISADVANTAGED BUSINESS ENTERPRISE (DBE) STATUS**

**Contract C0988 Crenshaw/LAX Transit Corridor Design-Build**

(Reported Data as of October 7, 2016)

- DBE Goal – Design 20%
- Current DBE Commitment \$20,324,964 (19.42%)
- Current DBE Participation \$25,083,160 (25.27%)
- Twenty-one (21) Design subcontractors have been identified to-date
  
- DBE Goal – Construction 20%
- DBE Commitment \$235,351,664 (20.00%)
- Current DBE Commitment \$157,346,658 (13.37%)
- Current DBE Participation \$121,969,295 (24.31%)
- One Hundred Thirty-Seven (137) Construction subcontractors have been identified to-date.

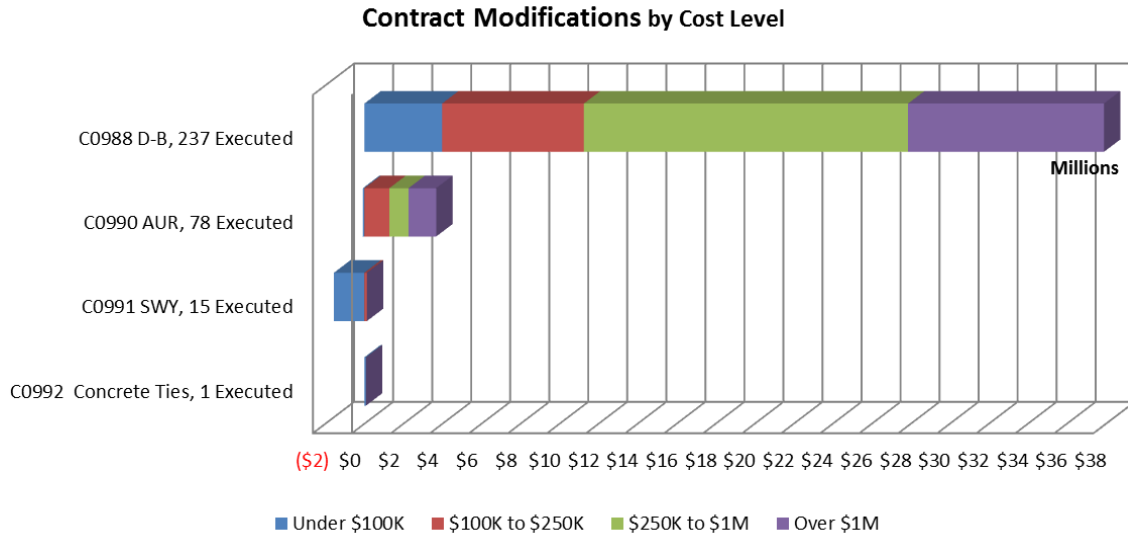
**PROJECT LABOR AGREEMENTS (PLA) STATUS**

**Contract C0988 Crenshaw/LAX Transit Corridor Design-Build**

(Reported Data as of September, 2016)

- Targeted Worker Goal – 40.00%
- Targeted Worker Current Participation - 58.81%
  
- Apprentice Worker Goal - 20.00%
- Apprentice Worker Current Participation - 19.85%
  
- Disadvantaged Worker Goal - 10.00%
- Disadvantaged Worker Current Participation 12.52%

**SUMMARY OF CONTRACT MODIFICATIONS**



	<b>C0988</b>	<b>C0990</b>	<b>C0991</b>	<b>C0992</b>
	<b>237 Executed</b>	<b>78 Executed</b>	<b>15 Executed</b>	<b>1 Executed</b>
Under \$100K	\$ 3,612,727	\$ (70,251)	\$ (1,554,775)	\$ 81,738
\$100k to \$250K	\$ 7,267,228	\$ 1,280,184	\$ 130,000	\$ -
\$250K to \$1M	\$ 16,609,912	\$ 984,662	\$ -	\$ -
Over \$1M	\$ 10,039,556	\$ ,417,202	\$ -	\$ -
<b>Total Contract MODs</b>	<b>\$ 37,898,878</b>	<b>\$ 3,611,797</b>	<b>\$ (1,424,775)</b>	<b>\$ 81,738</b>
<b>% of Contract MODs</b>	<b>2.98%</b>	<b>46.14%</b>	<b>-0.83%</b>	<b>3.78%</b>

Percent of Contract modifications equals the total Change modifications divided by the Contract Award amount

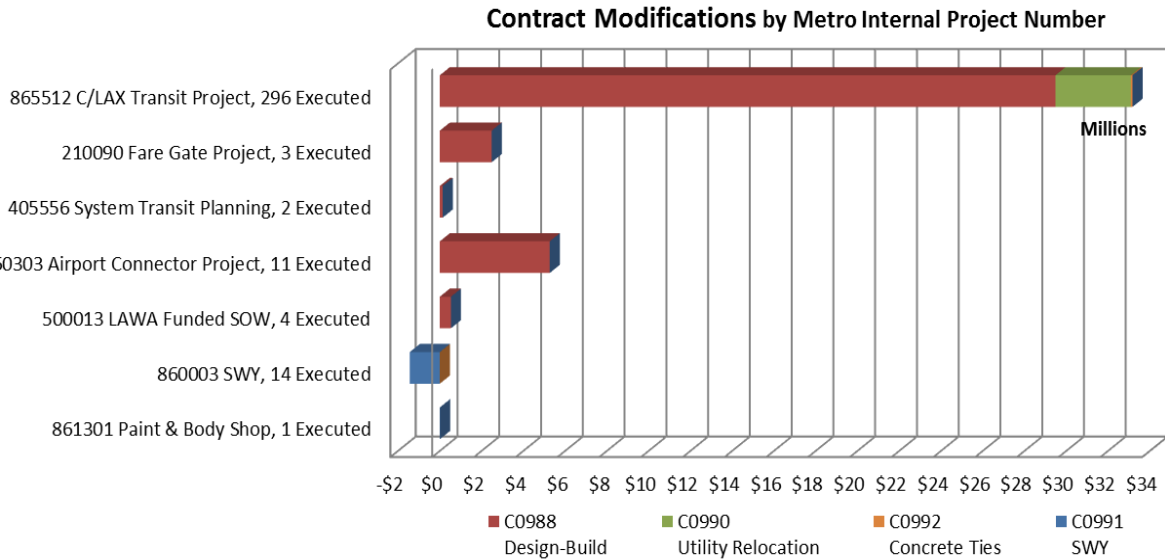
Two hundred and thirty seven (237) changes with a total value of \$37.90 million have been executed since award of Contract C0988. There are an additional fifty (50) changes with a total value of \$11.26 million credit pending the administrative approval process.

Seventy-eight (78) changes with a total value of \$3.61 million have been executed for completed Contract C0990.

Fifteen (15) changes with a total value of (\$1.42) million credits have been executed since award of Contract C0991. There are an additional five (5) changes with a total value of \$0.37 million pending the administrative approval process.

One change with a value of \$81,738 was executed for completed Contract C0992.

**SUMMARY OF CONTRACT MODIFICATIONS**



	865512	210090	405556	460303	500013	860003	861301
	Executed	Executed	Executed	Executed	Executed	Executed	Executed
C0988 - QTY	217	3	2	11	4	0	0
C0988 - \$	\$ 29,481,837	\$ 2,482,746	\$ 139,236	\$ 5,263,844	\$ 531,216	\$ -	\$ -
C0990 - QTY	78	0	0	0	0	0	0
C0990 - \$	\$ 3,611,797	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
C0991 - QTY	0	0	0	0	0	14	1
C0991 - \$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1,432,775)	\$ 8,000
C0992 - QTY	1	0	0	0	0	0	0
C0992 - \$	\$ 81,738	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total - QTY</b>	<b>296</b>	<b>3</b>	<b>2</b>	<b>11</b>	<b>4</b>	<b>14</b>	<b>1</b>
<b>Total - \$</b>	<b>\$ 33,175,372</b>	<b>\$ 2,482,746</b>	<b>\$ 139,236</b>	<b>\$ 5,263,844</b>	<b>\$ 531,216</b>	<b>\$ (1,432,775)</b>	<b>\$ 8,000</b>

Two hundred and ninety six (296) changes with a total value of \$33.18 million have been executed for Project 865512 Crenshaw/LAX Transit Project. There are an additional fifty (50) changes with a total value of \$11.26 million credit pending the administrative approval process.

Three (3) changes with a value of \$2.48 million have been executed for Project 210090 Fare Gate Project.

Two (2) changes with a value of \$0.14 million have been executed for Project 405556 System Transit Planning.

Eleven (11) changes with a value of \$5.26 million have been executed for Project 460303 Airport Metro Connector Project.

Four (4) changes with a total value of \$0.53 million have been executed for Project 500013 Crenshaw/LAX LAWA Statement of Work.

Fourteen (14) changes with a value of \$1.43 million credit have been executed for Project 860003 Southwestern Yard. There are an additional two (2) change with a total value of \$0.17 million pending approval.

One (1) change with a value of \$8,000 has been executed for Project 861301 Southwestern Yard Paint and Body Shop. There are an additional three (3) change with total value of \$0.20 million pending approval.

**FINANCIAL/GRANT STATUS**

\$ in millions

SOURCE	(A)	(B)	(C)	(D)	(D/B)	(E)	(E/B)	(F)	(F/B)
	ORIGINAL BUDGET	TOTAL FUNDS ANTICIPATED	TOTAL FUNDS AVAILABLE	COMMITMENTS \$	%	EXPENDITURES \$	%	BILLED to FUNDING SOURCE \$	%
FEDERAL - CMAQ	68.2	152.9	54.0	152.9	100%	54.0	35%	54.0	35%
FEDERAL - SECTION 5309 BUS CAPT	8.6	8.6	8.6	8.6	100%	8.6	100%	8.6	100%
FEDERAL - REGIONAL STP	20.0	102.2	73.7	102.2	100%	56.4	55%	47.3	46%
FEDERAL - ALTERNATIVE ANALYSIS	1.2	1.2	1.2	1.2	100%	1.2	100%	1.2	100%
FEDERAL - TIGER II	0.0	13.9	13.9	13.9	100%	13.9	100%	13.9	100%
STATE REGIONAL IMPROVEMENT PROG	36.5	36.6	2.2	36.6	100%	2.2	6%	2.2	6%
STATE PPM	0.178	0.178	0.178	0.178	100%	0.178	100%	0.178	100%
STATE PROP 1B PTMISEA	201.2	128.6	128.6	128.6	100%	128.6	100%	128.6	100%
STATE PROP 1 B LOCAL PARTNER PROG	0.0	49.5	49.5	49.5	100%	49.5	100%	49.5	100%
MEASURE R - TIFIA LOAN	545.9	545.9	545.9	545.9	100%	480.1	88%	480.1	88%
MEASURE R	661.1	529.3	446.7	529.3	100%	231.9	44%	167.7	32%
OTHER FUNDS*	52.4	187.5	19.0	13.0	7%	13.0	7%	13.0	7%
PROP C 25% HIGHWAY	148.9	241.1	3.7	241.1	100%	3.7	2%	3.7	2%
PROP C 40% DISCRETIONARY	0.0	10.2	0.0	7.1	69%	0.0	0%	0.0	0%
PROP A 35% RAIL CAPITAL	4.8	50.4	50.4	50.4	0%	4.9	0%	4.9	10%
<b>TOTAL</b>	<b>1,749.0</b>	<b>2,058.0</b>	<b>1,397.5</b>	<b>1,880.4</b>	<b>91.4%</b>	<b>1,048.1</b>	<b>50.9%</b>	<b>974.9</b>	<b>47.4%</b>

NOTE: Expenditures are cumulative through September 2016.

Original Budget based on Board approved October 2011 Funding/Expenditure Plan

Total Funds Anticipated based on August 2016 Funding Plan

\* Other funds include: Local Agency Funds (\$107.470), CNG Tax Credit (\$54.000) and 3rd Party Lease Contingency (\$26.000)

## **STATUS OF FUNDS ANTICIPATED**

**FEDERAL – CMAQ:** Metro submitted to FTA in October 2013 a draft grant application of \$30M for review. FTA has reviewed the application and allowed Metro to formally submit the grant application in July 2014. Grant was approved in December 2014. Funds are available for drawdown. Metro submitted to FTA in January 2015 a grant application of \$24M for approval. Grant was approved on September 23, 2015. Funds are available for drawdown.

**FEDERAL – RSTP:** FTA approved a grant of \$45M in May 2014 to fund the project rail cars. Funds are available for drawdown. Metro submitted to FTA in October 2013 a draft grant application of \$28.2M for review. FTA has reviewed the application and allowed Metro to formally submit the grant application in July 2014. Grant was approved in December 2014. Funds are available for drawdown. Metro will apply to FTA for a grant application of \$20.0 M during the second quarter of FY17.

**STATE PROP 1B – PTMISEA:** An allocation request for \$12M was approved in May 2012 and funds are available for drawdown. In March 2013, allocation requests of \$11.4M and \$98.9M were submitted to Caltrans. The \$11.4M allocation request was approved in June 2013. Funds are available for drawdown. The \$98.9M allocation request was approved on February 6, 2014. Funds are available for drawdown. A new allocation request of \$6.170M was submitted in June 2014 to Caltrans for approval. The allocation request was approved on February 4, 2015. Funds are available for drawdown.

**STATE PROP 1B LP:** An allocation request of \$49.5M was submitted in April 2013 and approved in July 2013. The allocation request was executed by Caltrans in December 2013. Funds are available for drawdown.

**MEASURE R – TIFIA LOAN (Transportation Infrastructure Finance & Innovation Act):** Application for a loan of \$545.9M was submitted to the US Department of Transportation (DOT) in November 2011. Loan agreement was executed on September 12, 2012.

**MEASURE R:** \$446.7M has been allocated to the project through FY2017. Funds are available for drawdown.

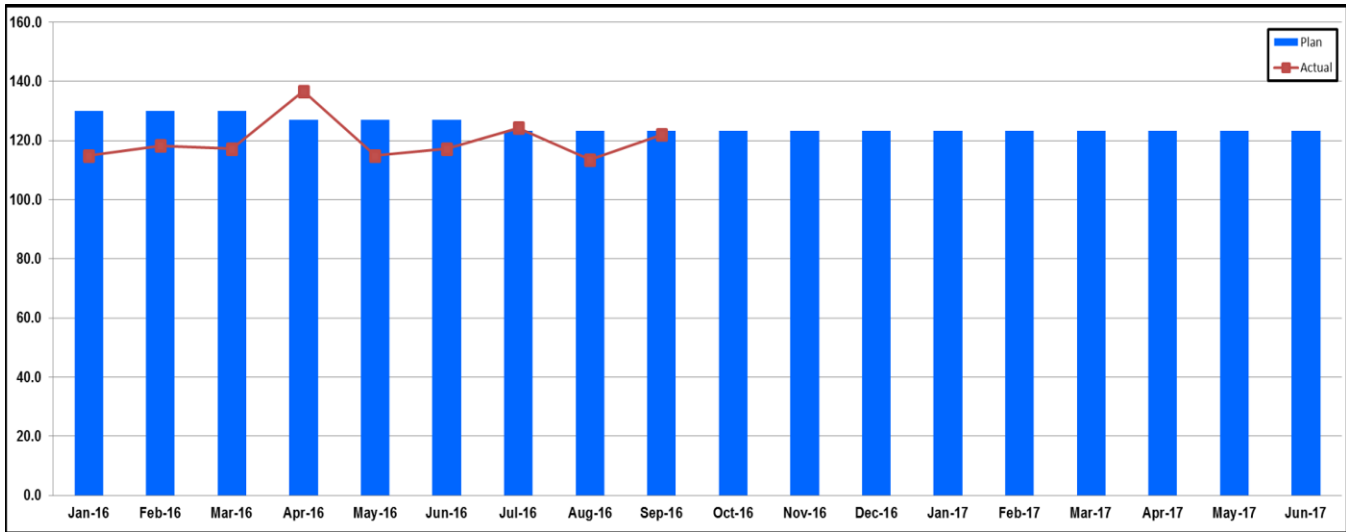
**OTHER FUNDS:** City of LA: Based on the funding agreement between Metro and the City of LA. *\$19M is available for drawdown through FY2017.*

**PROP C 25% HIGHWAY:** \$3.8M has been allocated to the project based on the June 2014 TIFIA Financial Model Funding Plan. Funds are available for drawdown.

**PROP A 35% RAIL CAPITAL:** \$4.8M has been allocated to the project based on the June 2014 TIFIA Financial Model.

## STAFFING STATUS

### Total Project Staffing – FTES



**Notes:**

1. FTE = Full Time Equivalent
2. Staffing levels include the Southwestern Yard Project.
3. Actual staffing levels are cumulative through September 2016.

## TOTAL PROJECT STAFFING

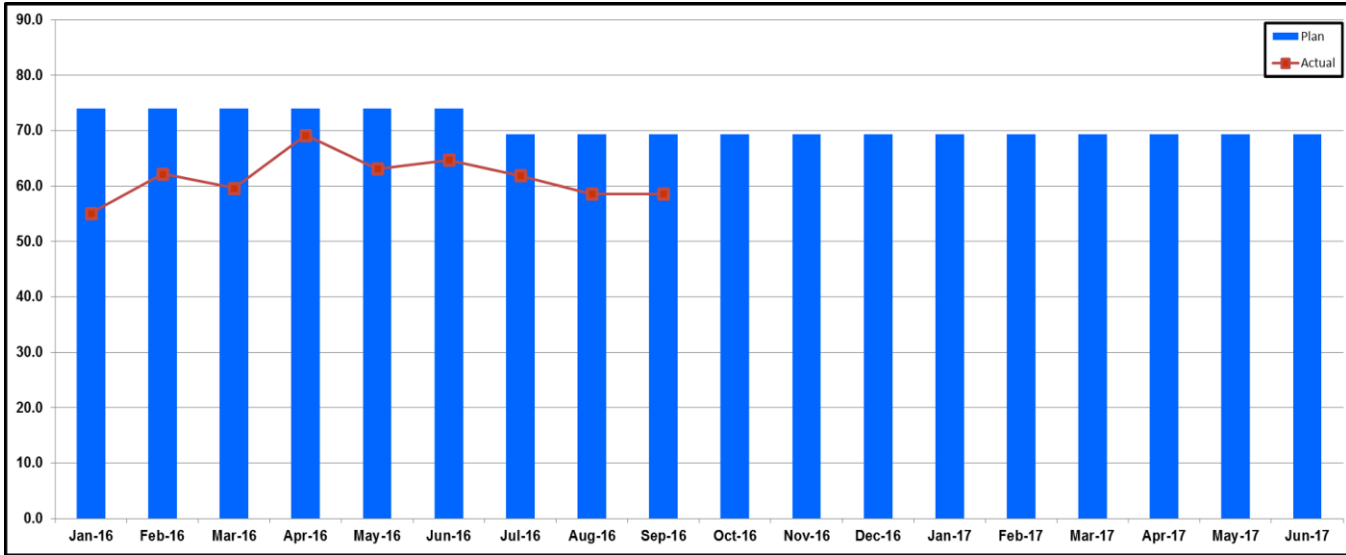
The overall FY17 Total Project Staffing Plan averages 123.3 Full Time Equivalent (FTEs) per month consisting of 69.3 for Metro Agency staff, 47.0 for Construction Management Support Services Consultant and 7.0 for Design and Engineering Support Services Consulting staff.

For September 2016, there were a total of 58.6 FTEs for Metro’s project administration staff, 52.7 FTEs for Construction Management Support Services Consultant and 10.7 FTEs for Design and Engineering Support Services Consulting staff.

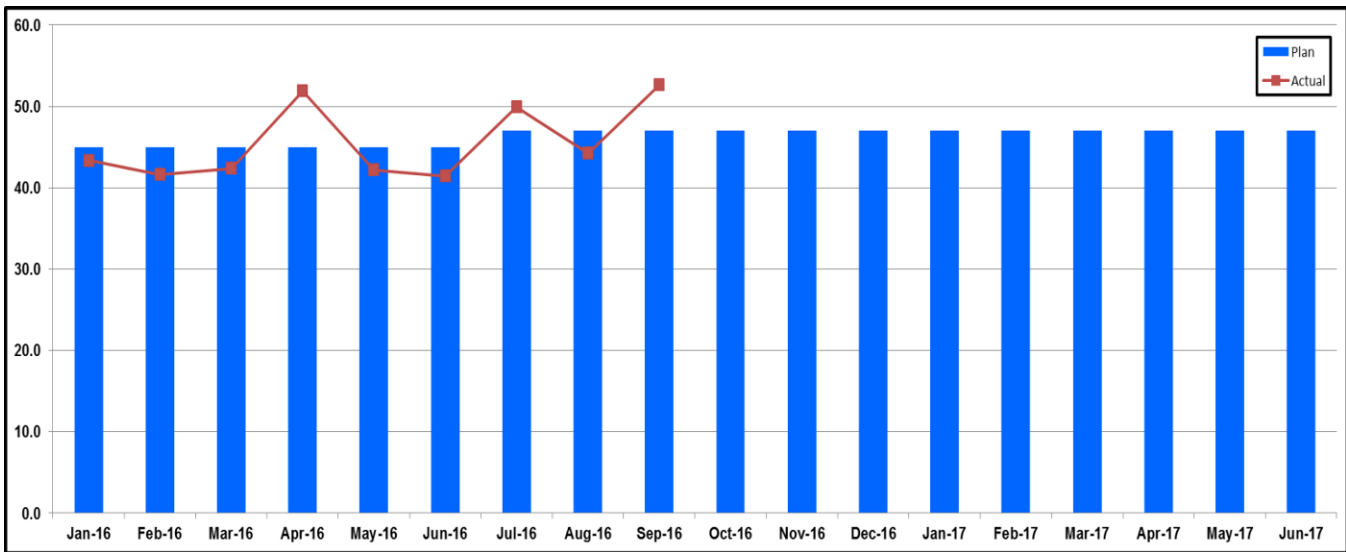
The next three charts show actual staffing versus planned staffing for the three major project participants.



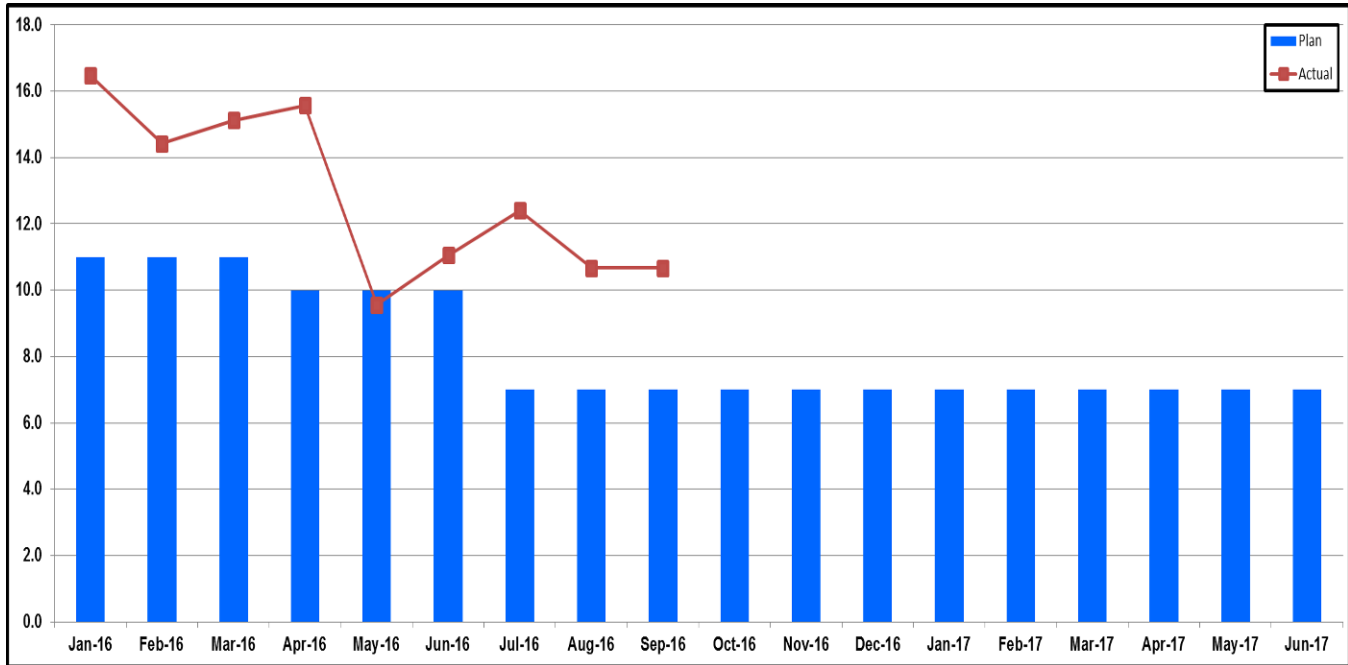
**STAFFING STATUS (Continued)**  
**METRO STAFFING – FTES**



**CONSTRUCTION MANAGEMENT  
 SUPPORT SERVICES CONSULTANT – FTES**



### STAFFING STATUS (Continued) ENGINEERING SERVICES CONSULTANT – FTES



**REAL ESTATE STATUS**

Contract No.	Number of Parcels	Certified	Decertified	Appraisals Complete	Offers Made	Agreements Signed	Condemnations Filed	Relocations Complete	Parcels Available to WSCC
<b>C0988 C/LAX Transit Corridor (D-B):</b>									
<i>Crenshaw Subdivision</i>									
Full Takes	12	12		12	12	7	5	12	12
Part Takes (PT or SE)	10	9	1	9	9	3	6		9
TCE	10	9	1	10	10	1	8		9
<b>Subtotal Parcels</b>	<b>32</b>	<b>30</b>	<b>2</b>	<b>31</b>	<b>31</b>	<b>11</b>	<b>19</b>	<b>12</b>	<b>30</b>
<i>Crenshaw Subdivision Additional Parcels:</i>									
Full Takes									
Part Takes	1	1		1	1				
TCE									
<b>Subtotal Parcels:</b>	<b>1</b>	<b>1</b>		<b>1</b>	<b>1</b>				
<b>Total Crenshaw Parcels</b>	<b>33</b>	<b>31</b>	<b>2</b>	<b>32</b>	<b>32</b>	<b>11</b>	<b>19</b>	<b>12</b>	<b>30</b>
<i>Harbor Subdivision</i>									
Full Takes	15	15		15	15	8	7	12	15
Part Takes (PT or SE)	18	16	2	18	17	6	10		14
TCE	3	2	1	2	2		2		2
<b>Subtotal Parcels</b>	<b>36</b>	<b>33</b>	<b>3</b>	<b>35</b>	<b>34</b>	<b>14</b>	<b>19</b>	<b>12</b>	<b>31</b>
<i>Harbor Subdivision Additional Parcels:</i>									
Full Takes	3	2	1	1					
Part Takes	4	2	2	2	2	2			2
TCE	3	3		3	3	2			2
<b>Subtotal Parcels:</b>	<b>10</b>	<b>7</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>4</b>			<b>4</b>
<b>Total Harbor Subdivision Parcels</b>	<b>46</b>	<b>40</b>	<b>6</b>	<b>41</b>	<b>39</b>	<b>18</b>	<b>19</b>	<b>12</b>	<b>35</b>
<b>Total CR/HS Parcels:</b>	<b>79</b>	<b>71</b>	<b>8</b>	<b>73</b>	<b>71</b>	<b>29</b>	<b>38</b>	<b>24</b>	<b>65</b>
<i>Southwestern Yard</i>									
Full Takes	8	8		8	8	4	4	7	8
Part Takes									
TCE									
<b>Subtotal Parcels:</b>	<b>8</b>	<b>8</b>		<b>8</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>7</b>	<b>8</b>
<b>Total SW Parcels:</b>	<b>8</b>	<b>8</b>		<b>8</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>7</b>	<b>8</b>
<b>Total Project Parcels</b>	<b>87</b>	<b>79</b>	<b>8</b>	<b>81</b>	<b>79</b>	<b>33</b>	<b>42</b>	<b>31</b>	<b>73</b>

- *With one exception, (Enterprise) all parcels necessary to construct the guideway have been turned over to the Contractor.*
- *The agreement for the Enterprise parcels is currently being circulated for signature. Anticipate this parcel will be available for construction in October.*
- *Work requiring the remaining parcels are not on the critical path, and will be used to construct ADA, sidewalk, and other civil improvements.*

## **QUALITY ASSURANCE STATUS**

### **C0988 Crenshaw/LAX Transit Corridor Design-Build Contract**

- Attended weekly Quality Staff Meetings with City of Los Angeles, Los Angeles Bureau of Contract Administration, HNTB, and WSCC Lead Quality personnel.
- *WSCC Quality issued twelve (12) Nonconformance Reports (NCR's) during this month including, 1) UG1 Damaged Rebar, 2) Green Line (AG6) Post Pour Discrepancies, 3) UG1 Incorrect Membrane Size & Missing Water Bar, 4) West Station/Fairview Heights Post Pour Discrepancies, 5) Cantilever Ballast Wall Rebar Out Of Tolerance, 6) Missing Termination Strip At West Station, 7) Missing Rebar For OCS Down Guy at Aviation/Century (AG3), 8) Shift Of Bearing Plates, Access Opening at Green Line (AG1), 9) Frame A Post Pour Discrepancies at Green Line (AG1), 10) Incorrect Top Of Wall Elevation for TC&C Room NB Wall at West Station, 11) Green Line AG1/Frame A&2 Bearing Surface for Manhole Covers for the Access Opening, & 12) Expo Station Invert Level Column Incorrect Elevation.*
- *WSCC Quality closed four (4) NCR's including, 1) UG1 Out of Plum Vertical Expansion Joint, 2) West Station Bent Rebar Dowels, 3) La Brea Station Incorrect Ramp Footing Layout, & 4) Park Mesa SB Crenshaw Curb and Gutter Discrepancies.*
- *WSCC Quality started the "Concrete At Crenshaw Series" training program to properly prepare and train the production team for concrete placement due to post pour discrepancies. WSCC Quality performed thorough research and conducted training on concrete placement such as, 1) Proper planning, 2) Pre-Pour meetings and required activities, 3) Formwork cleanliness, and 4) Concrete consolidation through use of proper vibrating equipment and technique.*
- *HNTB Design Quality Control reviewed twenty (20) NDC's, two (2) RFI's, one (1) NCR, five (5) AFC and six (6) design packages.*
- *Metro Independent Testing Lab (ITL) conducted split sample for verification testing and provided soil test analysis of material for use on Mechanically Stabilized Earth (MSE) Wall 17 from stockpile at Regional Connector project, performed split sample for verification testing of sub-ballast material from 25th Street crusher site stockpile, and performed Lightweight Cellular Concrete inspection/testing/sampling observations on Class III LCC for MSE Wall 122 backfill.*
- *Metro Quality participated in Readiness Review meetings for the Elevator Shaft work at Century, and I-405 Bridge superstructure construction.*

## **ENVIRONMENTAL STATUS**

### **C0988 Crenshaw/LAX Transit Corridor Design Build**

- Reviewed and commented on the following Contractor Submittals:
  - Weekly Noise Monitoring Data for station and alignment construction
  - Green Construction Plan Monthly Report
  - Sustainability Plan Monthly Reports
  - Weekly Storm Water Pollution Prevent Plan (SWPPP) inspection reports
  - Weekly Fugitive Dust Inspection Reports
  - Various Construction Work Plans and Submittals
  
- Monitoring groundwater dewatering activities at the Expo Station excavations.
- Conducted Contractor Cultural Awareness Training.
- Coordinated cultural monitoring (Archaeological, Paleontological and Native American Monitoring).
- *Conducted contaminated soil removal at Victoria Yard and along the right-of-way south of Arbor Vitae Street.*
- Conducted noise and vibration monitoring for weekend and night decking operations at UG3.
- *Conducted asbestos containing material (transite pipe) removal in the Park Mesa Heights area and along Aviation Blvd. and 111<sup>th</sup> St.*

## **CONSTRUCTION RELATIONS STATUS**

- Continue to work with businesses and residents interested in the Park Mesa At-Grade segment including the Baldwin Hills Estates HOA and CD 8.
- Continue to work with Metro Bus Operations to ensure that bus stops between 60<sup>th</sup> and 67<sup>th</sup> Street are operational during construction.
- Metro Construction Relations and WSCC held a monthly Construction Update Meeting focused on the Park Mesa Heights area.
- Attended CD10 planning meetings for the 2016 Taste of Soul on Crenshaw Blvd.
- *Held a Construction Update Community Meeting at Crenshaw Yoga and Dance in Park Mesa Heights.*
- *Attended a community meeting sponsored by Councilman Marqueece Harris-Dawson to kick off Outdoor Art Museum Project in Park Mesa Heights.*
- *Metro Construction Relations will participate in the first annual Older Adult Transportation Expo at LAUS in October 2016.*
- *Media Relations and Construction Relations are working on a media event for the completion of the first bored tunnel at Leimert Park Station anticipated for late October 2016.*
- *Working with stakeholders in Park Mesa Heights to address concerns for drop-off areas at Ivy League Preschool.*

## **SYSTEMWIDE DESIGN AND ART PROGRAM STATUS**

- Responded to RFIs and submittal drawings.
- Worked with Design Builder to refine artwork technical requirements, schedule and budget.
- Participated in Systemwide Design integration reviews and presentations.
- Provided art program update to community stakeholders.
- Worked with artists to refine designs for submission to fabricators.
- Conducted outreach activities to present station artwork to the community.
- Facilitated community update meeting for art program.
- Gave a project update and tour of the Makers exhibition to the Crenshaw Leadership Council.

## **SAFETY & SECURITY STATUS**

- Participated in weekly progress meetings with WSCC's Management and Construction Management Team to discuss safety/security/quality related issues and construction schedules.
- Conducted bi-weekly Site Safety Walks with WSCC's Safety personnel to enhance overall safety awareness. Minor safety hazards observed and corrected during safety monitoring.
- Participated in WSCC's weekly Safety Tool-Box Meetings, Executive and Sub-Contractor Safety Committee Meetings and monthly Supervisors Safety Meeting.
- Conducted monthly All Hands Safety and Security Meeting.
- *Participated in WSCC's Readiness Review for Elevator Shaft at Century Station.*
- *Contract C0990 Advanced Utility Relocation completed 368,000 manhours and 3 recordable incidents.*
- *Contract C0988 (WSCC) reported 122,954 work hours and two recordable incidents for the month of September 2016. The total work hours are 3,080,349 and a total of thirty-six (36) recordable incidents.*
- *Total Project-to-Date work hours for Contracts C0990 and C0988 are 3,448,349 and a total of thirty-nine recordable incidents. The Project Incident Rate is 2.2. The Bureau of Labor Statistics (BLS) average recordable rate per 200,000 work-hours is 3.0.*

**THIRD PARTY AGREEMENT STATUS**

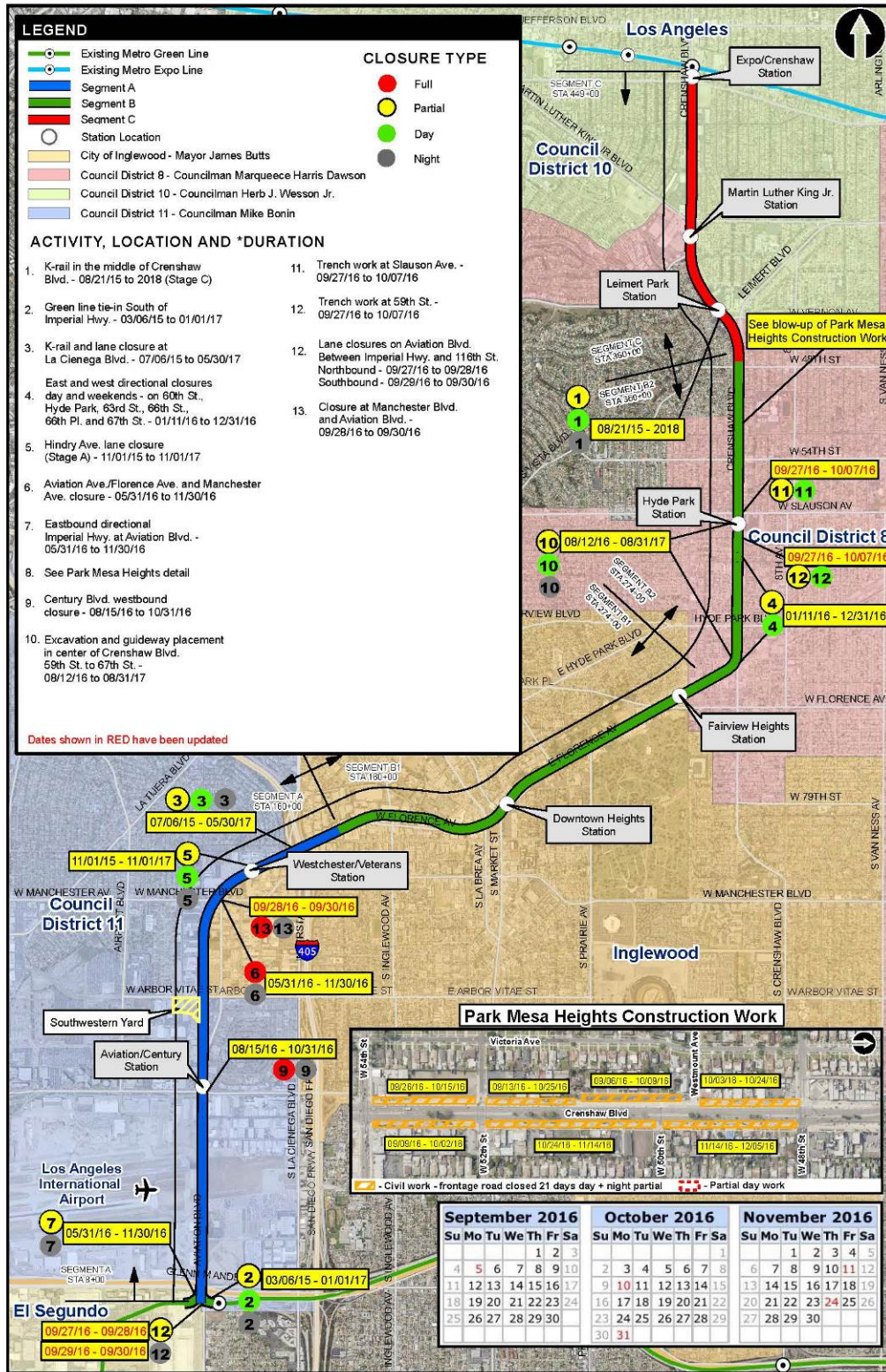
<b>Third Party</b>	<b>Type of Agreement</b>	<b>Forecast Execution Date</b>	<b>Required Need Date</b>	<b>Status/ Comments</b>
City of Los Angeles	Amendment to Master Cooperative Agreement	N/A	N/A	Parties will work under 2003 MCA.
City of Inglewood	Master Cooperative Agreement	9/16	N/A	Executed Letter of Agreement April 2012. Executed Contribution Agreement September 2016.
Los Angeles Department of Water and Power	Amendment to Memorandum of Understanding	N/A	N/A	Metro and LADWP will work under 2002 Utility Cooperative Agreement which remains in effect.
Los Angeles County Public Works	Letter of Agreement	4/11	3/12	Executed
Caltrans	Amendment	8/11	3/12	Executed
Private Utilities	LOA, MOU or UCA	5/11 to 5/13	N/A	Metro is working with affected third party utilities under work orders unless license agreements dictate relocation by utility company. No additional agreements required.

**CPUC CROSSING SUMMARY STATUS**

- The CPUC has approved all packages.
- LACMTA filed a response on March 25, 2016 in response to a petition that was filed by a community member, Chandra V. Mosley, to modify the CPUC Decision that approved seven at-grade crossings on Crenshaw Blvd, located from 48<sup>th</sup> St. to 59<sup>th</sup> St.
- Metro attended the Prehearing regarding the petition on May 24, 2016.
- *The scoping document (Ruling) was issued on July 1, 2016 by the Administrative Law Judge Scoping which set forth the procedural schedule and address the scope of the proceeding.*
- *Metro filed a brief on August 5, 2016 and a Reply Brief on August 15, 2016.*
- *Administrative Law Judge is reviewing the submitted Briefs and will issue a Proposed Decision.*



**Crenshaw/LAX Transit Corridor Project  
Traffic Closure Key Map - September - November 2016**



Updated: 09/30/2016

\*Note: Traffic closure dates and durations are subjected to change

## **CHRONOLOGY OF EVENTS**

2003	Major Investment Study
April 2007	Board authorized the CEO to award Contract PS 4330-1968 to complete environmental clearance and conceptual engineering.
December 2009	Board adopted the LRT Alternative as the Locally preferred Alternative and received and filed the Crenshaw Transit Corridor DEIS/DEIR.
December 2009	Board authorized the CEO to award Contract No. EO117 for Phase I, Advanced Conceptual Engineering.
September 2010	Board authorized the CEO to exercise option with Contract No. EO117 for Phase II Preliminary Engineering.
April 2011	Board adopted the Arbor Vitae/Bellanca (Site 14) LPA for the Maintenance Facility Site
July 2011	Board approved Southwestern Yard cost allocation.
September 2011	Board approved Project Definition and certified Final Environmental Impact Report
October 2011	Board approved the Life-of-Project Budget of \$1.749 billion.
December 15, 2011	CTC reviewed the FEIS/FEIR and adopted the required resolution for future funding consideration.
December 23, 2011	Request for Qualifications for Contract C0988 C/LAX Transit Corridor was released to Industry.
December 30, 2011	Received Record of Decision from FTA.
February 10, 2012	Released Invitation for Bid for Contract C0990 Crenshaw/LAX Advanced Utility Relocations.
March 12, 2012	Received Statement of Qualifications for Contract C0988 C/LAX Transit Corridor.

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

May 16, 2012	Notification of pre-qualified proposers for Contract C0988 C/LAX Transit Corridor.
May 30, 2012	Awarded Contract No. C0990 C/LAX Advanced Utility Relocations to Metro Builders and Engineers Group LTD.
June 22, 2012	Released Request for Proposals for Contract C0988 C/LAX Transit Corridor.
August 24, 2012	Received approval from the Surface Transportation Board regarding BNSF Railway Company abandonment along five-mile Crenshaw Segment of the Harbor Branch ROW.
September 4, 2012	Preparation of a FONSI for Supplemental Environmental Assessment to the FEIS was approved by FTA.
September 28, 2012	Completed abandonment process with BNSF.
September 28, 2012	TIFIA and TIGER II Grants approved.
December 6, 2012	Received proposals for Contract C0988 C/LAX Transit Corridor.
February 22, 2013	Issued Amendment No. 8 requesting Best and Final Offers (BAFO) for Contract C0988 C/LAX Transit Corridor.
March 15, 2013	Received BAFO's for Contract C0988 C/LA Transit Corridor.
May 23, 2013	Board amended the Agency's FY14 Proposed Budget to include funding of \$80 million for an underground station at Leimert Park Village as part of the baseline project.
June 27, 2013	The Board awarded Contract C0988 Crenshaw/LAX Transit Corridor to Walsh-Shea Corridor Constructors.
July 10, 2013	Issued notice of award to Walsh-Shea Corridor Constructors, Contract C0988 Crenshaw/LAX Transit Corridor.


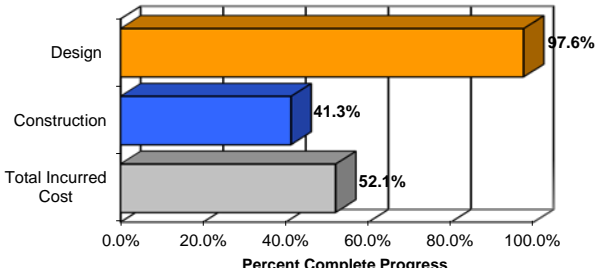
### **CHRONOLOGY OF EVENTS (Continued)**

August 1, 2013	United States Department of Transportation approves Metro's request to increase the Crenshaw/LAX Project Budget to \$2,058 million.
August 8, 2013	Issued notice of execution of the contract was issued to Walsh-Shea Corridor Constructors, Contract C0988 Crenshaw/LAX Transit Corridor.
September 10, 2013	Issued Notice to Proceed to Walsh-Shea Corridor Constructors, Contract C0988 Crenshaw/LAX Transit Project.
December 5, 2013	The Board approved Memorandum of Understanding with the Los Angeles World Airports for a parallel design and possible construction modifications near Aviation/Century Station to accommodate elements of LAWA's SPAS.
December 5, 2013	The Board awarded Contract C0992 with Rocla Concrete Tie, Inc; for the procurement of concrete ties and assembly items.
January 21, 2014	A Groundbreaking Ceremony was held at the Crenshaw/Exposition Station.
January 23, 2014	The Board awarded Contract C0992A Rail and Bumping Posts to LB Foster Rail Technologies Corp.
July 25, 2014	Century Crunch" – weekend demolition of the defunct Century railroad bridge at the intersection of Century Blvd. and Aviation.
August 21, 2014	Substantial Completion issued for Advanced Utility Relocations Contract C0990.
August 29, 2014	Released Invitation for Bid for Contract C0991 Crenshaw/LAX Southwestern Yard (Division 16) Maintenance Facility.
September 19, 2014	CPUC has approved all five (5) grade crossing applications and no further actions are required.
January 22, 2015	Received Technical and Price Bids for the Southwestern Yard (Division 16) Maintenance Facility.
March 25, 2015	Opened Price Bids for the Southwestern Yard (Division 16) Maintenance Facility.


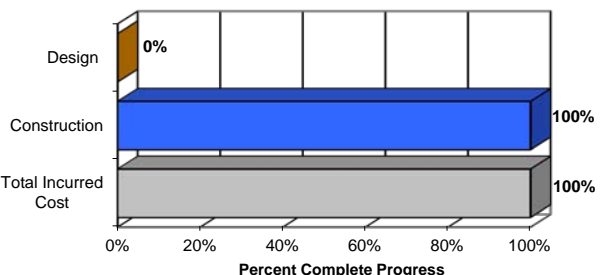
### **CHRONOLOGY OF EVENTS (Continued)**

May 28, 2015	The Board awarded Contract C0991 Division 16: Southwestern Yard to Hensel Phelps/Herzog JV. Also increased by \$22.0 million the Life of Project Budget for the Southwestern Yard Project to a new amount of \$307.2 million.
May 28, 2015	The Board approved Design Option 3 for the track alignment to accommodate the future Metro Connector Transit Station (96 <sup>th</sup> St. Station).
June 29, 2015	Issued Notice to Proceed to Hensel Phelps/Herzog JV, Contract C0991 Division 16: SouthwesternYard.
July 23, 2015	The Board approved the Official and Operational Names of the eight stations.
April 27, 2016	The Tunnel Boring Machine was launched and drilling from north to south of the alignment started.
May 7, 2016	Held Halfway There Community Celebration at Leimert Park marking the halfway point of the project.
May 27, 2016	Held Groundbreaking Ceremony for the Southwestern Yard (Division 16).


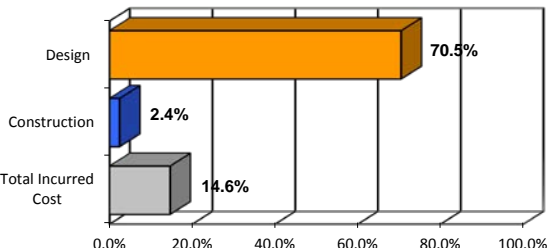
**CONTRACT C0988 STATUS**  
*Crenshaw/LAX Transit Corridor*

<p><b>PE Design Contractor: Hatch Mott (HM)</b>  <b>CM Consultant: Stantec</b>  <b>Contractor: - Walsh Shea Corridor Constructors (WSCC)</b></p>	<p><b>Contract No.: C0988</b>  <b>Status as of October 1, 2016</b></p> 																																								
<p><b>Progress/Work Completed:</b>  <b>Construction</b></p> <ul style="list-style-type: none"> <li>Completed Tunnel segment production, delivery of segments on going.</li> <li>Commenced TBM Mining SB tunnel from MLK to Vernon</li> <li>Completed construction of the lower walls at Expo station.</li> <li>Continued construction of the Columns at Expo station.</li> <li>Completed construction of the Invert slab at Vernon Station</li> <li>Continued excavation and lagging at UG #4</li> <li>Continued Storm drain installation at Park Mesa</li> <li>Continued relocating Fire Hydrants at Park Mesa</li> <li>Continued Excavation, lagging and decking intersections at UG #3</li> <li>Continued OCS foundation construction in segment B1.</li> <li>Continued work at the Pedestrian Underpass.</li> <li>Continued construction of the Platform Deck at West Station</li> <li>Commenced construction of the TC&amp;C room Roof at West Station.</li> <li>Continued construction of the platform deck at La Brea Station</li> <li>Completed construction of MSE Wall 154</li> <li>Continued construction of Manchester bridge Superstructure</li> <li>Continued OCS foundation construction in Segment A</li> <li>Commenced Storm Drain installation in Segment A</li> <li>Continued Invert slab at UG #1</li> <li>Continued construction of the U-Walls at UG#1</li> <li>Continued construction of Green Line Superstructure</li> <li>Continued construction of MSE wall 17</li> </ul>	<p><b>Areas of Concern:</b></p> <ul style="list-style-type: none"> <li>Design-builder's ability to mitigate schedule delays.</li> <li>Timely submittal of WSCC's design submittals and review by City of Los Angeles.</li> <li>96th street station accomodations cost/schedule impacts.</li> <li>Ability of TBM to meet production rate forecasted on schedule.</li> </ul>																																								
<p><b>Schedule Assessment:</b></p> <ul style="list-style-type: none"> <li>Contractor's September 2016 schedule update indicates "Milestone 1 - Contract Substantial Completion" is 220 calendar days behind the current contract date.</li> <li>Contractor submitted a revised schedule and is under review by Metro.</li> </ul>	<p><b>Cost Assessment:</b></p> <ul style="list-style-type: none"> <li>The current construction contract cost forecast is \$1,302,607,591.02 and is within the Board authorized budget.</li> <li>The Contractor submitted their 37th payment application in the approved amount of \$17,897,499.36</li> </ul> <p>*Please note that not all executed modifications may have been included in the Contractor current payment application.</p>																																								
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**CONTRACT C0990 STATUS**  
*Crenshaw/LAX Advanced Utility Relocations*


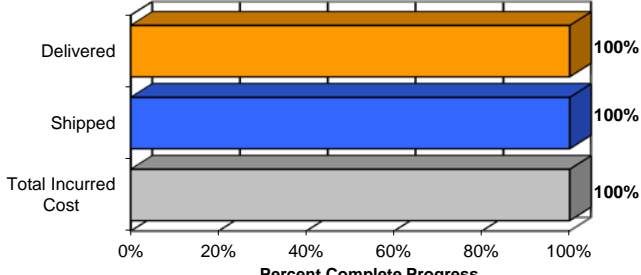
<p><b>PE Design Contractor: Hatch Mott (HM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Metro Builders and Engineers Group LTD</b></p>	<p><b>Contract No.: C0990</b> <b>Status as of October 1, 2016</b></p> 																																			
<p><b>Progress/Work Completed:</b> - The construction was substantially completed on August 21, 2014 - Board authorized in March a settlement with the contractor. - Contract in close out.</p>	<p><b>Areas of Concern:</b></p>																																			
<p><b>Schedule Assessment:</b> - Metro granted substantial completion to Metro Builders on August 21, 2014, which is 276 calendar days behind. - The settlement with the contractor settled all time issues.</p>	<p><b>Cost Assessment:</b> - The final contract is \$11,316,140.00 and has been completely paid to contractor.  * A modification in process for credit of unused provisional sums in the amount of \$123,156.85.</p>																																			
<p><b>Schedule Summary:</b></p> <table border="0"> <tr> <td>1. Date of Award:</td> <td align="right">05/30/12</td> </tr> <tr> <td>2. Notice to Proceed:</td> <td align="right">07/17/12</td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td align="right">365</td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td align="right">468</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td align="right">753</td> </tr> </table>	1. Date of Award:	05/30/12	2. Notice to Proceed:	07/17/12	3. Original Substantial Completion Duration:	365	4. Current Substantial Completion Duration:	468	5. Elapsed Time from NTP:	753	<p><b>Cost Summary:</b> <span style="float: right;"><b>\$ In millions</b></span></p> <table border="0"> <tr> <td>1. Award Value:</td> <td align="right">7.83</td> </tr> <tr> <td>2. Executed Modifications:*</td> <td align="right">3.49</td> </tr> <tr> <td>3. Approved Change Orders:</td> <td align="right">-</td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td align="right">11.32</td> </tr> <tr> <td>5. Incurred Cost:</td> <td align="right">11.32</td> </tr> </table>	1. Award Value:	7.83	2. Executed Modifications:*	3.49	3. Approved Change Orders:	-	4. Current Contract Value (1 + 2 + 3):	11.32	5. Incurred Cost:	11.32															
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**CONTRACT C0991 STATUS**  
*Southwestern Yard*


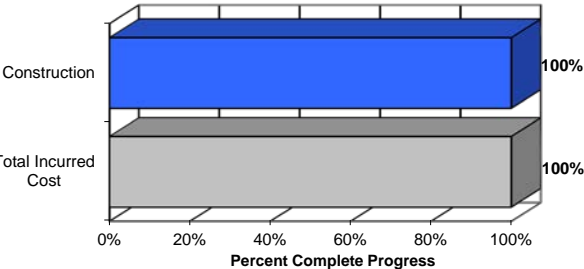
<p><b>PE Design Contractor: Hatch Mott (HM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Hensel Phelps / Herzog JV</b></p>	<p><b>Contract No.: C0991</b></p>  <p><b>Status as of October 1, 2016</b></p>																									
<p><b>Progress/Work Completed:</b></p> <ul style="list-style-type: none"> <li>• APDU-1 Early Civil Package was issued for Construction on 9/23/16.</li> <li>• APDU-2A Main Shop Building (Foundations, pits, grader beams, anchor bolts, Etc.) Early Civil Package was issued for construction on 9/23/16.</li> <li>• ADPU-2B 100% was submitted for review on 9/14/16.</li> <li>• ADFPU-2C 85% Design submittals for future Main Shop Expansion 85% continue.</li> <li>• Phase I, right of way was turned over to HPH on May 2, 2016.</li> <li>• Bellanca Revocable Permit was issued in June 2016.</li> <li>• Traffic Control Plans were approved for restriping of Arbor Vitae, Temporary Access Road (TAR) was opened to traffic on 9/12/16 and demolition of Bellanca started.</li> <li>• DWP installed new poles and wiring east of Temporary Access Road (TAR). No progress this period</li> <li>• AT&amp;T completed installation of underground conduits to the North telephone pole at TAR. No progress this period</li> </ul>	<p><b>Areas of Concern:</b></p> <ul style="list-style-type: none"> <li>• DWP utility line relocation design is continuing and anticipated to be complete and approved by BOE. Design approval process is taking much longer with multiple revisions than anticipated.</li> <li>• Metro 3rd party is working on an interim plan to remove the interfering power pole.</li> <li>• AT&amp;T is planning to complete the fiber and copper lines relocation and removal of existing communication poles from East side of Bellanca by 10/20/16.</li> </ul>																									
<p><b>Schedule Assessment:</b></p> <ul style="list-style-type: none"> <li>• MOD #02 was executed extending milestones 2, 3, 4 by 90 calendar days as shown on the Schedule milestone section below.</li> <li>• MOD #06 was also executed to adjust the contract Rain Days allowance measurement.</li> <li>• C0991 contract critical path runs through design and start of construction for the Main Shop Facility.</li> <li>• Interface coordination between HPH, WSCC, City, 3rd Parties are being managed proactively to address and to minimize any impact on the project cost and Schedule.</li> <li>• Risk Register for SWY was expanded as part of the overall Crenshaw/LAX project risk process.</li> <li>• Assessment, no delay to the milestones are expected.</li> </ul>	<p><b>Cost Assessment:</b></p> <ul style="list-style-type: none"> <li>• The current construction contract cost forecast is \$170,887,919.82 is within the Board authorized budget.</li> <li>• The Contractor submitted their 14th payment application in the approved amount of \$2,201,050.90.</li> </ul> <p>*Please note that not all executed modifications may have been included in the Contractor current payment application.</p>																									
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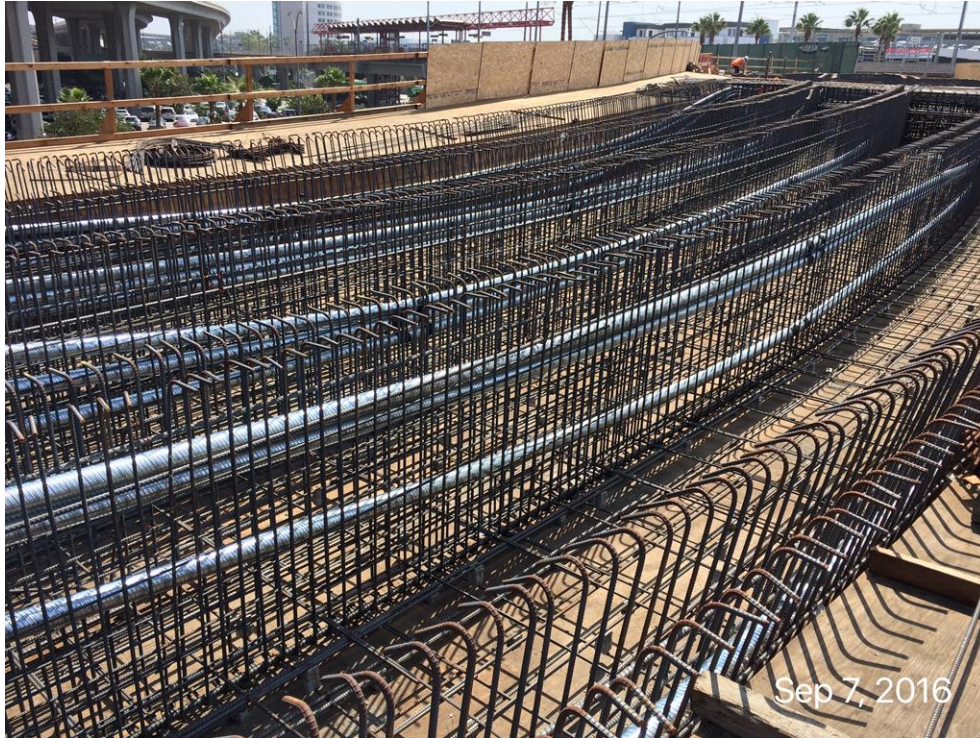
**CONTRACT C0992 STATUS**  
*Concrete Ties*

<p><b>PE Design Contractor: Hatch Mott (HM)</b>  <b>CM Consultant: Stantec</b>  <b>Contractor: Rocla Concrete Tie Inc.</b></p>	<p><b>Contract No.: C0992</b></p> <p><b>Status as of October 1, 2016</b></p>																																									
<p><b>Progress/Work Completed:</b>          - All 19,936 concrete ties have been received onsite by the design-builder (Contract C0988).          - Contract is closed out.</p>	<p><b>Areas of Concern:</b></p>																																									
<p><b>Schedule Assessment:</b></p> <p>All concrete ties were delivered to job site by August 15, 2014.</p>	<p><b>Cost Assessment:</b></p> <p>The final contract cost is \$2.25 million and has been completely paid to contractor.</p>																																									
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**CONTRACT C0992A STATUS**  
*Running Rail and Bumping Posts*

<p><b>PE Design Contractor: Hatch Mott (HM)</b>  <b>CM Consultant: Stantec</b>  <b>Contractor: LB Foster Rail Technology Corp</b></p>	<p><b>Contract No.: C0992A</b>  <b>Status as of October 1, 2016</b></p> 																																								
<p><b>Progress/Work Completed:</b>          - All 115RE SS Blank Stick Rails have been delivered to the job site.          - All 115RE HH rail have been delivered to job site.          - All Bumping Posts have been delivered to job site on 5/8/2015.          - Contract is closed out.</p>	<p><b>Areas of Concern:</b>          .</p>																																								
<p><b>Schedule Assessment:</b>          All running rails and bumping posts were delivered ahead of the schedule.</p>	<p><b>Cost Assessment:</b>          The final contract cost is \$5,2 million and has been completely paid to contractor.</p>																																								
<p><b>Schedule Summary:</b></p> <table border="0"> <tr> <td>1. Date of Award:</td> <td align="right">01/23/14</td> </tr> <tr> <td>2. Notice to Proceed:</td> <td align="right">03/07/14</td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td align="right">300</td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td align="right">558</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td align="right">448</td> </tr> </table>	1. Date of Award:	01/23/14	2. Notice to Proceed:	03/07/14	3. Original Substantial Completion Duration:	300	4. Current Substantial Completion Duration:	558	5. Elapsed Time from NTP:	448	<p><b>Cost Summary:</b> <span style="float: right;"><b>\$ In millions</b></span></p> <table border="0"> <tr> <td>1. Award Value:</td> <td align="right">5.2</td> </tr> <tr> <td>2. Executed Modifications:</td> <td></td> </tr> <tr> <td>3. Approved Change Orders:</td> <td></td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td align="right">- 5.2</td> </tr> <tr> <td>5. Incurred Cost:</td> <td align="right">5.2</td> </tr> </table>	1. Award Value:	5.2	2. Executed Modifications:		3. Approved Change Orders:		4. Current Contract Value (1 + 2 + 3):	- 5.2	5. Incurred Cost:	5.2																				
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## CONSTRUCTION PHOTOGRAPHS



**GREENLINE UNDERPASS** – Post tensioning duct and girder stem/bent cap rebar installation Frame 1.



**GREENLINE UNDERPASS** – Continued with deck formwork at Frame 2.

## CONSTRUCTION PHOTOGRAPHS (Continued)



**MSE WALL 17L & R (North of Imperial Hwy/I-105)** – Continued with precast panel, erection, strap placement, backfill and compaction testing.



## CONSTRUCTION PHOTOGRAPHS (Continued)



**UG#1** – Type 2 strutted U-wall rebar installation.



**104<sup>th</sup> STREET** – Finished cut and cover tunnel including waterproofing protection slab and street restoration.

### CONSTRUCTION PHOTOGRAPHS (Continued)



104<sup>th</sup> STREET – Rebar installation for a portion of the cut and cover tunnel roof slab.



MANCHESTER BRIDGE – Finished formwork, placed and cured concrete for the stems and soffit.

### CONSTRUCTION PHOTOGRAPHS (Continued)



**DOWNTOWN INGLEWOOD STATION** – Deck formwork starts for the Downtown Inglewood Station platform.



**UG#3** – Excavation activities at north portal.

**CONSTRUCTION PHOTOGRAPHS (Continued)**



**UG#3** – Setting deck beam and deck panels.



**PARK MESA HEIGHTS** – Installing formwork for catch basin at Westmount.



### CONSTRUCTION PHOTOGRAPHS (Continued)



**PARK MESA HEIGHTS** – Placement of catch basin #25.



**UG#4** – Staging struts at south end of cut and cover.

### CONSTRUCTION PHOTOGRAPHS (Continued)



**UG#4** –Lagging and excavation activities along the east wall.



**LEIMERT PARK STATION** – Placement of invert section C-4.

### CONSTRUCTION PHOTOGRAPHS (Continued)



**EXPOSITION/CRENSHAW STATION** – Installation of rebar and formwork for Invert level column.

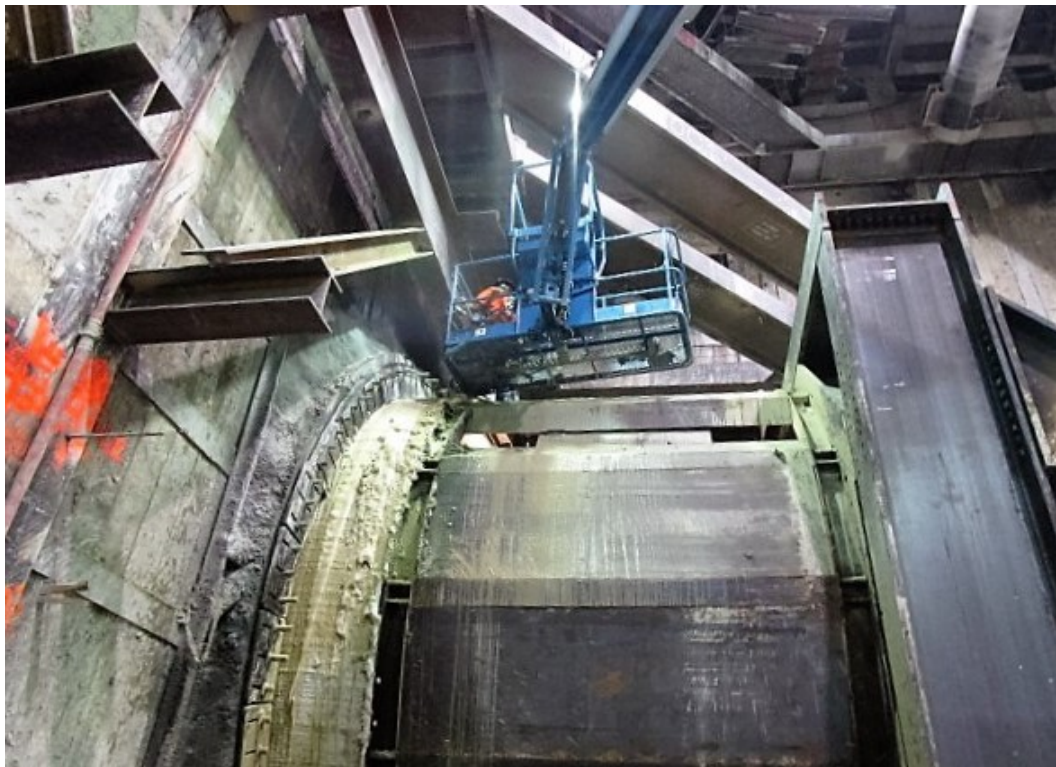


**TUNNELING** – Installation of ring #693.

### CONSTRUCTION PHOTOGRAPHS (Continued)



**TUNNELING** – Greasing tail seal brushes in preparation for continued mining.



**TUNNELING** – TBM nearly through tunnel eye seal.

**APPENDIX**

**PROJECT COST STATUS – SOUTHWESTERN YARD**

UNITS IN DOLLARS

SCC CODE	DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST VARIANCE
			PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
10	GUIDEWAYS	0	0	0	0	0	0	0	0	0	0
20	STATIONS	0	0	0	0	0	0	0	0	0	0
30	SUPPORT FACILITIES (Y & S)	85,546,835	0	85,189,999	0	86,532,695	70,700	70,700	0	86,889,531	1,699,532
40	SITWORK/SPECIAL CONDITIONS	35,932,000	0	38,273,000	0	38,658,086	1,659,912	18,427,368	0	38,273,000	0
50	SYSTEMS	25,784,616	0	32,991,000	0	32,991,000	0	0	0	32,991,000	0
(10-50)	CONSTRUCTION	147,263,451	0	156,453,999	0	158,181,781	1,730,612	18,498,068	0	158,153,531	1,699,532
60	RIGHT-OF-WAY	99,910,000	0	100,000,000	0	106,286,238	0	105,580,096	0	100,000,000	(0)
70	VEHICLES	0	0	0	0	0	0	0	0	0	0
80	PROFESSIONAL SERVICES	35,601,095	0	33,639,631	281,734	29,709,562	1,063,191	18,237,934	0	31,815,199	(1,824,432)
90	PROJECT CONTINGENCY	13,659,732	0	17,106,370	0	0	0	0	0	17,231,270	124,900
<b>TOTAL</b>		<b>296,434,278</b>	<b>0</b>	<b>307,200,000</b>	<b>281,734</b>	<b>294,177,581</b>	<b>2,793,803</b>	<b>142,316,098</b>	<b>0</b>	<b>307,200,000</b>	<b>(0)</b>

**C0991 PAINT & BODY SHOP PROJECT**

DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST VARIANCE
		PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
861301 DIV 22 PAINT & BODY SHOP	11,000,000	0	11,000,000	31,780	6,948,228	31,939	226,103	0	11,000,000	0

<b>GRAND TOTAL</b>	<b>307,434,278</b>	<b>0</b>	<b>318,200,000</b>	<b>313,514</b>	<b>301,125,809</b>	<b>2,825,742</b>	<b>142,542,201</b>	<b>0</b>	<b>318,200,000</b>	<b>(0)</b>
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**PROJECT COST ANALYSIS**

The project number 865512, 860003 and 861301 are internal to Metro and are used to differentiate between various components of the project.

**Original Budget:**

The Board in May 2015 established the Life-of-Project (LOP) budget of \$307.2 million for the Southwestern Yard Project.

**Current Budget:**

The Board in May 2015 approved an increase for the funding for the Southwestern Yard by \$22.0 million to increase the LOP budget to \$307.2 million to allow for the award of design-build Contract C0991 Southwestern Yard Project. Of the total \$307.2 million, \$150.2 million is funded in the Crenshaw/LAX Transit Project LOP budget which includes the original 49% allocation amount of \$139.4 million plus a new \$10.8 million reduction from the Crenshaw/LAX Transit Project contingency line item in the budget. There is no increase in the LOP for the Crenshaw/LAX Transit Project. The original 51% share associated with future Green Line related extensions in an amount of \$145.8 million was increased by \$11.2 million for a new total of \$157.0 million.

In addition to the \$307.2 million there is another \$11.0 million that is the budget for the paint and body shop, under another Metro internal cost project number, which funding was approved by a prior agreement for a paint and body shop to support the Green Line shops and was required for the award of the design-build Contract C0991 Southwestern Yard Project.

The grand total of the combined budget is \$318.2 million.

## **APPENDIX**

### **PROJECT COST ANALYSIS (Continued)**

**Current Forecast:** The forecast is under review.

**Commitments:**

The commitments are cumulative through October 1, 2016.

Total commitments increased by \$0.31 million for this period due to the following:

- SCC-40
  - No Change.
- SCC-60
  - Right-of-Way (ROW) no change.
- SCC-80
  - Other professional services such as legal, construction management and labor increased by \$0.31 for August/September.

The \$301.13 million in commitments to date represents 94.63% of the current budget.

**Expenditures:**

The expenditures are cumulative through October 1, 2016.

The total expenditures increased by \$2.83 million for this period due to the following:

- SCC-30
  - Support facilities increased by \$0.07 million for August/September.
- SCC-40
  - Sitework and special conditions increased by \$1.66 million for August/September.
- SCC-60
  - No Cost to Report.
- SCC-80
  - Hensel Phelps/Herzog JV, agency expenditure and professional services expenditure increase by \$2.83 million for August/September.

The \$142.54 million in expenditures to date represents 44.80% of the current budget.

## **COST AND BUDGET TERMINOLOGY**

### **Project Cost Descriptions -**

ORIGINAL BUDGET	The Original Project Budget as established by the Metropolitan Transportation Authority (Metro) Board on October 27, 2011.
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, 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 invoices, third party invoices, 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 LRT 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 receivable to the Metro as a direct result of project activities. This includes cost sharing construction items, insurance premium rebates, and the like.