# Crenshaw/LAX Transit Project



# **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).

**DECEMBER 2015** 

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### **PROJECT SUMMARY**

LOCATION: Crenshaw I DESIGN/CONSULTANT:	-	ition to Green	Line	CONSTRUCTION MANAGEMENT CONSULTANT: Stantec CONTRACTOR: Walsh-Shea Corridor Constructors (WSCC)					
PROJECT PHOTO: Desig Expo/Crenshaw Station .	gn-builder plac	ement of invert	slab at	WORK COMPLETED PAST MONTH:					
				<ul> <li>Design-builder continues fi</li> <li>Continued Tier 2 bracing ir</li> <li>Continued superstructure of</li> <li>Continued CIDH pile install</li> <li>Continued TBM assembly</li> <li>Continued superstructure of</li> <li>Continued soil excavation at one of the superstructure of</li> <li>Continued real estate acquatakes and temporary construct</li> </ul>	astallation for construction for segment pro lation for bridg at the Bellance construction for rk Mesa area at Leimert Pa accement at Pa isitions with ection easemel	or Century duction ge over I-4 a Ave yarc or the La B rk and MLł cpo/Crensh emphasis o nts.	bridge. 05. 1. rea bridge. K Stations naw Station.		
EXPENDITURE STATUS (\$ In Millions)				SCHEDULE ASSESSMENT					
,	CURRENT	EXPENDED	PERCENT	MAJOR SCHEDULE	PRIOR	CURRENT			
ACTIVITIES	BUDGET	AMOUNT	EXPENDED	ACTIVITIES	PLAN	PLAN	VARIANCE WEEKS		
	505011	7	2/4 210220	Environmental					
DESIGN	\$ 136.7	\$ 114.6	83.9%	FEIS/FEIR	Sep-11	Son 11	Complete		
DESIGN	φ 130.7	φ 114.0	83.9%						
				Record of Decision	Dec-11	Dec-11	Complete		
RIGHT-OF-WAY	\$ 127.4	\$ 111.0	87.1%						
CONSTRUCTION	¢ 4.050.4	¢ 400.4	0.4 70/	Design	Nev 44	N	O a mar la ta		
CONSTRUCTION	\$ 1,353.1	\$ 469.1	34.7%	, , , ,	Nov-11		Complete		
				Final Design	Sep-15	Jun-16	9.4 months behind		
OTHER	\$ 440.8	\$ 129.6	29.4%						
				Right-of-Way					
TOTAL	\$ 2,058.0		40.1%	Full-take parcels available	Jan-15		Complete		
Note: cost expended as o	f January 2, 20	)16.	-	Part-take and TCE parcels	Sep-15	Mar-16	6.5 months behind		
				Construction					
AREAS OF CONCERN				D-B Notice to Proceed	Sep-13	Sep-13	Complete		
				D-B Substantial Complete	Oct-18	Mar-10	4.7 months behind		
o Design-builder's ability to							On schedule <sup>*</sup>		
o Timely review of WSCC o 96th street station cost a				Revenue Service Date	Oct-19	Oct-19	On schedule		
		otential impact		The D-B Substantial Complete prior plan was modified by a 35-day concurrent delay contract modification in March 2015.					
				*Note: Current Revenue Service	Date includes a	reduction ir	a contingency.		
ROW ACQUISITION	PLAN	ACQUIRED	REMAINING	CRITICAL ACTIVITIES / 3 N	IONTH LOOI	K AHEAD			
FULL TAKES	35	35	0	<ul> <li>o Launch TBM at Expo/Crenshaw Station.</li> <li>o Complete excavation at MLK and Leimert Park Stations.</li> <li>o Commence work on Park Mesa area.</li> <li>o Continue working on Green Line Tie, Century, Imperial, La Brea,</li> </ul>					
PARTIAL TAKES	26	21	5	Manchester and I-405 aerial o Commence concrete place	structures.				
TEMPORARY EASEMENTS	12	12	0						
TOTAL PARCELS	73	68	5						

### **PROJECT OVERVIEW**

#### **Construction**

**Contract C0990** - The advanced utility relocations contractor, Metro Builders and Engineers Group, LTD was substantially completed on August 21, 2014. Contract is now in close-out phase. *Metro and Metro Builders and Engineers Group continued to meet in December to try and reach settlement on outstanding claims.* 

**Design- Build Contract C0988** – The design-builder, Walsh-Shea Corridor Constructors (WSCC) continues final design with preparation of required contract submittals. The designer is completing design for the most critical items that support the commencement of construction in the various areas of the project. Construction efforts by the design-builder continued along all major areas.

**Design- Build Contract C0991** – The design-builder, Hensel Phelps / Herzog JV was issued a notice-to-proceed on June 29, 2015. The design-builder continues work on final design.

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

There are a total of 73 parcels; one more parcel was added in October 2013 which was originally an encroachment. There are 35 full takes, 26 partial takes and 12 temporary construction easements (TCE's). There have been 68 parcels acquired through December 2015. Thirty-five full takes and 33 part takes/ temporary construction easements have been provided to design-builder WSCC. There are five remaining part takes/temporary construction easements that are required for base work to be turned over to WSCC.

Metro has acquired all full takes required for the construction of the Project. Focus now is on completing the acquisition of part-takes and entering into agreements for temporary construction easements that are required for the Project. As the design-builder continues design, they have identified some additional TCE's and partial takes that may be required. Metro will work with the design-builder regarding any additional parcel acquisitions that may be required. These additional parcels may be required for street restoration or other non-critical scope of work.

#### 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 interim course of action is to expand the existing functional operations at the ROC under a Phase 1 approach to support five new rail lines and extensions including the Crenshaw/LAX Project. The existing ROC will be expanded and will reconfigure the existing ROC service control and closed circuit television monitoring areas to increase overall space requirements by approximately 22 percent. A full build-out of a combined BOC/ROC is also being planned under a Phase 2 approach on land to be acquired by Metro as a separate Capital Improvement Project near Division 20.

### **PROJECT OVERVIEW (Continued)**

Final design of the ROC Reconfiguration Plan was completed and issued for review on February 28, 2014. The initial ROC reconfiguration effort will be for Exposition Phase II and Foothill Gold Line Projects. Crenshaw/LAX Transit Project ROC reconfiguration will be initiated in June 2017 and completed by February 2019.

#### **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%, state funding 8.8% and federal funding 11.3%.

The project commitments thru December 2015 are \$1,796.3 million or 87.3% of the Current Budget. The project expenditures thru December 2015 are \$824.4 million or 40.1% of the Current Budget.

### **PROJECT OVERVIEW (Continued)**

The current period expenditures are for design-builders monthly design and construction costs and professional services costs such as construction management and Metro 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.

This month the project schedule reflects an eight (8) day reduction in project contingency due to the design-builder reporting a loss of 8-calendar days for the placement of invert concrete at Expo/Crenshaw Station in their December 2015 Schedule Update. With this additional loss of eight days, Metro is reporting a projected 151 calendar day delay to the design-builder's contract substantial completion milestone (2019).

The design-builder reported a change from the previous month critical path, Park Mesa area construction, back to the long standing project critical path of Expo/Crenshaw Station TBM tunneling work. The reason for the switch in critical path was the inclusion of a mitigation plan by the design-builder this month in their schedule update which mitigated 81 days to the previously reported delay. The mitigation plan includes an introduction of a new intermediate stage of temporary traffic control for the Park Mesa area construction.

### **MANAGEMENT ISSUES**

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

<u>Status/Action</u> Metro and the City of Inglewood continue to work through various issues and may have solutions to outstanding issues so an agreement can be executed in the future.

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

**Status/Action** Metro is coordinating with all third party agencies in advance of WSCC final design submittals to ensure that timely review requirements will be met to support WSCC's current schedule submittal dates. The final design submittals will be submitted for review by third parties according to the most critical submittals to ensure the third party agencies are reviewing the most important designs first. Also, along with the concern above is the potential for third party agencies review comments leading to potential change requests outside of the original design signed off by the agencies during the preliminary engineering phase of the project. Metro will take action and strictly monitor the review comments from the agencies.

**Concern No. 3:** Additional scope of work for the design-builder to accommodate the Los Angeles World Airports (LAWA) Specific Plan Amendment Study (SPAS).

**Status/Action** The scope of work is for Metro to undertake a parallel design effort and construct changes in the vicinity of the Aviation/Century Station to accommodate elements of the SPAS. The Crenshaw/LAX Transit Project obtained Metro Board authorization to Proceed in December 2013 with the required future design or construction effort. Four changes have been executed with WSCC, three for design and one for construction. Metro is also working with LAWA on additional changes that may be considered by the Metro Board of Directors in the near future. The existing and any potential new changes to WSCC are not funded by the Crenshaw/LAX Transit Project but are funded by other funding sources.

**Concern No. 4:** Relocations of utilities by outside third parties required to be performed in advance of the main Crenshaw/LAX Design Build Contractor's work.

<u>Status/Action</u> Metro will complete the remaining advance utility relocation by December 2015.

### **MANAGEMENT ISSUES (Continued)**

**Concern No. 5:** Design-builders design submittal schedule

**Status/Action** WSCC is submitting submittals in advance of the construction need date but may potentially be at risk of late design submittals impacting future start of various construction activities. Metro has been working closely with WSCC and the cities to address the submittal schedule changes so as not to impact the project schedule critical path. Metro and the cities have also accelerated submittals specified as critical by WSCC so as not to impact construction. WSCC is now scheduled to issue their last submittal in June 2016. WSCC is approximately 97% complete and will continue design services during the construction phase.

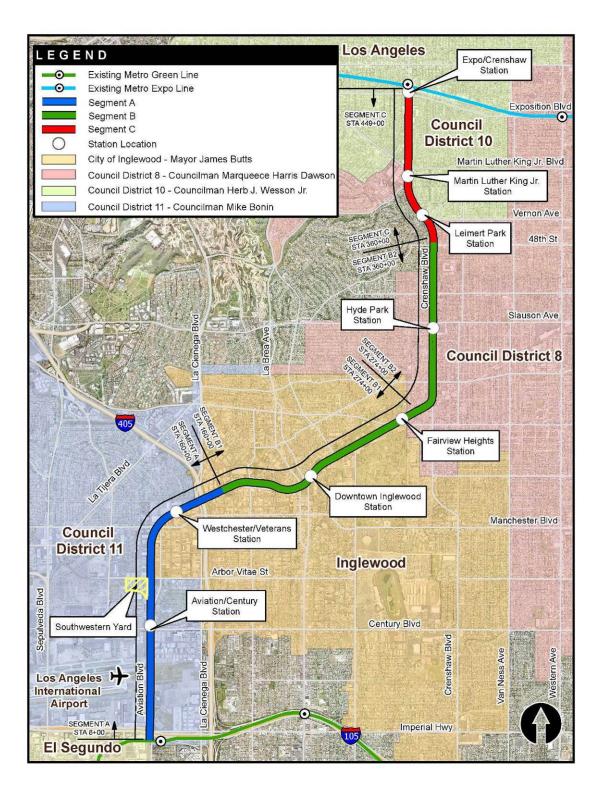
#### **Concern No. 6:** Design-builders construction schedule

**Status/Action** This month the project schedule reflects an eight (8) day reduction in project contingency due to the design-builder reporting a loss of 8-calendar days for the placement of invert concrete at Expo/Crenshaw Station in their December 2015 Schedule Update. With this additional loss of eight days, Metro is reporting a projected 151 calendar day delay to the design-builder's contract substantial completion milestone (2019). Metro and the design-builder are continuing discussions to resolve outstanding requests for time extensions and the change to accommodate a future 96<sup>th</sup> Street Station.

**Concern No. 7:** 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.

<u>Status/Action</u> 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. Metro continues to work with the design-builder to minimize the impact to current design as well as any construction impacts. A comprehensive modification is being negotiated with WSCC to finalize cost and schedule impacts.

### **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	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
Contract C0988 Start Assemble EPBM	12/01/15A					1 -	- , -
Contract C0988 Start MSE Wall - Aerial Structure #1	12/16/15A						
Contract C0988 Start Invert Slab - UG #1	01/04/16						
Contract C0988 Start Excavate/ Prep Guideway - Seg A	01/04/16						
Contract C0988 Start Station Platform - Florence / West	01/19/16						
Contract C0988 Start Station Platform - Florence / Hindry	01/25/16						
Contract C0988 Start MSE Wall - Manchester Bridge	01/25/16		ŵ				
Contract C0988 TPSS-10 Permanent Power Drop (Power for TBM)	01/31/16						
Contract C0988 Start MSE Wall - I-405 Bridge	02/03/16						
Contract C0988 Start Platform Level Lower Wall - Expo	02/04/16			THE OWNER			
Contract C0988 Expo Station Ready for TBM Machine	02/16/16			THE OWNER			
Contract C0988 Start TBM Muck Handling System	02/17/16						
Contract C0988 Complete Excavation & Mud Slab - Vernon	02/19/16			MACON DE LA CAL			
Contract C0988 Complete Excavation & Mud Slab - MLK	02/26/16			THE OFFICE			
Contract C0988 Start Excavation - UG #3	03/01/16				THE REPORT		
Contract C0988 Start Roadway Construction - Park Mesa	03/02/16				THE REPORT		
Contract C0988 Complete & Submit Design - Seg A	03/03/16						
Contract C0988 Complete Excavation - UG #1	03/07/16						
Contract C0991 Demo Early Access Date	03/08/16				$\triangle$		
Contract C0988 Complete Superstructure - La Brea Bridge	03/16/16						
Contract C0988 Complete Aasemble EPBM	03/30/16						
Contract C0988 TBM SB Launch @ Expo Station	03/31/16						
Contract C0988 Start MSE Wall - 111th St Bridge	04/04/16					ŵ	
Contract C0988 Start Platform - Aviation / Century	04/11/16					<u> </u>	
Contract C0988 Start Base Invert Slab - MLK	04/12/16					ŵ	
Contract C0988 Complete 111th St Bridge Superstructure	04/15/16					ŵ	
Contract C0988 Complete Excavation - UG #4 U Section	04/20/16					Û	
Contract C0988 Complete & Submit Design - Seg C	05/02/16						ŵ
Contract C0988 Start Signal & Lightning - Hindry & Florence	05/03/16						
Contract C0988 Complete Platform Level Lower Wall - Expo	05/17/16						

MTA Staff

MTA Board Action

Walsh

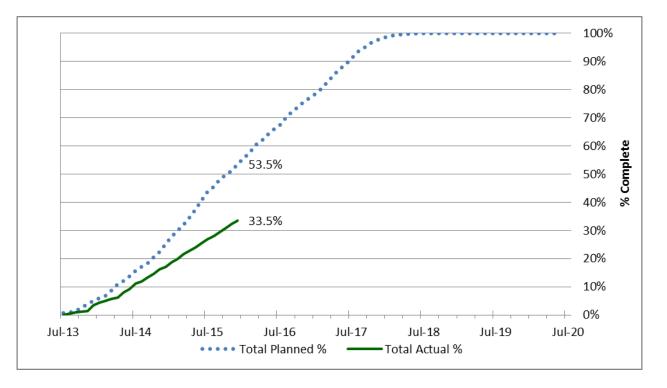
"A" following date is actual and completed

Crenshaw/LAX Transit Corridor - Dec 2015		Crenshaw-WBS Summary (MPSR)	Data Date: 01-01-16
Activity Name	Start Finish	2012         2013         2014         2015           1         1         1         1         1         1         1	2018 2019 20
Crenshaw/LAX Transit Corridor - Dec 2015	06-23-09 A 10:30-19		
Milestones & Kev Dates	11-19-09 A 10-30-19		
Program Elements	04-01-11 A 08-02-18		-
Project #865512 Crenshaw/LAX	06-23-09 A 03-13-19		
Contract C0990 Advanced Utility Relocation	10-20-10 A 08-21-14 A		
Contract C0988 Crenshaw/LAX	06-23-09 Å 03-13-19		
Project Planning & Development	09-24-10 A 09-04-12 A		
Design Build Procurement	12-22-11 A 09-10-13 A		
Design & Engineering	06-23-09 A 06-27-16		
General Requirement	07-10-13 A 03-13-19		ľ
Procurement	09-10-13 A 03-06-18		1
Sitework	09-03-13 A 02-05-19		
Guideway & Tack	07-08-14 A 08-08-18		
Tunneling	08-18-14 A 07-23-18		
Stations	05-01-14 A 12-12-18		
Systems	07-01-14 A 10-03-18 04-04-16 03-13-19		
Contract C0992 Concrete Ties and Assembly Items	06-03-13 A 08-15-14 A		
Contract Procirement	06-03-13 A 12-23-13 A		
Concrete Ties and Assembly Items Delivery	12-24-13 A 08-15-14 A		
Contract C0992A Running Rail & Bumping Post	10-15-13 A 05-08-15 A		
Contract Procurement	10-15-13 A 03-07-14 A	ſ	
Running Rail & Bumping Post Delivery	03-10-14 A 05-08-15 A		
C0991 Southwestern Yard & Paint/Body Shop	10-20-10 A 01-30-19		
Project #860003 Southwestern Yard Contract	10-20-10 A 10-08-18		
Preliminary Engineering	10-20-10 A 12-18-12 A		
Design Build Procurement	08-29-14 A 06-29-15 A		
Right of Way	01-31-12 A 10-31-17		
Final Design	06-29-15 A 10-26-16		
Construction & Installation	06-10-14 A 10-08-18		[
Project #861301 DIV.22 Paint and Body Snop			•
Start Up	03-13-19 10-30-19		]
◆ ◆ Milestone		Page t of t	
Summary			
		_	

### **PROJECT SUMMARY SCHEDULE**

### SCHEDULE MEASUREMENTS

		Change from Last	
	Status	Period	Comment
Current Revenue Service:	10/30/2019	None	
Forecast Revenue Service:	10/30/2019	None	
TIFIA Revenue Service:	10/30/2019	None	
Final Design Progress:			
Contract C0988	96.7%	0.1%	Behind Schedule
Contract C0990	100%	None	Design Completed
Contract C0991	9.5%	0%	Baseline Schedule Approved
Contract C0992	100%	None	Design Completed
Contract C0992A	100%	None	Design Completed
Construction Contracts Progress:			
Contract C0988	26.2%	1.3%	Behind Schedule
Contract C0990	100%	0%	Substantially Completed
Contract C0991	0%	-	Baseline Schedule Approved
Contract C0992	100%	0%	Substantially Completed
Contract C0992A	100%	0%	Substantially Completed



### **OVERALL CONSTRUCTION PROGRESS CURVE STATUS**

The actual overall construction progress is 33.5% versus a planned progress of 53.5% through December 2015. 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 Southwestern Yard Contract C0991 is excluded in the composite percentage but since the baseline schedule was just approved in late December 2015, it will be included in the January 2016 Report.

The physical progress percentage excludes non-construction items such as contractor's early 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

WSCC, the design-builder for Contract C0988, will procure the tunnel boring machine (TBM) and equipment.

Following are the major milestone dates for TBM procurement:

	Baseline	Nov-15	Dec-15	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	03/16/16	03/31/16	-15
TBM SB Break through at Vernon	09/17/15	07/25/16	08/01/16	-7
TBM NB Tunnel Launch at Expo	10/29/15	09/07/16	09/14/16	-7
TBM NB Break through at Vernon	03/21/16	01/19/17	01/26/17	-7

#### Light Rail Vehicles

The Board approved exercising Option 1 of Contract P3010 with Kinkisharyo International to provide light rail vehicles (LRV) for the Crenshaw/LAX project. By exercising this option prior to August 20, 2013, the Project avoided price escalation costs. 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 will be delivered every month starting from Aug 2015 with the last group of cars to be delivered on Jan 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.

#### **Concrete Ties and Assembly Items**

All 19,936 concrete ties that have been delivered to the job site have been determined to be Buy America compliant.

#### **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

	50300, EC			<i>.</i>
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 7	1/7/2016		1/1/2017	3/2/2017
		2/21/2016		
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		10/31/2015	12/30/2015
		5/4/2015		
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**

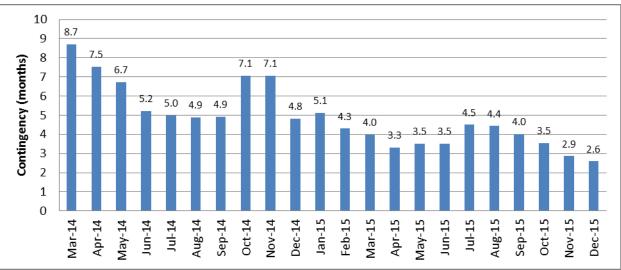
#### **Critical Path:**

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 March 13, 2019, which is 151 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 reforecast of their substantial completion milestone.

Metro this month reduced the forecast of the available project contingency by eight calendar days. This eight calendar days is the delay in the contractor's schedule for the Expo/Crenshaw station construction efforts which has been the critical path since the beginning of the design-build contract (September 2013).

The total contingency remaining is 2.6 months.

### **PROJECT COST STATUS**

SCC	DESCRIPTION	ORIGINAL	CURREN	NT BUDGET	COMM	ITMENTS	EXPEN	DITURES	CURRENT	FORECAST	CURRENT BUDGET/
CODE	DESCRIPTION	BUDGET	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	FORECAST VARIANCE
10	GUIDEWAYS	471,335,000	-	452,500,001	-	443,195,043	10,164,832	108,175,926	-	450,354,375	(2,145,626
20	STATIONS	153,906,000	-	316,050,000	282,387	301,776,720	4,255,462	118,244,888	-	315,050,000	(1,000,000
30	SUPPORT FACILITIES SOUTHWEST YARD	66,673,000	-	73,245,544	-	70,713,923	4,871,919	8,636,227	-	71,164,000	(2,081,544
40	SITEWORK\SPECIAL CONDITIONS	235,576,000	-	348,565,999	860,255	361,259,361	3,711,538	232,241,924	809,419	373,266,291	24,700,292
50	SYSTEMS	125,132,000	-	169,311,000	(114,425)	152,322,830	174,092	1,816,085	-	169,436,000	125,000
	CONSTRUCTION SUBTOTAL (10-50)	1,052,622,000	-	1,359,672,544	1,028,217	1,329,267,877	23,177,842	469,115,048	809,419	1,379,270,666	19,598,122
60	RIGHT-OF-WAY	132,294,000	-	127,400,000	1,943	113,575,244	1,404,049	110,982,817	-	127,490,000	90,000.00
70	LRT VEHICLES	87,780,000	-	82,100,000	-	82,050,901	-	11,452,422	-	82,100,000	-
80	PROFESSIONAL SERVICES	273,147,000	-	300,093,178	907,067	245,852,139	4,154,501	207,255,899	3,707,411	338,988,382	38,895,204
	SUBTOTAL (10-80)	1,545,843,000	-	1,869,265,722	1,937,227	1,770,746,160	28,736,392	798,806,186	4,516,830	1,927,849,048	58,583,326
90	UNALLOCATED CONTINGENCY	177,157,000	-	162,734,278	-	-	-	-	(4,516,830)	104,150,952	(58,583,326
100	FINANCE CHARGES	-	-	-	-	-	-	-	-	-	-
	TOTAL PROJECT 865512 (10-100)	1,723,000,000	-	2,032,000,000	1,937,227	1,770,746,160	28,736,392	798,806,186	-	2,032,000,000	-
	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	-
TOTAL	PROJECTS 405512 & 465512 (ENV / PLAN'G)	26,000,000	-	26,000,000	-	25,549,388	-	25,549,388	-	26,000,000	-
	TOTAL PROJECTS 405512, 465512 & 865512	1,749,000,000	-	2,058,000,000	1,937,227	1,796,295,548	28,736,392	824,355,573	-	2,058,000,000	-

## **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 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.

#### Commitments:

The commitments are cumulative through January 2, 2016. The total commitments increased by \$1.9 million this period primarily due to the following:

- SCC-20 (Stations, Stops, Terminals, Intermodal) has increased by \$0.3 due to executed modifications associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor
- SCC-40 (Sitework and Special Conditions) has increased by \$0.8 million primarily due to executed modifications associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-50 (Systems) has decreased by \$0.1 million due to cancellation of design-build Contract C0988 Crenshaw/LAX Transit Corridor approved change order and purchase order close-out.
- SCC-80 (Professional Services) has increased of \$0.9 due to executed contract modifications with design-build Contract C0988 Crenshaw/LAX Transit Corridor, legal services, third party coordination by Los Angeles City Departments and material lab testing services. The total commitment of \$245.9 million includes \$16.4 million for the Southwestern Yard 49% allocation.

The \$1,796.3 million in commitments to date represents 87.3% of the current budget.

#### Expenditures:

The expenditures are cumulative through November 28, 2015. The total expenditures increased by \$23.9 million this period due to the following:

- SCC-10 (Guideways) has increased by \$10.7 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-20 (Stations, Stops, Terminals, Intermodal) has increased by \$3.6 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-30 (Southwestern Yard) has increased by \$4.9 million for costs associated with Contract C0991 Division 16: Southwestern Yard (Design/Build) and third party utility relocation scope of work with HHS Construction, Inc.

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

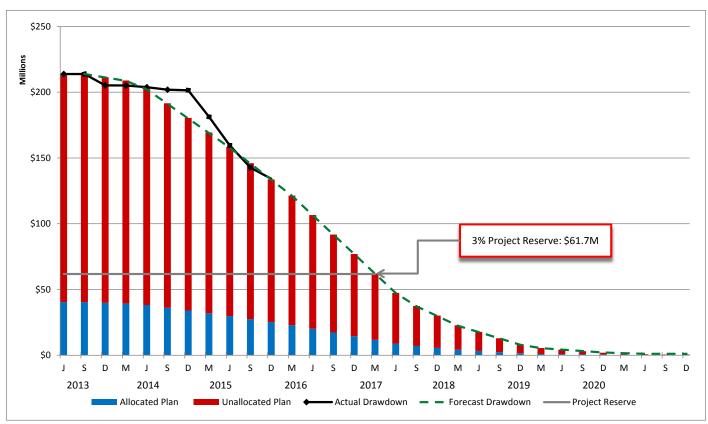
- SCC-30 (Southwestern Yard) has increased by \$0.3 million for costs associated with Contract C0991 Division 16: Southwestern Yard (Design/Build) and third party utility relocation scope of work with HHS Construction, Inc.
- SCC-40 (Sitework and Special Conditions) has increased by \$3.7 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor and third party utility relocation scope of work with Qwest.
- SCC-50 (Systems) has increased by \$0.2 million due executed modifications associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-60 (Right-Of-Way) has increased \$1.4 million for costs associated with real estate relocation. The total expenditure of \$111.0 million includes \$52.5 million for the Southwestern Yard 49% allocation.
- SCC-80 (Professional Services) has increased by \$4.1 million for costs associated with Contract C0988 Crenshaw/LAX Transit Corridor, Metro project administration, IPMO field office lease and utilities, non-federal funded community relation services, construction management support services, legal services, third party coordination by Los Angeles City Departments, project management assistance support, community relation and material lab testing services. The total expenditure of \$207.3 million includes \$5.2 million for the Southwestern Yard 49% allocation.

The \$824.4 million in expenditures to date represents 40.1% 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	CURREN	RENT BUDGET COMM		COMMITMENTS		EXPENDITURES		CURRENT	
DESCRIPTION	BUDGET	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	VARIANCE
405556 SYSTEMWIDE TRANSIT PLANNING	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	-	1,860,920	35,808	1,060,920	-	1,007,778	-	3,000,000	1,139,080
500013 C/LAX LAWA SCOPE OF WORK	1,575,362	-	1,575,362	-	531,125	-	228,387	-	1,575,362	-
TOTAL	4,390,998	-	6,058,264	35,808	4,074,791	-	1,408,911	-	7,197,344	1,139,080



#### **PROJECT COST CONTINGENCY DRAWDOWN**

Through 02-Jan--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 \$79,694,418 or 37.3% for both allocated and unallocated contingency through December 2015.

- The unallocated contingency decreased by \$4,516,830 due to executed contract modifications for the design-build contract C0988 Crenshaw/LAX Transit Corridor and executed Fiscal Year 2016 annual work order with Los Angeles City departments.
- Allocated contingency was increased by \$9,839 as a result of change orders cancellation for the design-build contract C0988 Crenshaw/LAX Transit Corridor.

PROJECT COST CONTINGENCY (through 02-Jan-2016) UNITS IN DOLLARS									
	Original Contingency (Budget)	Previous Period	Current Period	To-Date	Remaining Contingency (Forecast)				
Unallocated Contingency	173,500,000	(64,832,218)	(4,516,830)	(69,349,048)	104,150,952				
Allocated Contingency	40,366,792	(10,355,208)	9,839	(10,345,369)	30,021,423				
Total Contingency	213,866,792	(75,187,426)	(4,506,991)	(79,694,418)	134,172,374				

#### **DISADVANTAGED BUSINESS ENTERPRISE (DBE) STATUS**

Contract C0988 Crenshaw/LAX Transit Corridor Design-Build

(Reported Data as of November 15, 2015)

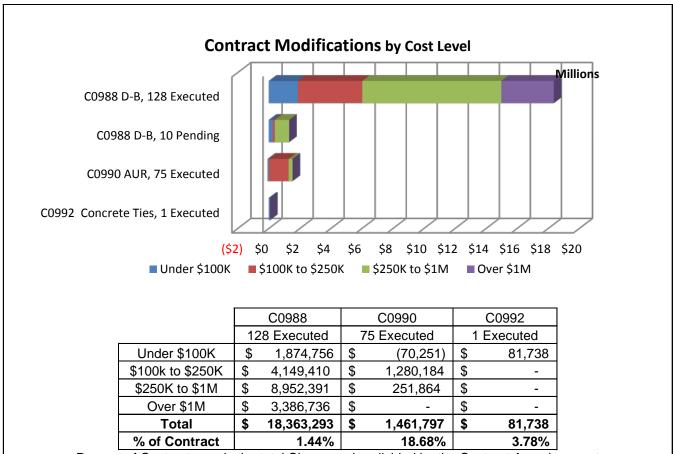
- DBE Goal Design 20%
- Current DBE Commitment \$20,232,929 (20.57%)
- Current DBE Participation \$23,181,345 (25.43%)
- Twenty (20) Design subcontractors have been identified to-date
- DBE Goal Construction 20%
  DBE Commitment \$236,116,671 (20%)
- Current DBE Commitment \$113,700,316 (9.62%)
- Current DBE Participation \$88,586,572 (24.81%)
- Sixty-three (63) Construction subcontractors have been identified to-date.

### **PROJECT LABOR AGREEMENTS (PLA) STATUS**

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

(Reported Data as of October 17, 2015; November report is currently being audited)

Targeted Worker Goal –	40.00%
Targeted Worker Current Participation -	59.33%
Apprentice Worker Goal -	20.00%
Apprentice Worker Current Participation -	17.76%
Disadvantaged Worker Goal -	10.00%
Disadvantaged Worker Current Participation	10.31%



### SUMMARY OF CONTRACT MODIFICATIONS

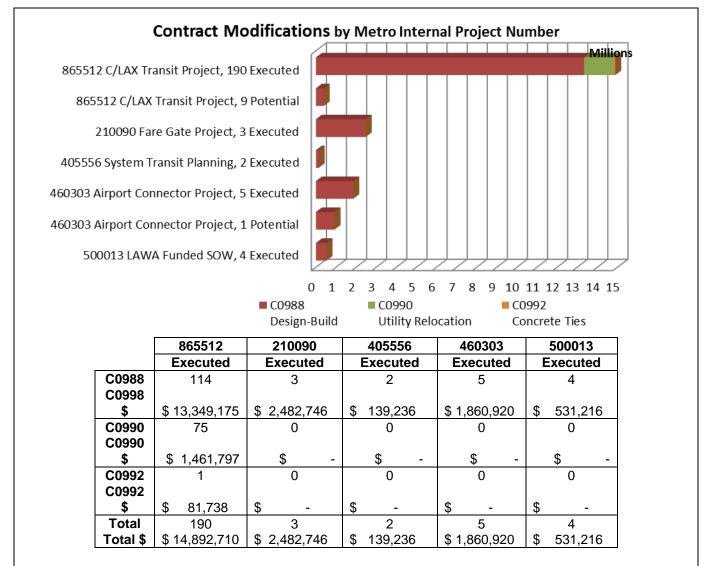
Percent of Contract equals the total Change value divided by the Contract Award amount

One hundred and twenty-eight (128) changes with a total value of \$18.36 million have been executed since execution of Contract C0988. There are additional ten (10) changes with a total value of \$1.31 million are pending the administrative approval process.

Seventy-five (75) changes with a total value of \$1.46 million have been executed since execution of Contract C0990.

One change with a value of \$81,738 has also been executed since execution of Contract C0992.

### SUMMARY OF CONTRACT MODIFICATIONS



One hundred and ninety (190) changes with a total value of \$14.90 million have been executed for Project 865512 Crenshaw/LAX Transit Project. There are additional nine (9) changes with a total value of \$0.39 million 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 \$139,236 have been executed for Project 405556 System Transit Planning.

Five (5) changes with a value of \$1.86 million have been executed for Project 460303 Airport Connector Project. There is an additional change with a total value of \$0.92 million pending the administrative approval process.

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

### **FINANCIAL/GRANT STATUS**

\$ in millions									
SOURCE	(A) ORIGINAL BUDGET	(B) TOTAL FUNDS	(C) TOTAL FUNDS	(D) (D/B) COMMITMENTS		(E) (E/B) EXPENDITURES		(F) (F/B) BILLED to FUNDING SOURCE	
		ANTICIPATED	AVAILABLE	\$	%	\$	%	\$	%
FEDERAL - CMAQ	68.2	54.0	54.0	54.0	100%	54.0	100%	54.0	100%
FEDERAL - SECTION 5309 BUS CAPT	8.6	8.6	8.6	8.6	100%	8.4	98%	8.4	98%
FEDERAL - REGIONAL STP	20.0	120.9	73.7	120.9	100%	73.7	61%	38.4	32%
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%
FEDERAL REGIONAL IMPROV PROG	34.3	34.4	0.0	34.4	100%	0.0	0%	0.0	0%
STATE REGIONAL IMPROVEMENT PROG	2.2	2.2	2.2	2.2	100%	2.2	100%	2.2	100%
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	331.1	545.9	100%	279.3	51%	279.3	51%
MEASURE R	661.1	661.1	502.8	661.1	100%	196.9	30%	153.9	23%
OTHER FUNDS*	52.4	187.5	13.0	13.0	0%	8.0	4%	8.0	4%
PROP C 25% HIGHWAY	148.9	189.5	3.7	112.4	59%	3.7	2%	3.7	2%
PROP C 40% DISCRETIONARY	0.0	10.2	0.0	0.0	0%	0.0	0%	0.0	0%
PROP A 35% RAIL CAPITAL	4.8	50.4	4.9	50.4	0%	4.9	0%	4.9	10%
TOTAL	1,749.0	2,058.0	1,187.3	1,796.3	87.3%	824.4	40.1%	746.0	36.2%

NOTE: Expenditures are cumulative through December 2015.

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

Total Funds Anticipated based on Board approved June 2013 Revised Funding

\* 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. *In February 2016, Metro will apply to FTA for a grant application of \$24.0M.* 

**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. A total of \$331.1M has been disbursed through November 2015.

**MEASURE R:** \$502.753M has been allocated to the project through FY2016. Funds are available for drawdown.

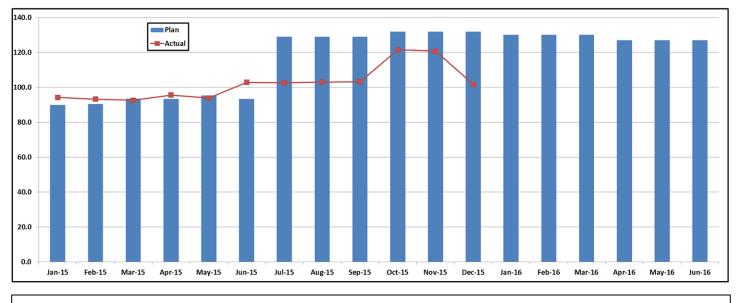
**OTHER FUNDS:** City of LA: Based on the funding agreement between Metro and the City of LA. \$13M is available for drawdown through FY2016.

**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.

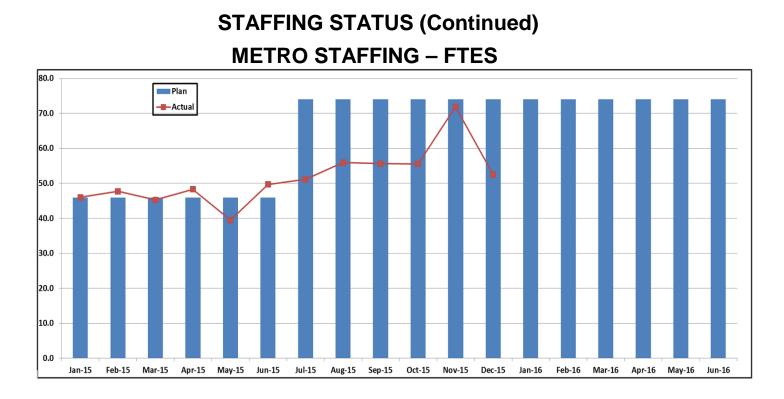
3. Actual staffing levels are cumulative through December 2015.

### TOTAL PROJECT STAFFING

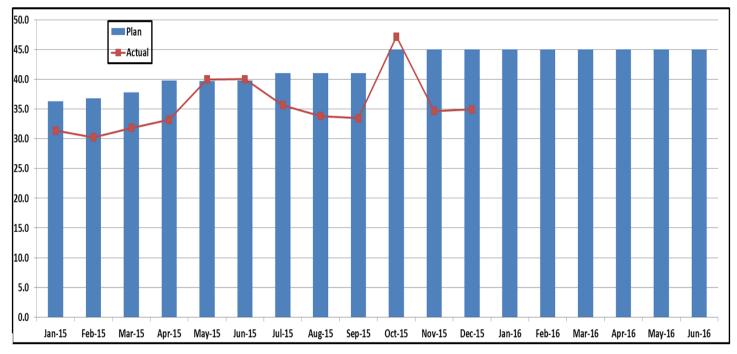
With the start of the 2016 fiscal year in July; the staffing for the Southwestern Yard Project is also included along with the Crenshaw/LAX Project for Metro and the Construction Management and Engineering Services consultants.

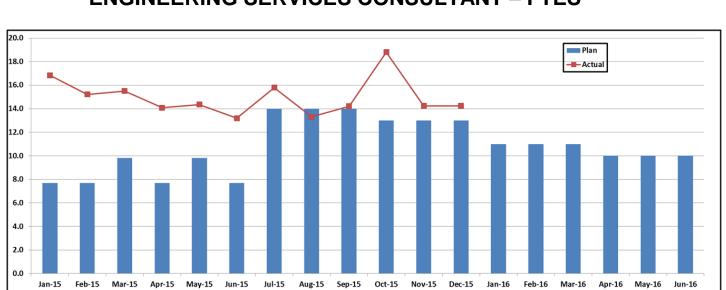
The planned staffing includes 11 new positions that were authorized by the Board in July 2015. Actual staffing will continue to be less than plan until new positions are filled throughout fiscal year 2016 and planned construction work increases with corresponding increases is staffing requirements.

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



### CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONSULTANT – FTES





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

Contract No.	Number of Parcels	Certified	Decertified	Appraisals Complete	Offers Made	Agreements Signed	Condemnations Filed	Relocations Complete	Parcels Available to WSCC
C0988 C/LAX Transit C			Decentifica	complete	Made	Jigricu	Tricu	complete	WJCC
Crenshaw Subdivision		•							
Full Takes	12	12		12	12	7	5	12	12
Part Takes (PT or SE)	10	9	1	9	9	2	6		9
TCE	10	10		10	10	1	8		10
Subtotal Parcels	32	31	1	31	31	10	19	12	31
Harbor Subdivision									
Full Takes	16	14		15	15	8	7	12	15
Part Takes (PT or SE)	18	17	2	18	16	7	9		12
TCE	3	2	1	2	2		2	1	2
Subtotal Parcels	37	33	3	35	33	15	18	13	29
Total CR/HS Parcels:	69	64	4	66	64	23	37	25	60
Southwestern Yard									
Full Takes	8	8		8	8	3	4	7	8
Part Takes	0								
TCE	0								
Subtotal Parcels:	8	8	0	8	8		4	7	8
Total SW Parcels:	8	8	0	8	8	6	4	7	8
C0990 C/LAX Advance	Utility Reloc	ations:							
Total Parcels:	0								
Total Project Parcels	77	72	4	74	76	28	41	32	68

### **REAL ESTATE STATUS**

- **76** parcels were certified originally. **4** were decertified due to changes in design and **1** property was added.
- **68** parcels acquired: **35** full takes (including HS-2706) and **33** part takes/Temporary Construction Easement (TCE) provided to WSCC.
- HS-1904-1 and 1907-1 (TCEs for the underground pedestrian easement) have been obtained and turned over to the contractor. The remaining TCE and part takes in these two parcels are anticipated to be turned over shortly pending final agreement with owner and acceptance of street easements by the City of Inglewood.

### **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.
- Metro Quality issued one Nonconformance Report to WSCC for failure to install K-Rail Safety Barriers at one intersection.
- WSCC Quality Assurance completed two Surveillance Reports this month. One report covered the start-up of the Tunnel Ring Production at the CSI-Hanson plant in Shafter, CA.
- Participated in Construction Work Package Reviews and related Readiness Reviews for Mud Slab Installation at UG 1 and UG4 and UG Station Strut/Waler Removal activities.
- Metro Quality and the Independent Test Lab witnessed the Shotcrete Nozzleman Qualification Trials for two wet process mixes.

## **ENVIRONMENTAL STATUS**

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

- Reviewed and commented on the following Contractor Submittals:
  - Weekly Noise Monitoring Data for Expo Station, MLK Station, Vernon Station, La Brea Station and Century Station
  - Green Construction Plan Monthly Report
  - Sustainability Plan Monthly Reports
  - o Weekly Storm Water Pollution Prevent Plan (SWPPP) inspection reports
  - o Weekly Fugitive Dust Inspection Reports
  - Various Construction Work Plans
- Continue to document compliance with the Project Mitigation Monitoring and Reporting Plan (MMRP). *Monitoring and Reporting Report (October December 2015) will be submitted in January 2016.*
- Obtained a Waste Discharge Permit from the Regional Water Quality Control Board for the injection of chemical grout into the groundwater at the Expo and MLK Station. *Metro will submit the Fourth Quarter Monitoring Report to the RWQCB in January 2016.*
- Monitored groundwater dewatering activities at the Expo Station. Metro receives and reviews Weekly Dewatering Reports.
- A hole was observed during the removal of the Underground Storage Tank at the Faithful Central Bible Church. Soil samples were collected from under the tank indicating minor levels of hydrocarbons. An eight-foot square excavation was done on December 10, 2015 to remove the impacted soil and samples were collected and analyzed. Results were non-detectable and Metro submitted a UST Closure Report to the LACDPW.
- Metro received a "No Further Action" letter from the RWQCB concerning UST CR-3701 as low threat criteria for case closure.
- Coordinated the gas pipe removal (previously abandoned by Southern California Gas Company) and the removal of the 10" Tesoro Oil pipeline in conflict with Vernon Station and UG#4 excavation.
- Conducted additional Contractor Cultural Awareness Training.

## **CONSTRUCTION RELATIONS STATUS**

- Walsh Shea proposed limited construction in the Park Mesa Heights at-grade segment. Construction Relations briefed schools/preschools and contacted businesses in the proposed work area.
- Conducted outreach to businesses and residents between 48<sup>th</sup> Street and 54<sup>th</sup> Street to update them on the proposed construction schedule and scope of work.
- Worked closely with West Angeles Villas and other stake holders in the UG3 Park Mesa Cut and Cover area to monitor and mitigate issues.
- Pile installation at UG#3 caused numerous complaints of vibration and concrete damage. Construction Relations are working with WSCC to minimize the impact and submit claims for damages.
- Worked with WSCC and the City of Inglewood to conduct outreach to specific stakeholders related to road closures and access issues north of Florence Avenue between West Blvd. and I-405.
- Worked with the City of Inglewood in regard to relocating a homeless encampment on Portal Avenue adjacent to the Metro ROW.
- Conducted a Project Briefing for religious leaders along the alignment at St. John Chrysostom Church in Inglewood.
- The CLC Quarterly Meeting is scheduled for late January 2016.
- The TBM Artwork and Naming Contest commenced in October and ended on December 1, 2015. More than 50,000 votes received.
- The Tunnel Boring Machine name selected is "Harriett" and the winning name and artwork will be announced at an event on February 1, 2016.

## SYSTEMWIDE DESIGN AND ART PROGRAM STATUS

- Responded to RFIs and submittal drawings.
- Continued work with a non-profit arts education organization for construction phase artworks developed by local youths to be installed in three locations in the City of Los Angeles and the City of Inglewood.
- Worked with Design Builder to refine artwork technical requirements and schedule.
- Worked with artists to refine their designs for submission to fabricators.
- Participated in Systemwide Design integration reviews and presentations.
- Assisted Procurement with review of RFP submissions for mosaic fabricators to translate artist's designs for three underground stations.
- Worked with Design Builder to identify safety spacing requirements for art fencing.
- Responded to signage submittal drawing packages.

# **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.
- Monitored construction activities on a daily basis including nights and weekends to ensure compliance with contract specifications.
- Conducted bi-weekly Site Safety Walks with WSCC's Safety personnel to enhance overall safety awareness. Minor safety hazards observed and corrected immediately.
- Conducted All Hands Safety/Security Meeting covering Holiday Safety/Security coverage, Emergency Extrication Plan for Bridges and submittal updates.
- Participated in WSCC's Executive Safety Committee Meeting on December 2, 2015.
- Attended Walsh/Shea's Safety Tail Gate Huddle Meetings at the Expo, Vernon and Bellanca Yards.
- Attended Walsh/Shea's Readiness Review Meeting for mud slab installation for UG#1 and UG#4, counterweight removal and removal of lower struts and walers at UG#1.
- Metro and WSCC's Safety personnel conducted security sweeps in preparation for Christmas Holiday street closures.
- Walsh/Shea reported 102,744 work hours and no recordable incident for the month of December 2015. Total Project-to-Date work hours are 1,991,129 and fifteen recordable incidents. The Project Incident Rate is 1.5. The Bureau of Labor Statistics (BLS) average recordable rate per 200,000 work-hours is 3.2.

Third Party	Type of Agreement	Forecast Execution Date	Required Need Date	Status/ Comments
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	2/16	N/A	Executed Letter of Agreement April 2012. Metro working on outstanding issues.
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 <b>/</b> 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.

## ADVANCED UTILITY RELOCATION STATUS

• Tesoro Oil – design completed for 8" gas line. Construction should be completed by middle January 2016.

#### Crenshaw/LAX Transit Project Peak Hour & Nighttime Construction Variances for the City of LA

- WSCC has permit variances for nighttime and early morning construction for Segments A thru E.
- All permits have to be renewed every six months from date of issuance by the Los Angeles Police Commission.



# **CPUC CROSSING SUMMARY**

• The CPUC has approved all packages.

Application	Location	Туре	City
A1211018	Eucalytpus Avenue	Grade Crossing	Inglewood
A1211018	Centinela Avenue	Grade Crossing	Inglewood
A1211018	Pedestrian Crossing	Grade Separated (Underpass)	Inglewood
A1212030	Oak Street	Grade Crossing	Inglewood
A1212030	Cedar Avenue	Grade Crossing	Inglewood
A1212030	Ivy Avenue	Grade Crossing	Inglewood
A1212030	High Street	Grade Crossing	Inglewood
A1212029	Arbor Vitae Street	Grade Crossing	Inglewood
A1212029	Hindry Avenue	Grade Crossing	Inglewood
A1212029	Pedestrian Crossing at Florence/West station	Grade Crossing	Inglewood
A1212029	West Boulevard	Grade Crossing	Los Angeles/Inglewood
A1212029	Brynhurst Avenue	Grade Crossing	Los Angeles
A1301012	West 59th Street	Grade Crossing	Los Angeles
A1301012	Slauson Avenue	Grade Crossing	Los Angeles
A1301012	West 57th Street	Grade Crossing	Los Angeles
A1301012	West 54th Street	Grade Crossing	Los Angeles
A1301012	West 52nd Street	Grade Crossing	Los Angeles
A1301012	West 50th Street	Grade Crossing	Los Angeles
A1301012	West 48th Street	Grade Crossing	Los Angeles
A1302025	Hornet Way	Grade Separation	El Segundo
A1302025	Aviation Boulevard	Grade Separation	
A1302025			Los Angeles
	I-105 Freeway	Grade Separation	Los Angeles
A1302025	Imperial Highway	Grade Separation	Los Angeles
A1302025	111th Street	Grade Separation	Los Angeles
A1302025	104th Street	Grade Separation	Los Angeles
A1302025	Century Boulevard	Grade Separation	Los Angeles
A1302025	Manchester Avenue	Grade Separation	Inglewood
A1302025	La Cienega Boulevard	Grade Separation	Inglewood
A1302025	I-405 Freeway	Grade Separation	Inglewood
A1302025	Hyde Park Boulevard	Grade Separation	Inglewood
A1302025	La Brea Avenue	Grade Separation	Inglewood
A1302025	Pedestrian Crossing at La Brea-Florence Station (East)	Grade Crossing	Inglewood
A1302025	Pedestrian Crossing at La Brea-Florence Station (West)	Grade Crossing	Inglewood
	= Highlighted grade crossing/grade separations have	e been approved.	

## 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.

## **CONTRACT C0988 STATUS**

Crenshaw/LAX Transit Corridor

PE Design Contractor: Hatch M CM Consultant: Stantec	ott MacDo	onald (HM	Contract No.: C0988				
Contractor: - Walsh Shea Corrie	dor Const	ructors (V	Status as of December 31, 2015				
Progress/Work Completed: Construction - Continued potholing along the Grad Continued geotechnical monitoring - Continued Chemical Grouting for TF - Continued Grouting grid, mud slab & invert conduit & plumbing construc - Continued soil excavation & SOE in - Continued soil excavation & SOE in - Continued the TBM assembly at the - Completed Jet Grouting for Cross P - Commenced excavation at UG #4. - Continued SOE Installation at UG # - Continued SOE Installation at UG # - Continued MSE wall panel erection/ - Continued Superstructure work at th - Continued Structural concrete work - Continued abutment footing at I-405 - Completed the MSE wall panel erect - Continued excavation & bracing ins - Commenced mud slab, waterproofin - Completed abutment stem wall at th - Completed column work at the Greet - Continued falsework construction at	MLK, Expo ut. ofing, protect o Station. Vernon & 'ard. g B1. La Brea. oridge. Brea MSE gment B1. strian Unde II at Centur JG #1. tive slab at dge. In.	Areas of Concern: - Possible cobbles and boulders found during excavation at Expo and MLK station. - Station excavation impacted by excessive water inflow at EXPO Station. - Segment A guideway work may be impacted by implementation of a					
Schedule Assessment: Contractor's Dec 2015 schedule upda Substantial Completion is 151 calence					and is within th The Contracto approved amo *Please note th	ment: instruction contract cost foreca e Board authorized budget. r submitted their 28th payment unt of \$14,463,933.53. hat not all executed modification contractor current payment a	application in the
Schedule Summary:					Cost Summa	ry:	\$ In millions
1. Date of Award:		08/01/13			1. Award Val	ne:	1,272.63
2. Notice to Proceed:		09/10/13			2. Executed I		14.73
<ol> <li>Original Substantial Completion D</li> </ol>	Juration:	1824					
			3. Approved	Change Orders:	2.67		
•						Change Orders: (1 + 2 + 3)	2.67 1.290.03
4. Current Substantial Completion D		2010			4. Current Co	ontract Value (1 + 2 + 3):	1,290.03
<ol> <li>Current Substantial Completion D</li> <li>Elapsed Time from NTP:</li> </ol>	Ouration:	2010 843 Current		Calendar Day		ontract Value (1 + 2 + 3):	1,290.03 511.36 <b>_ETE</b>
<ol> <li>Current Substantial Completion D</li> <li>Elapsed Time from NTP:</li> <li>Milestones</li> </ol>	Ouration: Original Contract	2010 843 Current Contract	Forecast	Day Variance	4. Current Co	ontract Value (1 + 2 + 3): ost: PERCENT COMPL	1,290.03 511.36 <b>_ETE</b>
<ol> <li>Current Substantial Completion D</li> <li>Elapsed Time from NTP:</li> </ol>	Ouration:	2010 843 Current	Forecast 03/13/19	Day	4. Current Co 5. Incurred C	ontract Value (1 + 2 + 3): ost: PERCENT COMPL	1,290.03 511.36 <b>_ETE</b>
4. Current Substantial Completion D     5. Elapsed Time from NTP:     Milestones Milestone 1 - Contract Substantial	Ouration: Original Contract	2010 843 Current Contract		Day Variance	4. Current Co	ontract Value (1 + 2 + 3): ost: PERCENT COMPL	1,290.03 511.36 LETE 16
4. Current Substantial Completion D     5. Elapsed Time from NTP:     Milestones     Milestone 1 - Contract Substantial     Completion     Milestone 2 - UFS Completion     Milestone 3 - Commence SIT Phase I	Original Contract 09/08/18	2010 843 Current Contract 10/13/18	03/13/19	Day Variance -151	4. Current Co 5. Incurred C	ontract Value (1 + 2 + 3): ost: PERCENT COMPL	1,290.03 511.36 LETE 16
4. Current Substantial Completion D 5. Elapsed Time from NTP: Milestones Milestone 1 - Contract Substantial Completion Milestone 2 - UFS Completion	Original Contract 09/08/18 03/09/18	2010 843 Current Contract 10/13/18 04/13/18	03/13/19 09/05/18	Day Variance -151 -145	4. Current Co <u>5. Incurred C</u> Design Construction Total Incurred	ontract Value (1 + 2 + 3): ost: PERCENT COMPL from 9/10/13 to 1/1/	1,290.03 511.36 LETE 16
4. Current Substantial Completion D 5. Elapsed Time from NTP: Milestones Milestone 1 - Contract Substantial Completion Milestone 2 - UFS Completion Milestone 3 - Commence SIT Phase I Milestone 4 - Const./Turnover Parcels SW-0101, 0102, 0103 Milestone 5 - Const./Turnover Parcels SW-0002, 0003, 0004, 0104	Original Contract 09/08/18 03/09/18 06/09/18	2010 843 Current Contract 10/13/18 04/13/18 07/14/18	03/13/19 09/05/18 12/14/18	Day Variance -151 -145 -153	4. Current Co 5. Incurred C Design Construction	PERCENT COMPL from 9/10/13 to 1/1/	1,290.03 511.36 LETE 16 96.7%
4. Current Substantial Completion D 5. Elapsed Time from NTP: Milestones Milestone 1 - Contract Substantial Completion Milestone 2 - UFS Completion Milestone 3 - Commence SIT Phase I Milestone 4 - Const./Turnover Parcels SW-0101, 0102, 0103 Milestone 5 - Const./Turnover Parcels	Original Contract 09/08/18 03/09/18 06/09/18 12/04/15	2010 843 Current Contract 10/13/18 04/13/18 07/14/18 12/04/15	03/13/19 09/05/18 12/14/18 04/04/16	Day Variance -151 -145 -153 -122	4. Current Co 5. Incurred C Design Construction Total Incurred Cost	PERCENT COMPL from 9/10/13 to 1/1/	1,290.03 511.36 <b>ETE</b> 16 <b>96.7%</b> <b>96.7%</b> <b>96.7%</b> <b>100.0%</b> <b>100.0%</b>

## **CONTRACT C0990 STATUS**

Crenshaw/LAX Advanced Utility Relocations

	n Mott MacDonald (H			Contract No.: C0990		CALL.
Contractor: - Metro Builders	and Engineers Gro	up LTD	Status as of Decembe	er 31, 2015		
Progress/Work Completed: - The construction was substantia - Metro and Contractor are workin then the Contract can be closed of	ng on resolving outstan	1, 2014 ding claim	Areas of Concern:			
Schedule Assessment: Metro granted substantial comple Contractor on August 21, 2014, w				Cost Assessment: The current construction of Board authorized budget. The unpaid amount is the remaining balance of prov	scope deletion from t	
Schedule Summary:				Cost Summary:		\$ In millions
Schedule Summary: 1. Date of Award:	05/30/12			Cost Summary: 1. Award Value:		\$ In millions 7.83
	05/30/12 07/17/12			-	าร:	•
1. Date of Award:	07/17/12			1. Award Value:		7.83
<ol> <li>Date of Award:</li> <li>Notice to Proceed:</li> </ol>	07/17/12 on Duration: 365			<ol> <li>Award Value:</li> <li>Executed Modification</li> </ol>	ders:	7.83 0.97
<ol> <li>Date of Award:</li> <li>Notice to Proceed:</li> <li>Original Substantial Completion</li> </ol>	07/17/12 on Duration: 365			<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change Or</li> </ol>	ders:	7.83 0.97 0.49
<ol> <li>Date of Award:</li> <li>Notice to Proceed:</li> <li>Original Substantial Completio</li> <li>Current Substantial Completio</li> <li>Elapsed Time from NTP:</li> </ol>	07/17/12 on Duration: 365 on Duration: 468 753 Original Current	Forecast	Calendar Day Variance	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change Or</li> <li>Current Contract Value</li> </ol>	ders:	7.83 0.97 0.49 9.29 9.12 TE
Date of Award:     Date of Award:     Notice to Proceed:     Original Substantial Completio     Current Substantial Completio     Elapsed Time from NTP: <u>Milestones     Milestones     Milestone 1 - Contract Substantial     </u>	07/17/12 on Duration: 365 in Duration: 468 753 Original Current Contract Contract	Forecast 08/21/14	Day Variance	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change Ort</li> <li>Current Contract Value</li> <li>Incurred Cost:</li> </ol>	ders: ue (1 + 2 + 3): PERCENT COMPLE	7.83 0.97 0.49 9.29 9.12 TE
<ol> <li>Date of Award:</li> <li>Notice to Proceed:</li> <li>Original Substantial Completio</li> <li>Current Substantial Completio</li> <li>Elapsed Time from NTP:</li> </ol>	07/17/12 on Duration: 365 on Duration: 468 753 Original Current	Forecast 08/21/14	Day	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change Or</li> <li>Current Contract Value</li> </ol>	ders: ue (1 + 2 + 3): PERCENT COMPLE	7.83 0.97 0.49 9.29 9.12 TE
Date of Award:     Date of Award:     Notice to Proceed:     Original Substantial Completio     Current Substantial Completio     Elapsed Time from NTP: <u>Milestones     Milestones     Milestone 1 - Contract Substantial     </u>	07/17/12 on Duration: 365 in Duration: 468 753 Original Current Contract Contract		Day Variance	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change On</li> <li>Current Contract Value</li> <li>Incurred Cost:</li> </ol>	ders: ue (1 + 2 + 3): PERCENT COMPLE	7.83 0.97 0.49 9.29 9.12 TE
Date of Award:     Date of Award:     Notice to Proceed:     Original Substantial Completio     Current Substantial Completio     Elapsed Time from NTP: <u>Milestones     Milestones     Milestone 1 - Contract Substantial     </u>	07/17/12 on Duration: 365 in Duration: 468 753 Original Current Contract Contract		Day Variance	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change Ori</li> <li>Current Contract Valui</li> <li>Incurred Cost:</li> </ol>	ders: ue (1 + 2 + 3): PERCENT COMPLE	7.83 0.97 0.49 9.29 9.12 TE
Date of Award:     Date of Award:     Notice to Proceed:     Original Substantial Completio     Current Substantial Completio     Elapsed Time from NTP: <u>Milestones     Milestones     Milestone 1 - Contract Substantial     </u>	07/17/12 on Duration: 365 in Duration: 468 753 Original Current Contract Contract		Day Variance	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change On</li> <li>Current Contract Value</li> <li>Incurred Cost:</li> </ol>	ders: ue (1 + 2 + 3): PERCENT COMPLE	7.83 0.97 0.49 9.29 9.12 TE
Date of Award:     Date of Award:     Notice to Proceed:     Original Substantial Completio     Current Substantial Completio     Elapsed Time from NTP: <u>Milestones     Milestones     Milestone 1 - Contract Substantial     </u>	07/17/12 on Duration: 365 in Duration: 468 753 Original Current Contract Contract		Day Variance	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change On</li> <li>Current Contract Value</li> <li>Incurred Cost:</li> </ol> Design           0%           Construction           Total Incurred	ders: Ie (1 + 2 + 3): PERCENT COMPLE from 7/17/12 to 8/21/14	7.83 0.97 0.49 9.29 9.12 TE
Date of Award:     Date of Award:     Notice to Proceed:     Original Substantial Completio     Current Substantial Completio     Elapsed Time from NTP: <u>Milestones     Milestones     Milestone 1 - Contract Substantial     </u>	07/17/12 on Duration: 365 in Duration: 468 753 Original Current Contract Contract		Day Variance	<ol> <li>Award Value:</li> <li>Executed Modification</li> <li>Approved Change Ort</li> <li>Current Contract Value</li> <li>Incurred Cost:</li> </ol> Design           Org           Design           Construction           Total Incurred           0%           20%	ders: Ie (1 + 2 + 3): PERCENT COMPLE from 7/17/12 to 8/21/14	7.83 0.97 0.49 9.29 9.12 TE TE 80% 100% gress

# **CONTRACT C0991 STATUS**

Southwestern Yard

PE Design Contractor: Hatch Mott MacDonald (HMM) CM Consultant: Stantec						Contract No.: C0991			
						atus as of December 31, 2015 eas of Concern: one.			
Schedule Assessment: - Change Order # CO-0004 was issu- calendar days. Schedule Summary: 1. Date of Award:	ed extendir	ig contract	duration by	/ 90	- Ci - Ti - Fi	ost Assessment: ontract to Hensel Phelps / Herzog JV was a hird pay application has been approved by ourth pay application is pending resubmittal st Summary: Award Value:	Metro.		
2. Notice to Proceed:		29-Jun-15				Executed Modifications:	0.00		
3. Original Substantial Completion D		1,220				Approved Change Orders:	0.00		
<ol> <li>Current Substantial Completion D</li> <li>Elapsed Time from NTP:</li> </ol>	uration:	1,311 186			4. 5.	Current Contract Value (1 + 2 + 3): Incurred Cost:	172.30 7.53		
Milestones	Original Contract	Current Contract	Forecast	Calendar Day Variance		PERCENT COMP from 06/29/15 to 1			
MS#1 Yard and Main Shop Design	26-Oct-16	26-Oct-16	26-Oct-16	0					
Completion MS#2 Main Shop Communication Room Completion	15-Jan-18	16-Apr-18	16-Apr-18	0		Design 9.5%			
MS#3 Main Shop Substantial Completion	30-Apr-18	30-Jul-18	30-Jul-18	0		Construction			
MS#4 Southwestern Yard Substantial Completion	31-Oct-18	30-Jan-19	30-Jan-19	0	т		.0% 80.0% 100.0%		
						Percent Complete Construction physical percent co	nplete excludes		
				1		mobilization and general requiren	a m fa		

## **CONTRACT C0992 STATUS**

Concrete Ties

nc. eceived on:	site by the	design-bui	ilder	Status as of December 31, 2015 Areas of Concern:
				Cost Assessment: The current construction contract cost is \$2.25 million and has bee completely paid to contractor.
iration: ration:		12/23/13 220 235		Cost Summary:\$ In millions1. Award Value:2.162. Executed Modifications:0.093. Approved Change Orders:4. Current Contract Value (1 + 2 + 3):-4. Current Contract Value (1 + 2 + 3):-2.255. Incurred Cost:2.25
Original Contract 07/31/14	Current Contract 08/15/14	Forecast 08/15/14	Calendar Day Variance 0 0 0 0 0 0 0	from 12/23/2013 to 8/15/14
	ration: Original Contract	ration: Original Current Contract Contract	12/23/13         ration:       220         ration:       235         235         Original       Current         Contract       Forecast	ration: 235 235 Original Current Contract Contract Contract Forecast Variant 07/31/14 08/15/14 08/15/14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

#### **CONTRACT C0992A STATUS**

Running Rail and Bumping Posts

PE Design Contractor: Hatch CM Consultant: Stantec		-	Contract No.: C0992A				
Contractor: LB Foster Rail Tea Progress/Work Completed: - All 115RE SS Blank Stick Rails h - All 115RE HH rail have been deli - All Bumping Posts have been deli	ave been del vered to job s	ivered to th			Status as of December 31, 2015 Areas of Concern:		
Schedule Assessment: All running rails and bumping posts schedule.	have been d	elivered at		<b>Cost Assessment:</b> The current contract cost is \$5,2 million and has been completely paid to contractor.			
Schedule Summary:					Cost Summary: \$ In millions		
1. Date of Award:			01/23/14	Ļ	1. Award Value: 5.2		
2. Notice to Proceed:			03/07/14	Ļ	2. Executed Modifications:		
3. Original Substantial Completion	Duration:		300	)	3. Approved Change Orders:		
4. Current Substantial Completion	Duration:		558	3	4. Current Contract Value (1 + 2 + 3): - 5.2		
5. Elapsed Time from NTP:			448	3	5. Incurred Cost: 5.2		
	Original	Current		Calendar Day	from 3/7/2014 to 05/29/15		
Milestones Milestone 1 - Contract Substantial	Contract	Contract	Forecast				
Completion	12/31/14	09/30/15	05/08/15	145			
				0	Construction 100%		
				0			
				0	Total Incurred Cost 100%		
				0	0% 20% 40% 60% 80% 100%		
				0	Percent Complete Progress		
					Construction physical percent complete excludes mobilization and general requirements		

### **CONSTRUCTION PHOTOGRAPHS**



**GREENLINE UNDERPASS**: Falsework construction for superstructure ongoing. Stringers over Imperial have been set.





**MSE (Wall 3, 60L&R):** Precast panel erection, placement of soil reinforcement, backfilling and compaction testing complete as of 12/14/15.



**UG1** - Pouring mud slab at the South end (approximately 475 linear ft).



**UG1** - Crews working on tier 2 walers and struts, installing treated wood lagging and removing spoils to haul off-site.



AVIATION/CENTURY – Steel placement of interior stem reinforcement in span 6



# **CONSTRUCTION PHOTOGRAPHS (Continued)**

**MANCHESTER UNDERPASS** – Abutment 1 stem prep for concrete pour with steel placement



I-405 UNDERPASS - Abutment 1 footing concrete pour and curing



LA BREA UNDERPASS – Interior stem panel placement



**LEIMERT PARK STATION/UG4**– Excavation and lagging operation looking south



**LEIMERT PARK STATION/UG4** – Looking north into Leimert Park Station from UG4



MARTIN LUTHER KING STATION - Excavation and lagging operation at headwall



**EXPOSITION/CRENSHAW STATION** – Installation of rebar for invert slab



**EXPOSITION/CRENSHAW STATION** – Installation of waterproofing in the south end of station box



EXPOSITION/CRENSHAW STATION - Placement of mud slab



EXPOSITION/CRENSHAW STATION – Invert pour in late December



# PROJECT COST STATUS – SOUTHWESTERN YARD

IN DOLLARS										
DESCRIPTION	ORIGINAL CURRENT BUDGET		TBUDGET	COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST
DESCRIPTION	BUDGET	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	VARIANCE
GUIDEWAYS	0	0	0	0	0	0	0	0	0	0
STATIONS	0	0	0	0	0	0	0	0	0	0
SUPPORT FACILITIES (Y & S)	85,546,835	0	85,189,999	0	86,532,695	0	0	0	86,889,531	1,699,532
SITEWORK\SPECIAL CONDITIONS	35,932,000	0	38,273,000	(172,597)	37,722,923	4,699,322	8,636,227	0	38,273,000	0
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	(172,597)	157,246,618	4,699,322	8,636,227	0	158,153,531	1,699,532
RIGHT-OF-WAY	99,910,000	0	100,000,000	0	91,045,831	0	90,953,927	0	100,000,000	(0)
VEHICLES	0	0	0	0	0	0	0	0	0	0
PROFESSIONAL SERVICES	35,601,095	0	33,639,631	109,367	21,436,763	187,976	9,547,307	0	31,815,199	(1,824,432)
PROJECT CONTINGENCY	13,659,732	0	17,106,370	0	0	0	0	0	17,231,270	124,900
L	296,434,278	0	307,200,000	(63,230)	269,729,212	4,887,298	109,137,461	0	307,200,000	(0)
PAINT & BODY SHOP PROJECT										
PIPTION	ORIGINAL	CURREN	TBUDGET	COMMI	TMENTS	EXPEN	DITURES	CURRENT	FORECAST	FORECAST
	BUDGET	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	VARIANCE
1 DIV 22 PAINT & BODY SHOP	11,000,000	0	11,000,000	99	6,915,531	99	193,247	0	11,000,000	0
ECT GRAND TOTAL	307,434,278	0	318,200,000	(63,131)	276,644,743	4,887,396	109,330,707	0	318,200,000	(0)
	DESCRIPTION GUIDEWAYS STATIONS SUPPORT FACILITIES (Y & S) SITEWORK\SPECIAL CONDITIONS SYSTEMS (10-50) CONSTRUCTION RIGHT-OF-WAY VEHICLES PROFESSIONAL SERVICES PROJECT CONTINGENCY L PAINT & BODY SHOP PROJECT RIPTION 1 DIV 22 PAINT & BODY SHOP	DESCRIPTIONORIGINAL BUDGETGUIDEWAYS0STATIONS0SUPPORT FACILITIES (Y & S)85,546,835SITEWORK\SPECIAL CONDITIONS35,932,000SYSTEMS25,784,616(10-50) CONSTRUCTION147,263,451RIGHT-OF-WAY99,910,000VEHICLES0PROFESSIONAL SERVICES35,601,095PROJECT CONTINGENCY13,659,732L296,434,278PAINT & BODY SHOP PROJECTORIGINAL BUDGETRIPTIONORIGINAL BUDGET1 DIV 22 PAINT & BODY SHOP11,000,000	DESCRIPTION         ORIGINAL BUDGET         CURREN PERIOD           GUIDEWAYS         0         0         0           STATIONS         0         0         0           SUPPORT FACILITIES (Y & S)         85,546,835         0         0           SITEWORK\SPECIAL CONDITIONS         35,932,000         0         0           SYSTEMS         25,784,616         0         0           (10-50) CONSTRUCTION         147,263,451         0         0           RIGHT-OF-WAY         99,910,000         0         0           VEHICLES         0         0         0           PROFESSIONAL SERVICES         35,601,095         0         0           PROJECT CONTINGENCY         13,659,732         0         0           PAINT & BODY SHOP PROJECT         ORIGINAL BUDGET         CURREN PERIOD         1           1 DIV 22 PAINT & BODY SHOP         11,000,000         0         0	DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET           GUIDEWAYS         0         0         0         0           STATIONS         0         0         0         0         0           SUPPORT FACILITIES (Y & S)         85,546,835         0         85,189,999           SITEWORK/SPECIAL CONDITIONS         35,932,000         0         38,273,000           SYSTEMS         25,784,616         0         32,991,000           (10-50) CONSTRUCTION         147,263,451         0         156,453,999           RIGHT-OF-WAY         99,910,000         0         0         0           VENCLES         0         0         0         0         0           PROFESSIONAL SERVICES         35,601,095         0         33,639,631         PROJECT CONTINGENCY         13,659,732         0         17,106,370           PAINT & BODY SHOP PROJECT         296,434,278         0         307,200,000         307,200,000           PRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         PERIOD         TO DATE           1 DIV 22 PAINT & BODY SHOP         11,000,000         0         11,000,000	DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMI PERIOD         TO DATE         PERIOD           GUIDEWAYS         0 <td< td=""><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS           GUIDEWAYS         0</td><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENI PERIOD           GUIDEWAYS         0         <td< td=""><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES           GUIDEWAYS         0</td><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES         CURRENT           GUIDEWAYS         0</td><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES         CURRENT FORECAST           GUIDEWAYS         0</td></td<></td></td<>	DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS           GUIDEWAYS         0	DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENI PERIOD           GUIDEWAYS         0 <td< td=""><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES           GUIDEWAYS         0</td><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES         CURRENT           GUIDEWAYS         0</td><td>DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES         CURRENT FORECAST           GUIDEWAYS         0</td></td<>	DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES           GUIDEWAYS         0	DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES         CURRENT           GUIDEWAYS         0	DESCRIPTION         ORIGINAL BUDGET         CURRENT BUDGET         COMMITMENTS         EXPENDITURES         CURRENT FORECAST           GUIDEWAYS         0

## **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 Life-of-Project (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 life of project 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 cost is \$318.2 million.

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

#### **Current Forecast:**

There were no changes this month.

#### **Commitments:**

The commitments are cumulative through January 2, 2016. Total commitments decreased by \$0.06 million for this period due to the following:

- SCC-40 Adjustment to HHS Construction Inc. commitments, by moving from 51% of project 860003 to the 49% of project 865512.
- SCC-80 Increase of commitments for agency and professional Services.

The \$276.6 million in commitments to date represents 87.0% of the current budget.

#### **Expenditures:**

The expenditures are cumulative through January 2, 2016. The total expenditures increased by \$4.9 million for this period due to the following:

- SCC-40 Hensel Phelps/Herzog billing for work performed.
- SSC-80 Increase for agency and Legal expenditure.

The \$109.3 million in expenditures to date represents 34.4% 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 Elemen	t 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.

#### **APPENDIX**

# LIST OF ACRONYMS

ACE ADA ADR AFC ALJ AMC APM ATC ATC ATC ATC ATSAC BAFO BID BIM BLS BMP BNSF BOC CADD CALTRANS	Advanced Conceptual Engineering Americans with Disabilities Act Alternative Dispute Resolution Approved for Construction Administrative Law Judge Airport Metro Connector Automated People Mover Alternative Technical Concept Automatic Train Control Automated Traffic Surveillance and Control Best and Final Offer Business Improvement Development Building Information Modeling Bureau of Labor Statistics Best Management Practices Burlington Northern Santa Fe Railway Company Bus Operations Control Computer Aided Drafting and Design California Department of Transportation
CARB CCTV	California Air Resources Control Board Closed Circuit Television
CD	Calendar Day
CD	Council District
CDRL	Contract Data Requirement List
CE	Categorical Exemption
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CIDH	Cast in Drilled Hole
CIP	Cast in Place
CLC	Community Leadership Council
CM	Construction Manager
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMB	Crushed Miscellaneous Base
CMU	Concrete Masonry Unit
CN	Change Notice
CO	Change Order
COI	City of Inglewood
COLA	City of Los Angles
CONAD	City of Los Angeles Contract Administration
CPM	Critical Path Method
CPUC	California Public Utilities Commission
CR	Camera Ready
CRMMP	Cultural Resources Monitoring and Mitigation Plan

### **APPENDIX**

CSM	Cutter Soil Mixing
CSP	Cost and Schedule Proposal
CSPP	Construction Safety Phasing Plan
CTB	Cement Treated Base
CTC	California Transportation Commission
CUD	Contract Unit Description
CWP	Construction Work Plan
DB	Design Build
DBB	Design Bid Build
DBE	Disadvantaged Business Enterprise
DDR	Design Deviation Report
DOT	Department of Transportation
DRB	Dispute Review Board
DWP	Department of Water and Power
	•
E&O	Error and Omission
EEO	Equal Employment Opportunity
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ENC	Equipment Noise Certification
EPA	Environmental Protection Agency
EPBM	Earth Pressure Balance Machine
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FAT	Factory Acceptance Testing
FCBC	Faith Central Bible Church
FD	Final Design
FEIR	
	Final Environmental Impact Report
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FFGA	Full Funding Grant Agreement
FIS	Financial Information System
FLSR	Fire Life Safety Report
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FSEIR	Final Supplemental Environmental Impact Report
FSEIS	Final Supplemental Environmental Impact Statement
FTA	Federal Transit Administration
FTE	Full Time Equivalent
GBR	Geotechnical Baseline Report
	•
GDR	Geotechnical Data Report
GDSR	Geotechnical Design Summary Report
GFE	Good Faith Effort
HDPE	High Density Polyethylene

#### APPENDIX

НММ	Hatch Mott MacDonald
HNTB	Howard, Needles, Tammen and Bergendoff
HPH	Hensel Phelps/Herzog Joint Venture
IFB	Invitation for Bid
IFC	Issued for Construction
IPMO	Integrated Project Management Office
ITF	Intermodal Transportation Facility
JHA	Job Hazard Analysis
JV	Joint Venture
LA	Los Angeles
LABOE	Los Angeles Bureau of Engineering
LABOS	Los Angeles Bureau of Sanitation
LABSL	Los Angeles Bureau of Street Lighting
LACO	Los Angeles County
LACFCD	Los Angeles County Flood Control District
LACMTA	Los Angeles County Metropolitan Transportation Authority
LACSD	Los Angeles Sanitation Department
LADOT	Los Angeles Department of Transportation
LADPW	Los Angeles Department of Public Works
LADWP	Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAPD	Los Angeles Police Department
LAUSD	Los Angeles Unified School District
LAWA	Los Angeles World Airports
LAX	Los Angeles International Airport
LNTP	Limited Notice To Proceed
LOA	Letter of Agreement
LONP	Letter Of No Prejudice
LOP	Life-of-Project
LPA	Locally Preferred Alternative
LRT	Light Rail Transit
LRTP	Long Range Transportation Plan
LRV	Light Rail Vehicle
MBE	Metro Builders and Engineers Group, Ltd
MCA	Master Cooperative Agreement
MGL	Metro Green Line
MIC	Microbiologically Influenced Corrosion Control System
MIS	Major Investment Study Mitigation Monitoring Reporting Blon
MMRP	Mitigation Monitoring Reporting Plan
MOA	Memorandum of Agreement
MOS MOT	Minimum Operating Segment Maintenance of Traffic
MOU	Memorandum of Understanding

PSRProject Study ReportPTMISEAPublic Transportation Modernization, Improvement and Service EnhancementQAQuality AssuranceQARQuality Assurance ReportQCQuality ControlQPSRQuarterly Project Status Report	MPS MPSR MSDS MSE MSF N/A NAVAIDS NCR NEPA NFPA NNC NOD NPDES NTE NTP OCC OCS OSHA OTS PA/VMS PDQM PE PEER PID PIP PLA PMH PMP PMH PMP PMMP PMMP PMMP PMMP PM	Master Program Schedule Monthly Project Status Report Material Safety Data Sheet Mechanically Stabilized Embankment Maintenance & Storage Facility Not Applicable Navigational Aid Systems Non Compliance Report National Environmental Protection Act National Fire Protection Association Notice of Noncompliance Notice of Noncompliance Notice of Oetermination National Pollution Discharge Elimination System Not to Exceed Notice To Proceed Operations Control Center Overhead Catenary System Occupational Health and Safety Administration Over the Shoulder Public Address/Visual Messaging Sign Project Design Quality Manual Preliminary Engineering Permit Engineering Evaluation Report Photo Ionization Detector Project Labor Agreement Project Labor Agreement Project Manager Park Mesa Heights Project Management Implementation Plan Project Management Oversight Consultant Project Management Oversight Consultant Project Oriented Discussions Project Oriented Discussions Project Quality Program Manual Project Report
PSRProject Study ReportPTMISEAPublic Transportation Modernization, Improvement and Service EnhancementQAQuality AssuranceQARQuality Assurance ReportQCQuality Control	PQPM	Project Quality Program Manual
PTMISEAPublic Transportation Modernization, Improvement and Service EnhancementQAQuality AssuranceQARQuality Assurance ReportQCQuality Control		· ·
QAQuality AssuranceQARQuality Assurance ReportQCQuality Control		
QARQuality Assurance ReportQCQuality Control		
QC Quality Control		
Aron Quarterly Project Status Report		
	UL2K	Quarterly Project Status Report

QTIB	Qualified Transit Improvement Bonds
RAMP	Real Estate Acquisition Management Plan
RCHAR	Rail Crossing Hazards Analysis Report
RCMP	Risk Assessment Management Plan
REAP	Rain Event Action Plans
RFC	Request for Change
RFI	Request for Information
RFMP	Rail Fleet Management Plan
RFP	Request For Proposals
RFQ	Request For Qualifications
RHA	Risk Hazard Analysis
RLPE	Red Light Photo Enforcement
ROC	Rail Operations Center
ROD	Record Of Decision
ROE	Right of Entry
ROM	Rough Order of Magnitude
ROW	Right-Of-Way
RPZ	Runway Protection Zone
RSD	Revenue Service Date
RSTP	Regional Surface Transportation Program
RTIP	Regional Transportation Improvement Program
RWQCB	Regional Water Quality Control Board
SAV	Stand Alone Validator
SCADA	Supervisory Control and Data Acquisition
SCAQMD	Southern California Air Quality Management District
SCC	Standard Cost Category
SCE	Southern California Edison
SCG	Southern California Gas Company
SCRRA	Southern California Regional Rail Authority
SHA	State Highway Account
SHPO	State Historic Preservation Office
SIT	System Integration Testing
SOE	Support of Excavation
SOP	Standard Operating Procedure
SOQ	Statement of Qualification
SOV	Schedule Of Value
SOW	Statement Of Work
SPAS	Specific Plan Amendment Study
SPP	Special Permitting Process
SSMP	Safety and Security Management Plan
STB	Surface Transportation Board
STIP STP	State Transportation Improvement Program Surface Transportation Program
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STV SWPP SWY TBD TBM TCC TCE	STV Group Storm Water Prevention Plan Southwestern Yard (Division 16) To Be Determined Tunnel Boring Machine Train Control/Communications Temporary Construction Easement
TCRP	Traffic Congestion Relief Program
TIA TIFIA	Time Impact Analysis Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TOD	Transit Oriented Development
TPSS	Traction Power Substation
TRACS	Transit Automatic Control System
TSC	Traffic Signal Conduit
TSL	Temporary Street Lighting
TSM	Transportation System Management
TVA	Threat Vulnerability Analysis
TVM	Ticket Vending Machine
UBC	Uniform Building Code
UFS	Universal Fare System
UG	Underground
UOM	Unit of Measure
USDOT	United States Department Of Transportation
UST VE	Underground Storage Tank Value Engineering
WBS	Work Breakdown Structure
WP	Work Package
wscc	Walsh/Shea Corridor Constructor
WTCP	Work Traffic Control Plan
YOE	Year of Expenditure