

# Crenshaw/LAX Transit Project



Metro<sup>®</sup>

# **CRENSHAW/LAX TRANSIT PROJECT**

## **MONTHLY PROJECT STATUS REPORT**

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

**JANUARY 2016**


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**PROJECT SUMMARY**

<b>LOCATION:</b> Crenshaw Blvd at Exposition to Green Line <b>DESIGN/CONSULTANT:</b> Hatch Mott				<b>CONSTRUCTION MANAGEMENT CONSULTANT:</b> Stantec <b>CONTRACTOR:</b> Walsh-Shea Corridor Constructors (WSCC)			
<b>PROJECT PHOTO:</b> Tunnel ventilation fabrication at Bellanca Yard				<b>WORK COMPLETED PAST MONTH:</b>			
				<ul style="list-style-type: none"> <li>o Design-builder continues final design.</li> <li>o Commenced invert slab for UG#1 near LAX airport runways.</li> <li>o Continued superstructure construction for Century bridge.</li> <li>o Continued offsite tunnel segment production.</li> <li>o Continued CIDH pile installation for bridge over I-405.</li> <li>o Continued TBM assembly at the Bellanca Ave yard.</li> <li>o Continued superstructure construction for the La Brea bridge.</li> <li>o Continued pot holing at Park Mesa area.</li> <li>o Continued soil excavation at Leimert Park and MLK Stations.</li> <li>o Continued invert slab placement at Expo/Crenshaw Station.</li> <li>o Continued real estate acquisitions with emphasis on remaining partial-takes and temporary construction easements.</li> <li>o Southwestern Yard contractor continues final design.</li> </ul>			
<b>EXPENDITURE STATUS (\$ In Millions)</b>				<b>SCHEDULE ASSESSMENT</b>			
ACTIVITIES	CURRENT BUDGET	EXPENDED AMOUNT	PERCENT EXPENDED	MAJOR SCHEDULE ACTIVITIES	PRIOR PLAN	CURRENT PLAN	VARIANCE WEEKS
<b>DESIGN</b>	\$ 136.7	\$ 118.0	86.3%	<b>Environmental</b>			
				FEIS/FEIR	Sep-11	Sep-11	Complete
				Record of Decision	Dec-11	Dec-11	Complete
<b>RIGHT-OF-WAY</b>	\$ 127.4	\$ 111.2	87.3%	<b>Design</b>			
				Preliminary Engineering	Nov-11	Nov-11	Complete
				Final Design	Sep-15	Jul-16	10.4 months behind
<b>CONSTRUCTION</b>	\$ 1,353.1	\$ 481.6	35.6%	<b>Right-of-Way</b>			
				Full-take parcels available	Jan-15	Jan-15	Complete
				Part-take and TCE parcels	Sep-15	Jul-16	9.5 months behind
<b>OTHER</b>	\$ 440.8	\$ 132.9	30.1%	<b>Construction</b>			
				D-B Notice to Proceed	Sep-13	Sep-13	Complete
				D-B Substantial Complete	Oct-18	Mar-19	5 months behind
				Revenue Service Date	Oct-19	Oct-19	On schedule*
<b>TOTAL</b>	\$ 2,058.0	\$ 843.6	41.0%	The D-B Substantial Complete prior plan was modified by a 35-day concurrent delay contract modification in March 2015.  *Note: Revenue Service Date includes a reduction in schedule contingency.			
Note: cost expended as of January 30, 2016.							
<b>AREAS OF CONCERN</b>				<ul style="list-style-type: none"> <li>o Design-builder's ability to mitigate schedule delays.</li> <li>o Timely review of WSCC's design submittals by City of Los Angeles.</li> <li>o 96th street station accommodations cost and schedule impacts.</li> </ul>			
<b>ROW ACQUISITION</b>	PLAN	ACQUIRED	REMAINING	<b>CRITICAL ACTIVITIES / 3 MONTH LOOK AHEAD</b>			
FULL TAKES	37	35	2	<ul style="list-style-type: none"> <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 Commence concrete placement for walls/roof at UG#1.</li> <li>o Southwestern Yard design-builder to commence construction in April.</li> </ul>			
PARTIAL TAKES	27	20	7				
TEMPORARY EASEMENTS	15	10	5				
<b>TOTAL PARCELS</b>	79	65	14				
Note: additional parcels have been added for a new total of 79.							

## **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.

**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 and anticipates starting construction in April 2016.*

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

*There are a total of 79 parcels which is an increase since last month. There are 37 full takes, 27 partial takes and 10 temporary construction easements (TCE's). There have been 65 parcels acquired through January 2016. Thirty-five full takes, 20 part takes and 10 TCE's have been provided to the design-builder WSCC. Metro added two full takes and five part takes/TCE's required for the construction of the Project.*

### **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 January 2016 are \$1,801.5 million or 87.5% of the Current Budget. The project expenditures thru January 2016 are \$843.6 million or 41.01% 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 administrative staffing. The expenditures to date also include the Southwestern Yard expenditures that are part of the 49% cost allocation share that the Project is responsible for paying for. The 51% cost allocation is reported within another internal project number and the total costs for the Southwestern Yard project is included in the Appendix.*

*This month the project schedule reflects no change in project status. Metro is reporting a projected 151 calendar day delay to the design-builder's contract substantial completion milestone (2019).*



## **MANAGEMENT ISSUES**

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

**Status/Action** 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:** *(closed) Relocations of utilities by outside third parties required to be performed in advance of the main Crenshaw/LAX Design Build Contractor's work.*

**Status/Action** *Metro completed the remaining "known" utility relocation in January 2016.*

## **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.

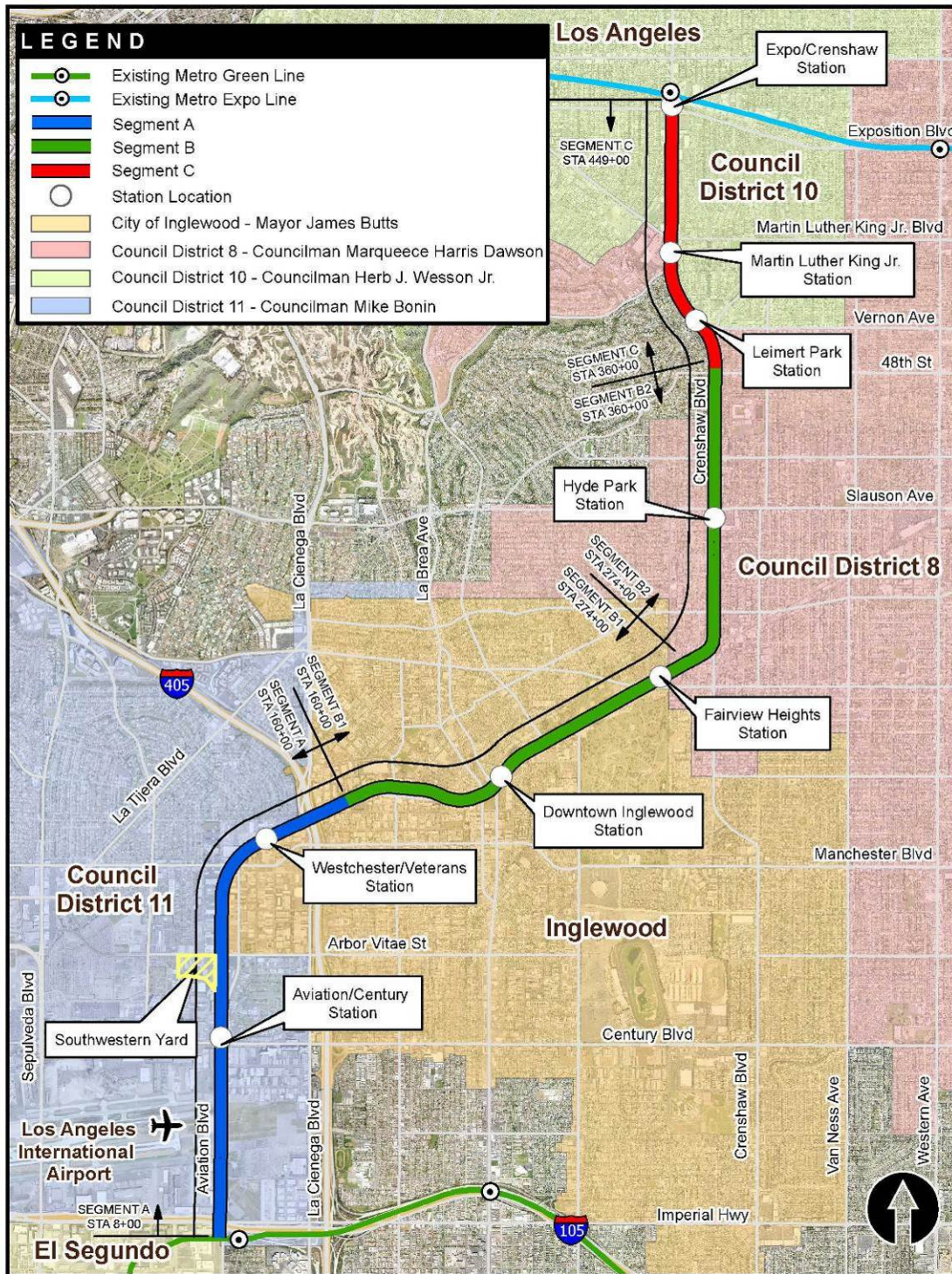
**Concern No. 6:** Design-builders construction schedule

**Status/Action** *This month the project schedule reflects no change in project status. 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.

**Status/Action** In May 2015, the Metro Board approved Design Option 3 implementing changes required to the design-builder's design to accommodate the ultimate track configuration required for the future Airport Metro Connector Transit Station. 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**

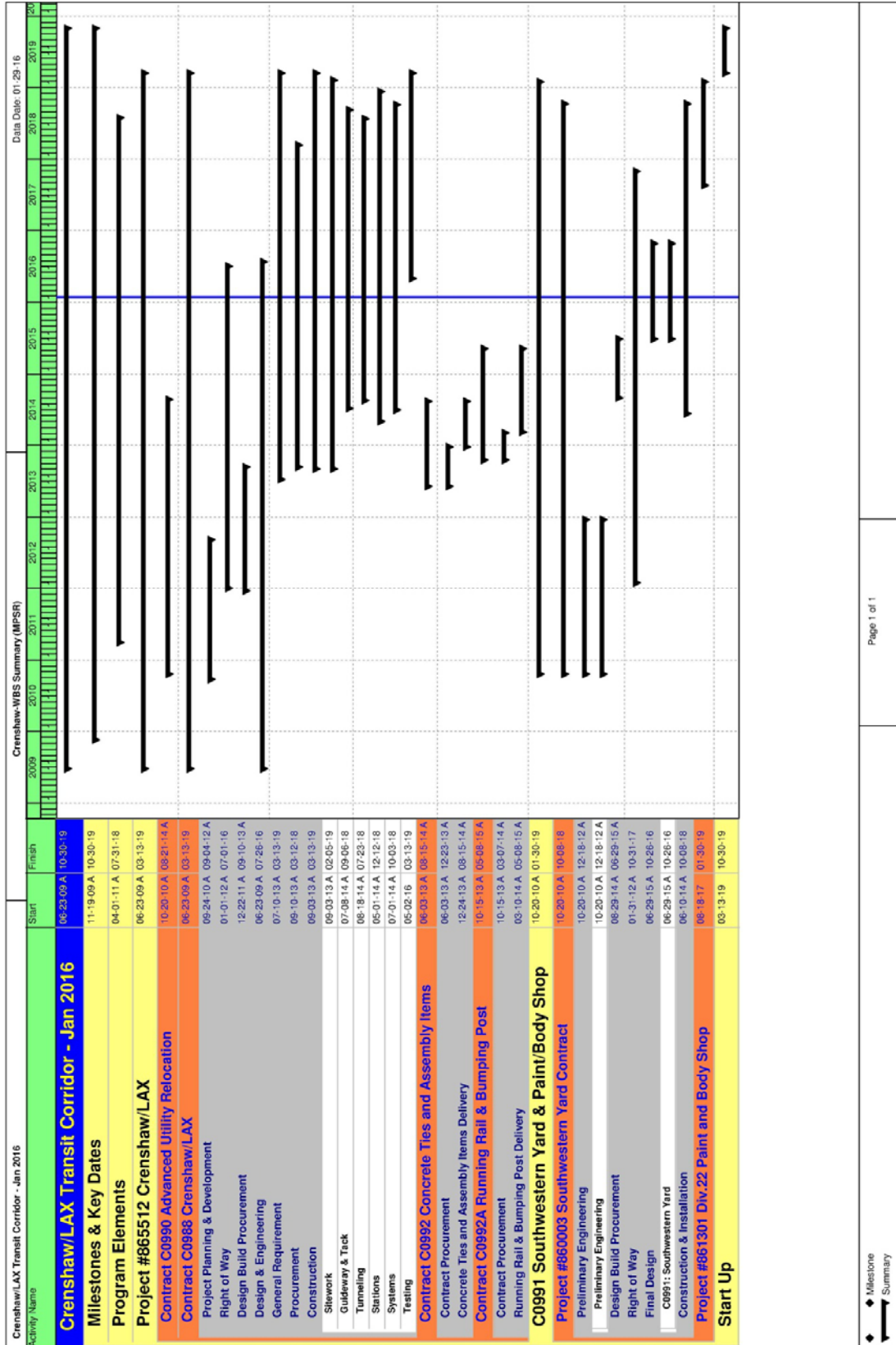
The commencement of pre-revenue operations will be determined by Metro Operations. The design-builder will have completed Phase I systems integration testing (SIT) and Metro will have subsequently completed and passed Phase II SIT. Metro may conduct some Phase II SIT efforts concurrently with the start 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	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
Contract C0988 Start Invert Slab - UG #1	01/08/16A						
Contract C0988 Start TBM Muck Handling System	01/11/16A						
Contract C0988 Start MSE Wall - Manchester Bridge	01/19/16A						
Contract C0988 Start Station Platform - Florence / Hindry	01/19/16A						
Contract C0988 TPSS-10 Permanent Power Drop (Power for TBM)	01/23/16A						
Contract C0988 Start MSE Wall - I-405 Bridge	02/11/16						
Contract C0988 Start Platform Level Lower Wall - Expo	02/04/16						
Contract C0988 Start Station Platform - Florence / West	02/16/16						
Contract C0988 Complete & Submit Design - Seg B	02/23/16						
Contract C0988 Expo Station Ready for TBM Machine	02/25/16						
Contract C0988 Complete Excavation & Mud Slab - MLK	02/29/16						
Contract C0991 Demo Early Access Date	03/08/16			△			
Contract C0988 Complete Excavation & Mud Slab - Vernon	03/09/16						
Contract C0988 Complete Superstructure - La Brea Bridge	03/24/16						
Contract C0988 Complete & Submit Design - 96th Street	03/26/16						
Contract C0988 Complete Assemble EPBM	03/28/16						
Contract C0988 Start Excavation - UG #3	03/29/16						
Contract C0988 Start Roadway Construction - Park Mesa	03/29/16						
Contract C0988 TBM SB Launch @ Expo Station	03/31/16						
Contract C0988 Start MSE Wall - 111th St Bridge	04/04/16						
Contract C0988 Complete Excavation - UG #1	04/04/16						
Contract C0988 Start Base Invert Slab - MLK	04/13/16						
Contract C0988 Start Platform - Aviation / Century	05/04/16						
Contract C0988 Complete 111th St Bridge Superstructure	05/06/16						
Contract C0988 Complete Excavation - UG #4 U Section	05/18/16						
Contract C0988 Complete & Submit Design - Seg A	05/25/16						
Contract C0988 Complete Platform Level Lower Wall - Expo	05/26/16						
Contract C0988 Start Platform Level Walls - MLK	06/01/16						
Contract C0988 TBM Arrives at MLK Station SB Tunnel	06/14/16						
Contract C0988 Complete Retaining Wall RW3 - Aviation / Century	06/27/16						
Contract C0988 Start Ballasted Track - Segment A	06/28/16						

MTA Staff     
 MTA Board Action     
 Walsh     
 Other  
 "A" following date is actual and completed

PROJECT SUMMARY SCHEDULE

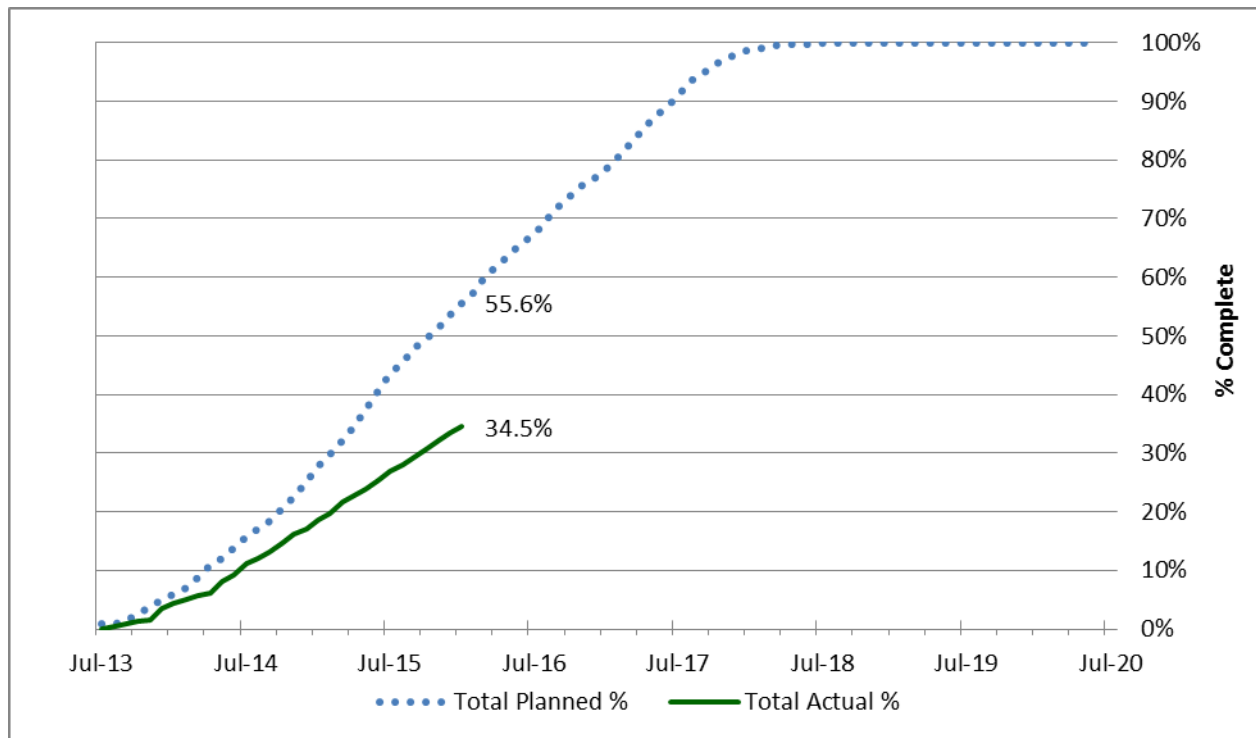


**SCHEDULE MEASUREMENTS**

	Status	Change from Last Period	Comment
Current Revenue Service:	10/30/2019	None	
Forecast Revenue Service:	10/30/2019	None	
TIFIA Revenue Service:	10/30/2019	None	
<b>Final Design Progress:</b>			
Contract C0988	96.9%	0.2%	Behind Schedule
Contract C0990	100%	None	Design Completed
Contract C0991	25.6%	5.4%	Baseline Schedule Approved
Contract C0992	100%	None	Design Completed
Contract C0992A	100%	None	Design Completed
<b>Construction Contracts Progress:</b>			
Contract C0988	27.3%	1.1%	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 34.5% versus a planned progress of 55.6% through January 2016. The progress curves represent a composite percentage for the physical progress of work performed to complete the project's construction contracts, including the major design-build (C0988), advance utility relocation (C0990), and two equipment procurement contracts-concrete ties (C0992) and running rail (C0992A). The 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 a future 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**

WSSC, 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	Dec-15	Jan-16	Monthly Variance
Submit Final Design Details for TBM	01/03/14	04/01/15A	04/01/15A	
Fabricate & Deliver TBM	09/22/14	11/21/14A	11/21/14A	
Procure & Deliver TBM Rolling Stock & Accessories	06/23/14	03/02/15A	03/02/15A	
TBM SB Tunnel Launch at Expo	04/28/15	03/31/16	03/31/16	0
TBM SB Break through at Vernon	09/17/15	08/01/16	08/01/16	0
TBM NB Tunnel Launch at Expo	10/29/15	09/14/16	09/14/16	0
TBM NB Break through at Vernon	03/21/16	01/26/17	01/26/17	0

**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**

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

## **CRITICAL PATH NARRATIVE**

**Critical Path:**

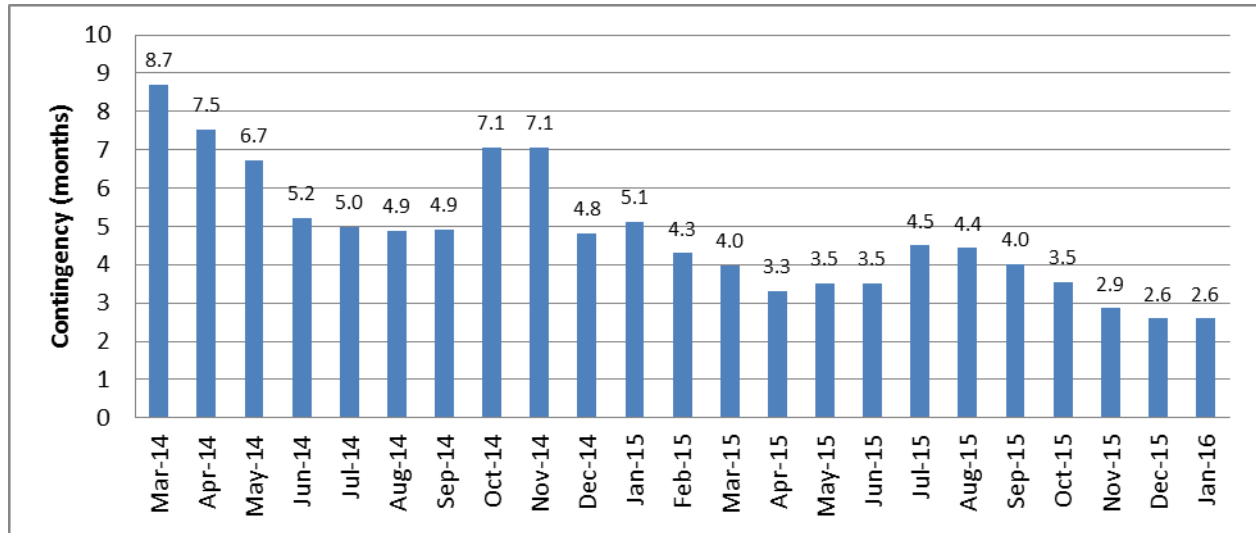
The longest path to project substantial completion begins with final design of the Design/Build Contract #C0988 Crenshaw/LAX Transit Corridor.

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

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

The current critical path indicates Milestone 1 - Contract Substantial Completion date is 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.

There is no change in the forecast of the available project contingency this month.

The total contingency remaining is 2.6 months.

**PROJECT COST STATUS**

UNITS IN DOLLARS

SCC CODE	DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		CURRENT BUDGET/ FORECAST VARIANCE
			PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
10	GUIDEWAYS	471,335,000	-	452,500,001	50,000	443,245,043	7,496,260	115,672,186	-	450,354,375	(2,145,626)
20	STATIONS	153,906,000	-	316,050,000	-	301,776,720	2,037,651	120,282,539	-	315,050,000	(1,000,000)
30	SUPPORT FACILITIES SOUTHWEST YARD	66,673,000	-	73,245,544	339,407	71,053,330	(41,276)	8,594,951	-	71,164,000	(2,081,544)
40	SITWORK/SPECIAL CONDITIONS	235,576,000	-	348,565,999	1,760,141	363,019,502	2,998,678	235,240,601	1,275,698	374,541,989	25,975,990
50	SYSTEMS	125,132,000	-	169,311,000	-	152,322,830	17,863	1,833,947	-	169,436,000	125,000
<b>CONSTRUCTION SUBTOTAL (10-50)</b>		<b>1,052,622,000</b>	<b>-</b>	<b>1,359,672,544</b>	<b>2,149,547</b>	<b>1,331,417,424</b>	<b>12,509,176</b>	<b>481,624,225</b>	<b>1,275,698</b>	<b>1,380,546,364</b>	<b>20,873,820</b>
60	RIGHT-OF-WAY	132,294,000	-	127,400,000	3,400	113,578,644	179,078	111,161,895	-	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	3,060,769	248,912,907	6,580,351	213,836,250	45,450	339,033,832	38,940,654
<b>SUBTOTAL (10-80)</b>		<b>1,545,843,000</b>	<b>-</b>	<b>1,869,265,722</b>	<b>5,213,716</b>	<b>1,775,959,876</b>	<b>19,268,605</b>	<b>818,074,791</b>	<b>1,321,148</b>	<b>1,929,170,196</b>	<b>59,904,474</b>
90	UNALLOCATED CONTINGENCY	177,157,000	-	162,734,278	-	-	-	-	(1,321,148)	102,829,804	(59,904,474)
100	FINANCE CHARGES	-	-	-	-	-	-	-	-	-	-
<b>TOTAL PROJECT 865512 (10-100)</b>		<b>1,723,000,000</b>	<b>-</b>	<b>2,032,000,000</b>	<b>5,213,716</b>	<b>1,775,959,876</b>	<b>19,268,605</b>	<b>818,074,791</b>	<b>-</b>	<b>2,032,000,000</b>	<b>-</b>
ENVIRONMENTAL/PLANNING - 405512		5,526,150	-	5,526,150	-	5,526,150	-	5,526,150	-	5,526,150	-
ENVIRONMENTAL/PLANNING - 465512		20,473,850	-	20,473,850	-	20,023,237	-	20,023,237	-	20,473,850	-
<b>TOTAL PROJECTS 405512 &amp; 465512 (ENV / PLAN'G)</b>		<b>26,000,000</b>	<b>-</b>	<b>26,000,000</b>	<b>-</b>	<b>25,549,388</b>	<b>-</b>	<b>25,549,388</b>	<b>-</b>	<b>26,000,000</b>	<b>-</b>
<b>TOTAL PROJECTS 405512, 465512 &amp; 865512</b>		<b>1,749,000,000</b>	<b>-</b>	<b>2,058,000,000</b>	<b>5,213,716</b>	<b>1,801,509,264</b>	<b>19,268,605</b>	<b>843,624,178</b>	<b>-</b>	<b>2,058,000,000</b>	<b>-</b>

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

**PROJECT COST ANALYSIS**

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

**Original Budget:**

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

**Current Budget:**

There have been two increases in the LOP to date:

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

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

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

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

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

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

### **Current Forecast:**

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

### **Commitments:**

The commitments are cumulative through January 30, 2016. The total commitments increased by \$5.2 million this period primarily due to the following:

- SCC-30 (Southwestern Yard) has increased by \$0.3 million primarily for costs associated with third party utility relocation scope of work with Los Angeles Department of Water and Power.
- SCC-40 (Sitework and Special Conditions) has increased by \$1.8 million due to executed modifications associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor, third party utility relocation scope of work with The Gas Company and Los Angeles Department of Water and Power.
- SCC-80 (Professional Services) has increased of \$3.1 million due to executed contract modifications with Engineering and Design Contract E0117 for Southwest Yard design services during construction, third party coordination by Los Angeles City Departments, project management assistance support services with Hill International, printing and community relations support services. The total commitment of \$248.9 million includes \$19.8 million for the Southwestern Yard 49% allocation.

The \$1,801.5 million in commitments to date represents 87.5% of the current budget.

### **Expenditures:**

The expenditures are cumulative through January 30, 2016. The total expenditures increased by \$19.3 million this period due to the following:

- SCC-10 (Guideways) has increased by \$7.5 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-20 (Stations, Stops, Terminals, Intermodal) has increased by \$2.0 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-40 (Sitework and Special Conditions) has increased by \$3.0 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor, third

**PROJECT COST ANALYSIS (Continued)**

party utility relocation scope of work with Tesoro Logistics LLP and Los Angeles Department of Water and Power.

- SCC-60 (Right-Of-Way) has increased \$0.2 million for costs associated with real estate acquisition. The total expenditure of \$111.2 million includes \$52.5 million for the Southwestern Yard 49% allocation.
- SCC-80 (Professional Services) has increased by \$6.6 million for costs associated with Engineering and Design Contract E0117, Contract C0988 Crenshaw/LAX Transit Corridor, Contract C0991 Division 16: Southwestern Yard (Design/Build), Metro project administration, IPMO field office lease and utilities, construction management support services, third party coordination by Los Angeles City Departments, project management assistance support, community relation and environmental consultant services. The total expenditure of \$213.8 million includes \$8.1 million for the Southwestern Yard 49% allocation.

The \$843.6 million in expenditures to date represents 41.0% of the current budget.

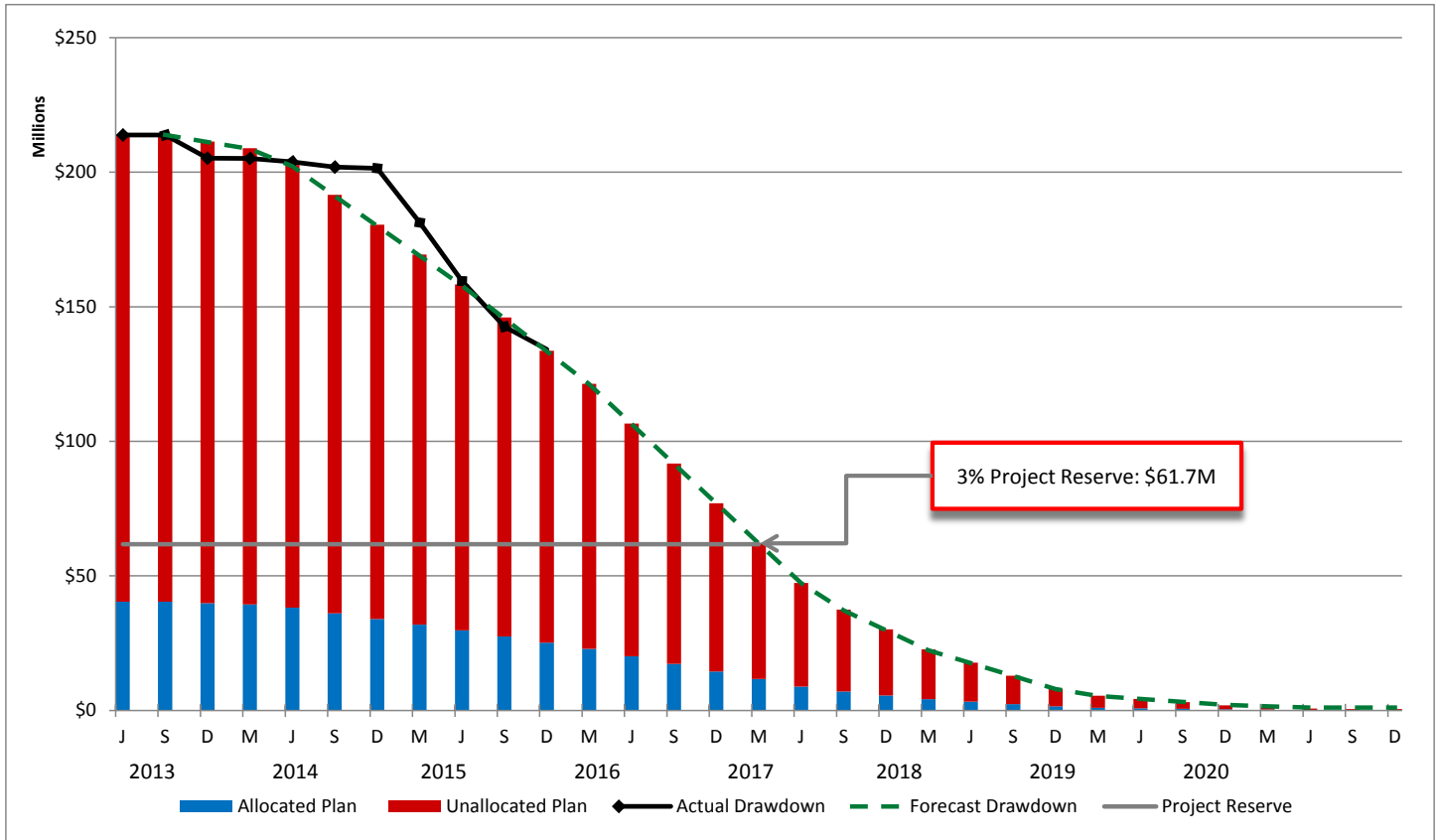
**Non-Crenshaw/LAX Transit Project Funded Scope of Work**

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

C0988 NON-CRENSHAW/LAX TRANSIT PROJECT FUNDED SCOPE OF WORK										
DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT		FORECAST VARIANCE
		PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
405556 SYSTEMWIDE TRANSIT PLANNING	139,236	-	139,236	50,000	50,000	-	-	-	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	800,000	1,860,920	-	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	-
<b>TOTAL</b>	<b>4,390,998</b>	<b>-</b>	<b>6,058,264</b>	<b>850,000</b>	<b>4,924,791</b>	<b>-</b>	<b>1,408,911</b>	<b>-</b>	<b>7,197,344</b>	<b>1,139,080</b>



## PROJECT COST CONTINGENCY DRAWDOWN



Through 30-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 \$81,217,838 or 38.0% for both allocated and unallocated contingency through January 2016.

- The unallocated contingency decreased by \$1,321,148 due to executed contract modifications for the design-build contract C0988 Crenshaw/LAX Transit Corridor and executed Fiscal Year 2016 annual work order with The Gas Company.
- Allocated contingency was decreased by \$202,272 due to executed contract modifications for the design-build contract C0988 Crenshaw/LAX Transit Corridor.

<b>PROJECT COST CONTINGENCY (through 30-Jan-2016)</b>					
<b>UNITS IN DOLLARS</b>					
	Original Contingency (Budget)	Previous Period	Current Period	To-Date	Remaining Contingency (Forecast)
Unallocated Contingency	173,500,000	(69,349,048)	(1,321,148)	(70,670,196)	102,829,804
Allocated Contingency	40,366,792	(10,345,369)	(202,272)	(10,547,641)	29,819,151
<b>Total Contingency</b>	<b>213,866,792</b>	<b>(79,694,418)</b>	<b>(1,523,420)</b>	<b>(81,217,838)</b>	<b>132,648,954</b>

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

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

(Reported Data as of December 15, 2015)

- DBE Goal – Design 20%
- Current DBE Commitment \$20,232,929 (20.59%)
- Current DBE Participation \$23,402,646 (25.40%)
- 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 (9.61%)
- Current DBE Participation \$92,838,565 (24.81%)
- Sixty-three (63) Construction subcontractors have been identified to-date.

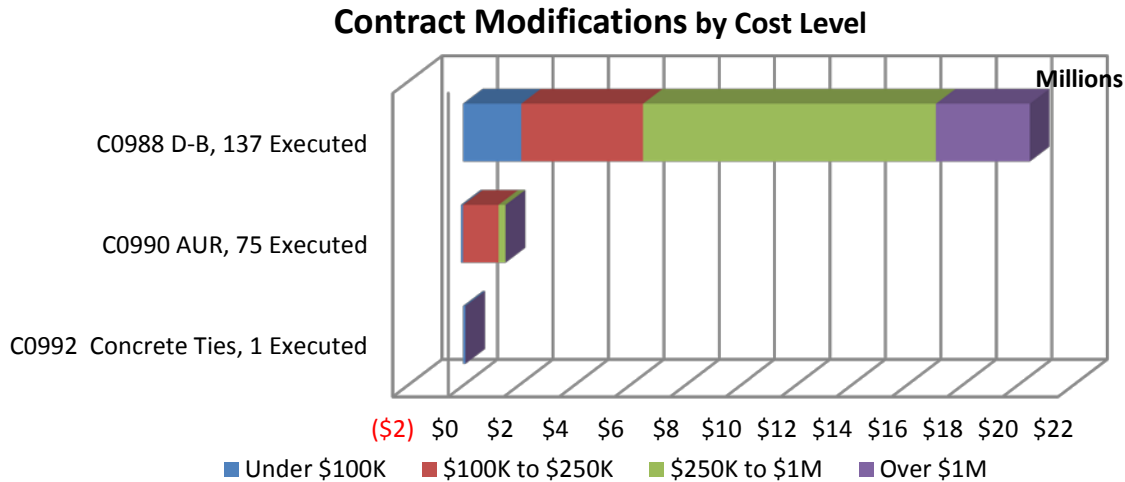
## **PROJECT LABOR AGREEMENTS (PLA) STATUS**

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

(Reported Data as of December 26, 2015)

- Targeted Worker Goal – 40.00%
- Targeted Worker Current Participation - 59.34%
  
- Apprentice Worker Goal - 20.00%
- Apprentice Worker Current Participation - 17.68%
  
- Disadvantaged Worker Goal - 10.00%
- Disadvantaged Worker Current Participation 11.54%

**SUMMARY OF CONTRACT MODIFICATIONS**



	C0988	C0990	C0992
	137 Executed	75 Executed	1 Executed
Under \$100K	\$ 2,097,932	\$ (70,251)	\$ 81,738
\$100k to \$250K	\$ 4,392,663	\$ 1,280,184	\$ -
\$250K to \$1M	\$ 10,572,914	\$ 251,864	\$ -
Over \$1M	\$ 3,386,736	\$ -	\$ -
<b>Total</b>	<b>\$ 20,450,245</b>	<b>\$ 1,461,797</b>	<b>\$ 81,738</b>
<b>% of Contract</b>	<b>1.61%</b>	<b>18.68%</b>	<b>3.78%</b>

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

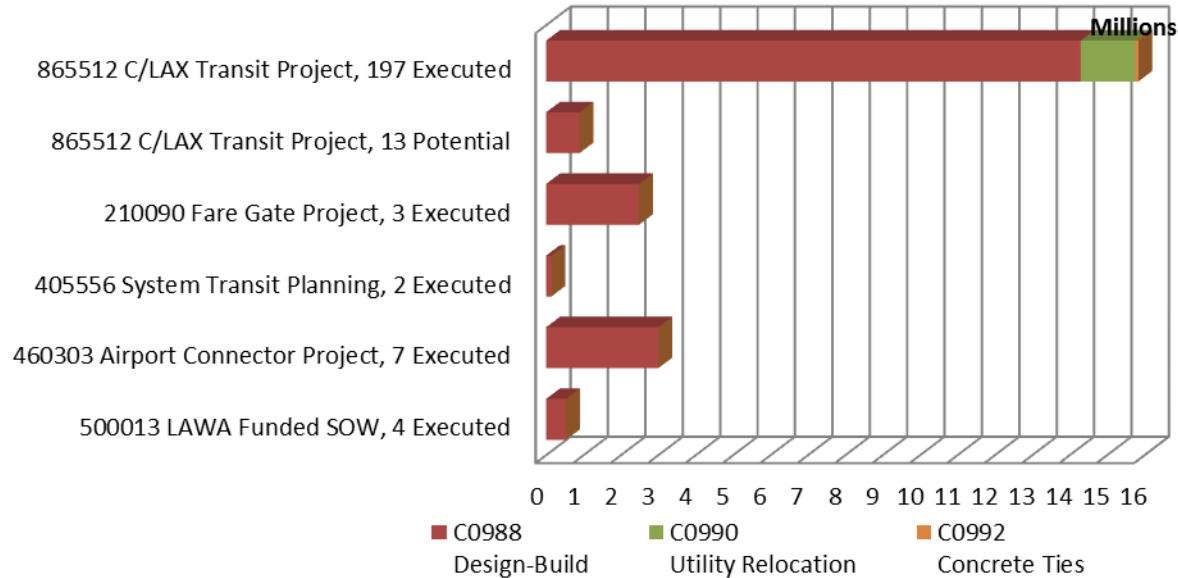
One hundred and thirty seven (137) changes with a total value of \$20.45 million have been executed since execution of Contract C0988. There are additional thirteen (13) changes with a total value of \$0.892 million are pending the administrative approval process.

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**

**Contract Modifications by Metro Internal Project Number**



	<b>865512</b>	<b>210090</b>	<b>405556</b>	<b>460303</b>	<b>500013</b>
	<b>Executed</b>	<b>Executed</b>	<b>Executed</b>	<b>Executed</b>	<b>Executed</b>
<b>C0988</b>	121	3	2	7	4
<b>C0998 \$</b>	\$ 14,295,492	\$ 2,482,746	\$ 139,236	\$ 3,001,555	\$ 531,216
<b>C0990</b>	75	0	0	0	0
<b>C0990 \$</b>	\$ 1,461,797	\$ -	\$ -	\$ -	\$ -
<b>C0992</b>	1	0	0	0	0
<b>C0992 \$</b>	\$ 81,738	\$ -	\$ -	\$ -	\$ -
<b>Total</b>	197	3	2	7	4
<b>Total \$</b>	\$ 15,839,027	\$ 2,482,746	\$ 139,236	\$ 3,001,555	\$ 531,216

One hundred and ninety seven (197) changes with a total value of \$15.84 million have been executed for Project 865512 Crenshaw/LAX Transit Project. There are additional thirteen (13) changes with a total value of \$0.892 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.

Seven (7) changes with a value of \$3.00 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)	(B)	(C)	(D)	(D/B)	(E)	(E/B)	(F)	(F/B)
	ORIGINAL BUDGET	TOTAL FUNDS ANTICIPATED	TOTAL FUNDS AVAILABLE	COMMITMENTS \$	%	EXPENDITURES \$	%	BILLED to \$	FUNDING SOURCE %
FEDERAL - CMAQ	68.2	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%	8.5	99%	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%	298.4	55%	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	7%	8.0	4%	8.0	4%
PROP C 25% HIGHWAY	148.9	189.5	3.7	117.6	62%	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%
<b>TOTAL</b>	<b>1,749.0</b>	<b>2,058.0</b>	<b>1,187.3</b>	<b>1,801.5</b>	<b>87.5%</b>	<b>843.6</b>	<b>41.0%</b>	<b>746.0</b>	<b>36.3%</b>

NOTE: Expenditures are cumulative through January 2016.

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 March 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.

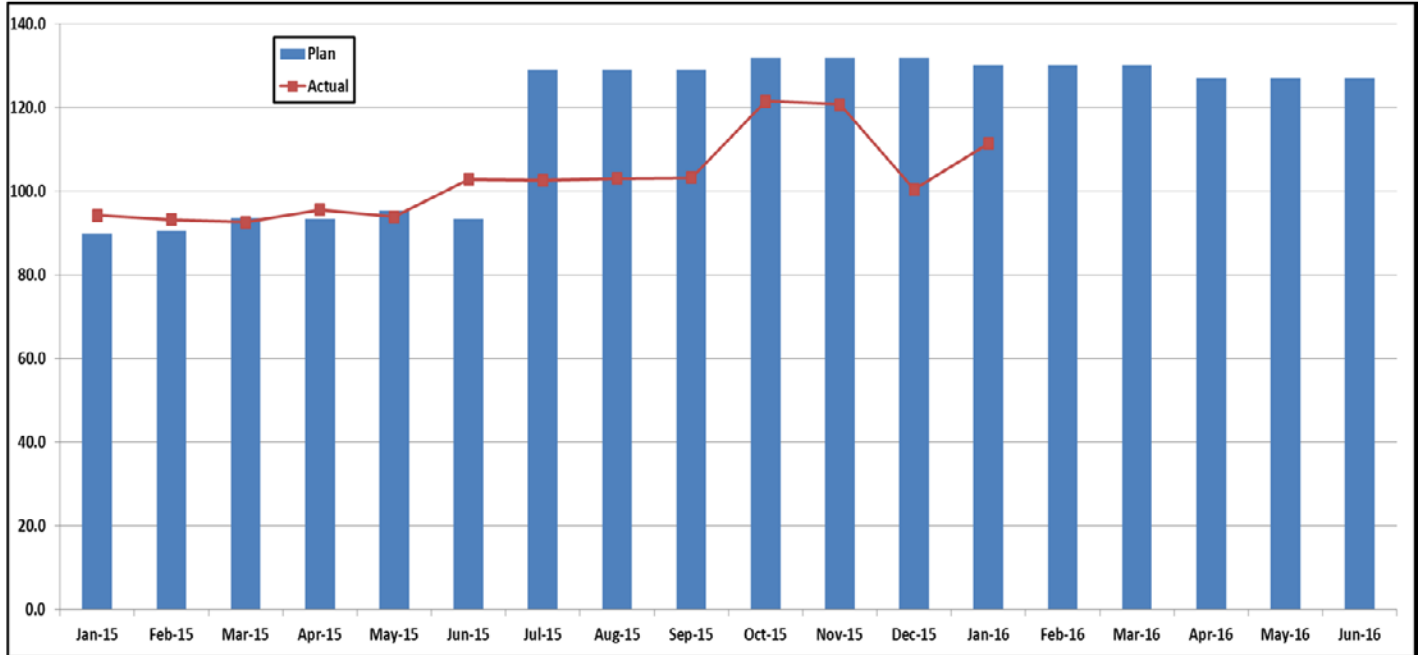
**OTHER FUNDS:** City of LA: Based on the funding agreement between Metro and the City of LA. \$13M is available for drawdown through FY2016.

**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 January 2016.

## TOTAL PROJECT STAFFING

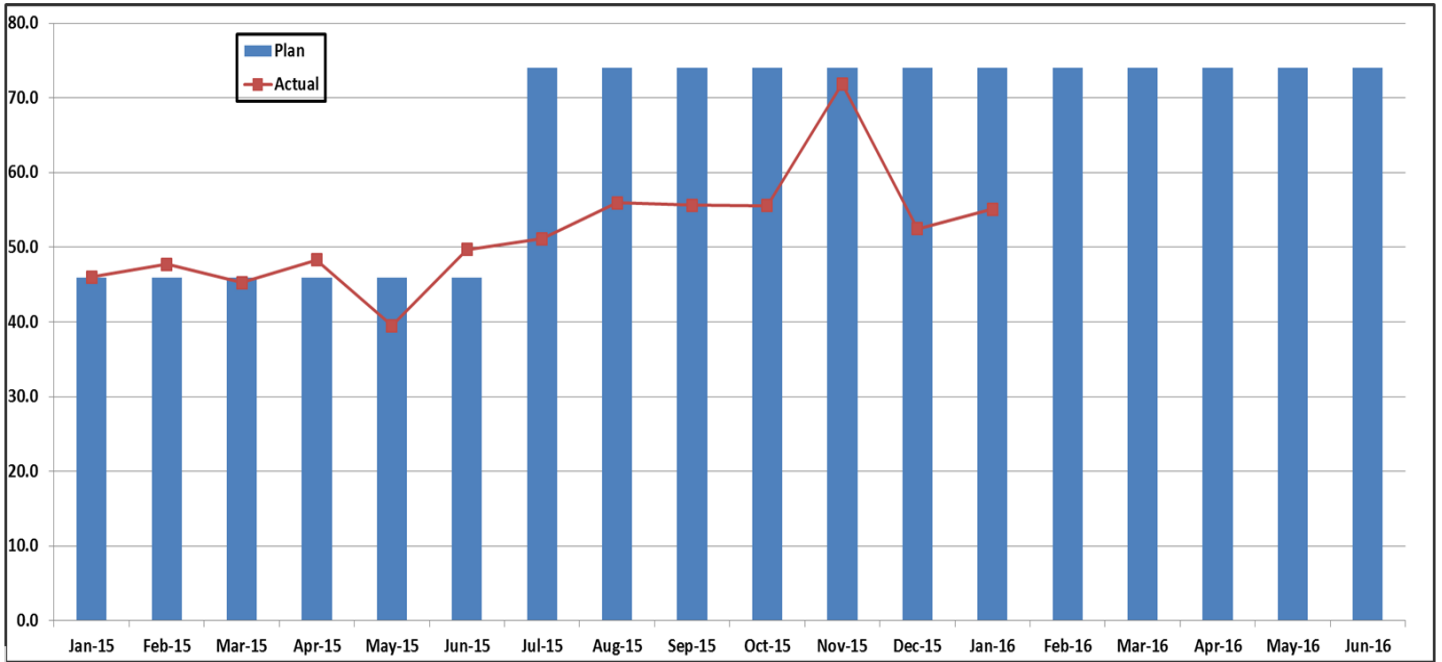
With the start of the 2016 fiscal year in July; the staffing for the Southwestern Yard Project is also included along with the Crenshaw/LAX Project for Metro and the Construction Management and Engineering Services consultants.

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 in staffing requirements.

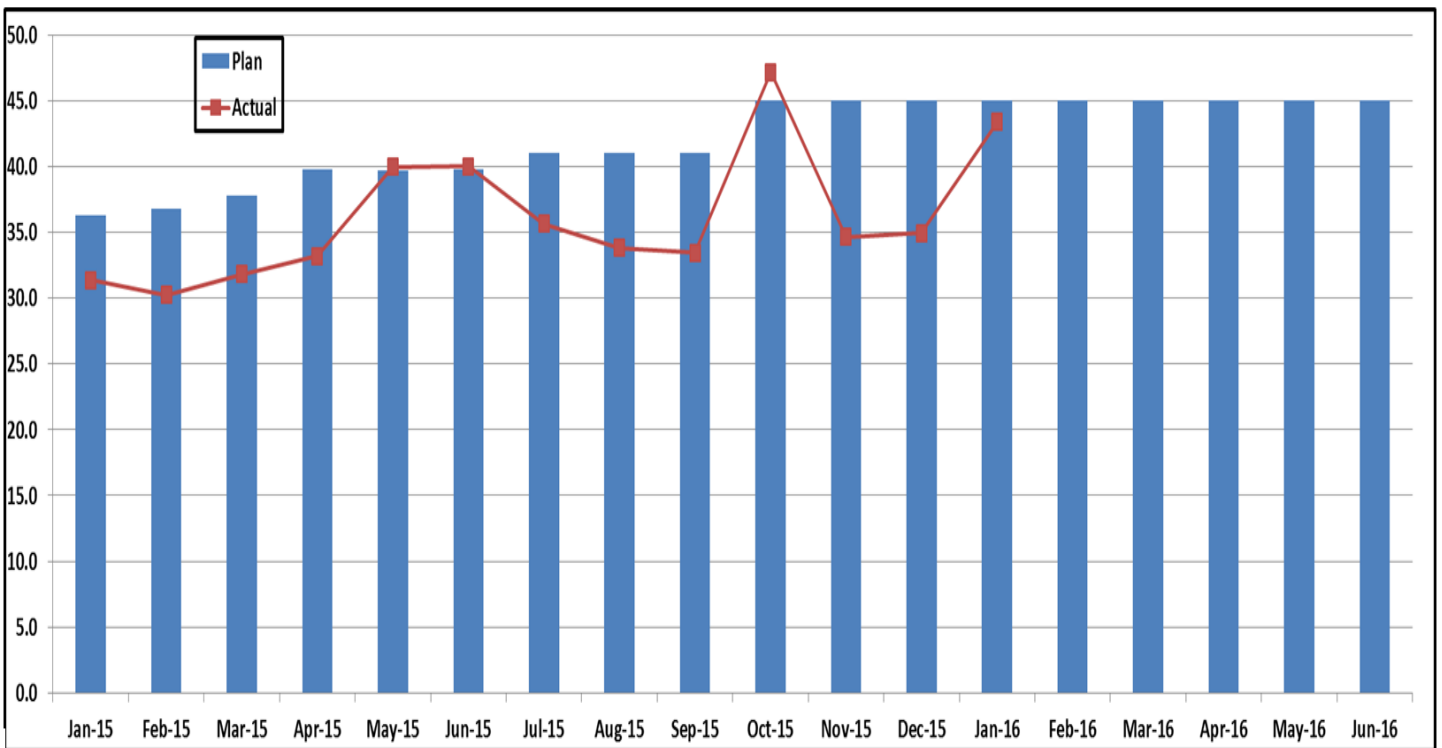
The next three charts show actual staffing versus planned staffing for the three major project participants.



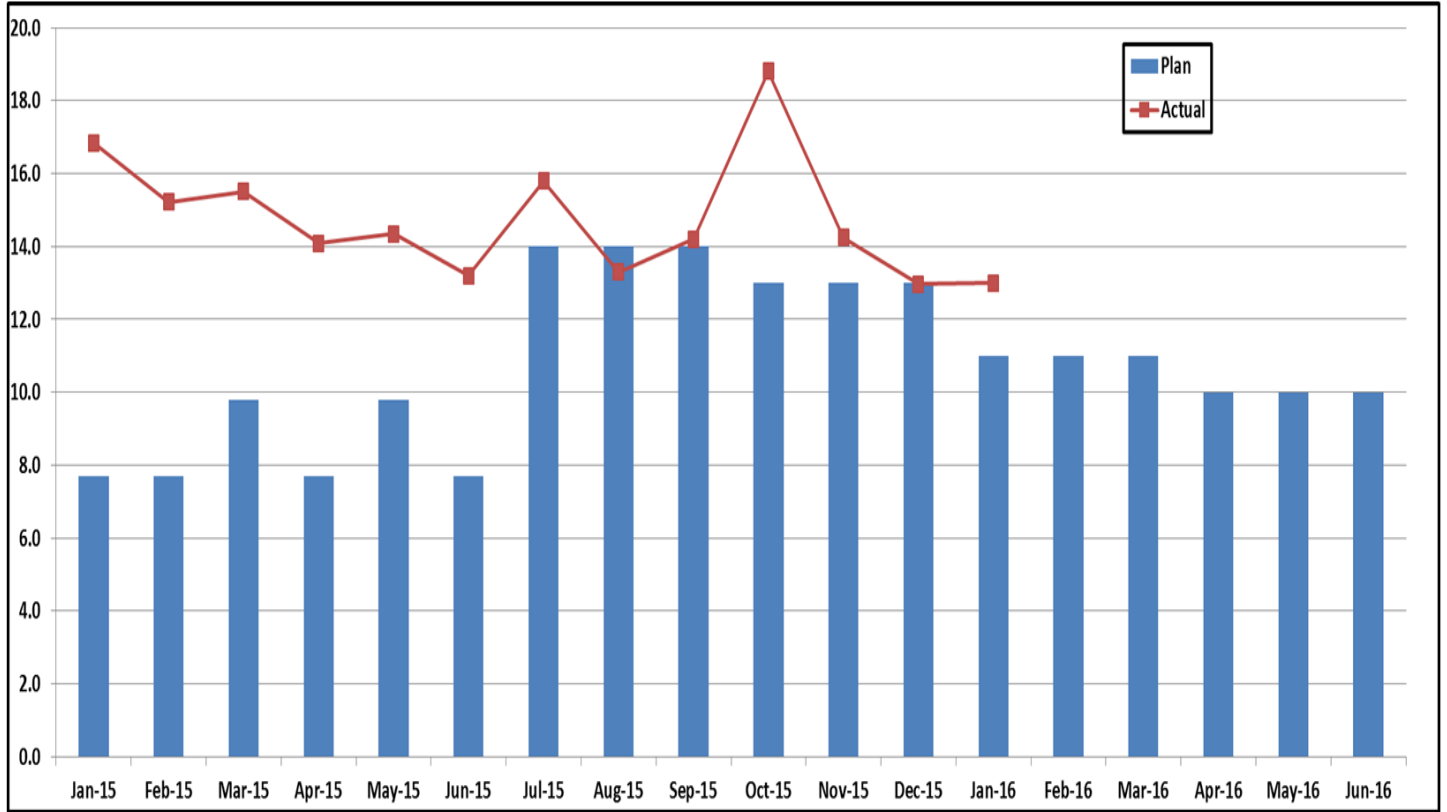
**STAFFING STATUS (Continued)  
METRO STAFFING – FTES**



**CONSTRUCTION MANAGEMENT  
SUPPORT SERVICES CONSULTANT – FTES**



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



**REAL ESTATE STATUS**

Contract No.	Number of Parcels	Certified	Decertified	Appraisals Complete	Offers Made	Agreements Signed	Condemnations Filed	Relocations Complete	Parcels Available to WSCC
<b>C0988 C/LAX Transit Corridor (D-B):</b>									
<i>Crenshaw Subdivision</i>									
Full Takes	12	12		12	12	7	5	12	12
Part Takes (PT or SE)	10	9	1	9	9	2	6		9
TCE	10	10		10	10	1	8		9
<b>Subtotal Parcels</b>	<b>32</b>	<b>31</b>	<b>1</b>	<b>31</b>	<b>31</b>	<b>10</b>	<b>19</b>	<b>12</b>	<b>30</b>
<i>Crenshaw Subdivision Additional Parcels:</i>									
Full Takes	0	0							
Part Takes	1	1							
TCE	0	0							
<b>Subtotal Parcels:</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Crenshaw Parcels</b>	<b>33</b>	<b>32</b>	<b>1</b>	<b>31</b>	<b>31</b>	<b>10</b>	<b>19</b>	<b>12</b>	<b>30</b>
<i>Harbor Subdivision</i>									
Full Takes	15	14		15	15	8	7	12	15
Part Takes (PT or SE)	18	16	2	18	16	7	9		11
TCE	3	2	1	2	2		2	1	1
<b>Subtotal Parcels</b>	<b>36</b>	<b>32</b>	<b>3</b>	<b>35</b>	<b>33</b>	<b>15</b>	<b>18</b>	<b>13</b>	<b>27</b>
<i>Harbor Subdivision Additional Parcels:</i>									
Full Takes	2	2							
Part Takes	1	1							
TCE	3	3		3	3	1			
<b>Subtotal Parcels:</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Harbor Subdivision Parcels</b>	<b>42</b>	<b>38</b>	<b>3</b>	<b>38</b>	<b>36</b>	<b>16</b>	<b>18</b>	<b>13</b>	<b>27</b>
<b>Total CR/HS Parcels:</b>	<b>75</b>	<b>70</b>	<b>4</b>	<b>69</b>	<b>67</b>	<b>26</b>	<b>37</b>	<b>25</b>	<b>57</b>
<i>Southwestern Yard</i>									
Full Takes	8	8		8	8	4	4	7	8
Part Takes	0								
TCE	0								
<b>Subtotal Parcels:</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>8</b>
<b>Total SW Parcels:</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>8</b>
<b>Total Project Parcels</b>	<b>83</b>	<b>78</b>	<b>4</b>	<b>75</b>	<b>73</b>	<b>29</b>	<b>41</b>	<b>32</b>	<b>65</b>

- Seventy-five (75) parcels were originally certified. However, four (4) parcels were decertified due to changes in design. One additional parcel was acquired but not certified due to a voluntary sale. Seven (7) additional parcels (CR-2901, HS-0805, HS-1001-2, HS-1401-1, HS-2301, HS-2701-1, and HS-2703-1) have been added for a new total of 79 project parcels.
- There have been 65 parcels acquired: 35 full takes, 20 part takes and 10 Temporary Construction Easement (TCE) provided to WSCC. (Revised since last report)

## **QUALITY ASSURANCE STATUS**

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

- Attended weekly Quality Staff Meetings with City of Los Angeles, Los Angeles Bureau of Contract Administration, HNTB, and WSCC Lead Quality personnel.
- *WSCC Quality Control "closed" one (1) Nonconformance Report (NCR) for concrete delivery issues at the I-405 Bridge CIDH area.*
- *No new NCR's were issued during the month by WSCC, Metro or ConAd.*
- *WSCC Quality Assurance completed one (1) audit this month for NCR Processes and one (1) Surveillance for Century Bridge Superstructure.*
- *Metro Quality participated in Readiness Review meetings for Fire Protection Stand Pipe; UG 1 and UG 3 CIP concrete and Ballast Barrier activities.*
- *Metro Quality witnessed the Hydro-Testing of Fire Protection Piping (in conjunction with the MTA Fire-Life Safety group and LA Fire Department personnel).*
- *Metro Quality reviewed the Train Control QA Plan from Anselmo.*
- *Metro Quality reviewed Inspection Test Instructions (ITI's) for Thermal Maturity of Concrete and for Structural Invert Concrete.*
- *Metro's Independent Test Lab (ITL) provided oversight evaluation of MSE Backfill Testing and Concrete Testing at the La Brea Superstructure pour.*
- *Metro Quality received WSCC responses to the 2015 Annual Metro Audit of WSCC Project activities and expect to complete review of these responses in early February, 2016.*

## **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
  - Weekly Storm Water Pollution Prevent Plan (SWPPP) inspection reports
  - 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) was submitted on January 25, 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 submitted the Fourth Quarter Monitoring Report to the RWQCB on January 26, 2016.*
- Monitored groundwater dewatering activities at the Expo Station. Metro receives and reviews Weekly Dewatering Reports.
- *During excavation near the Expo Station Entrance, WSCC encountered a small underground storage tank. The tank was removed and Metro submitted a closure report to the LAFD.*
- *Conducted additional Contractor Cultural Awareness Training including coordination of self-rescuer training sessions for cultural monitors.*

## **CONSTRUCTION RELATIONS STATUS**

- *Participated in the 2016 Empowerment Congress and disseminated project information.*
- *Participated in the 2016 Kingdom Day Parade and Festival in Leimert Park.*
- *Hosted the CEO of the Santa Clara Valley Transportation Authority for a tour of Exposition/Crenshaw Station and the alignment on January 22<sup>nd</sup>.*
- *Metro Construction Relations continues to conduct small group meetings with businesses and residents between 48th Street and Slauson Avenue to update them on new proposed construction scheduled and scope of work.*
- *Worked closely with BOE, BSS, and CD8 on the replacement tree plan as well as the design of the Park Mesa Heights at-grade segment.*
- *Provided signage to customers near Hyde Park Avenue concerning impaired access to a strip mall.*
- *Facilitated a meeting with tenants in the Union Equity Building in Inglewood to discuss Metro's intent to purchase their buildings to use for parking at the Fairview Heights Station.*
- *Held an event on February 1<sup>st</sup> at the Exposition Yard to announce the winner of the Tunnel Boring Machine Artwork and Naming Contests.*

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

- Responded to RFIs and submittal drawings.
- *Finalized designs 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.
- *Worked with Design Builder to clarify technical requirements for porcelain enamel fabricators.*
- *Provided art program update to community stakeholders.*
- *Reviewed and provided comments on 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 Incident/Final Investigative Reports and Emergency Call-Out Procedures along with underground "Hot Work."*
- *Participated in Joint Executive Safety Walk on January 29, 2016.*
- *Participated in WSCC/Cal OSHA Mining and Tunneling Opening Conference for routine inspection.*
- *Participated in Crenshaw/LAX Project Tours at the Expo Yard (above and below ground) for Executive Management and FTA.*
- *Conducted underground orientation for Self-Rescuer Training.*
- *Walsh/Shea reported 120,075 work hours and two recordable incidents for the month of January 2016. Total Project-to-Date work hours are 2,111,204 and seventeen recordable incidents. The Project Incident Rate is 1.6. The Bureau of Labor Statistics (BLS) average recordable rate per 200,000 work-hours is 3.2.*

**THIRD PARTY AGREEMENT STATUS**

<b>Third Party</b>	<b>Type of Agreement</b>	<b>Forecast Execution Date</b>	<b>Required Need Date</b>	<b>Status/ Comments</b>
City of Los Angeles	Amendment to Master Cooperative Agreement	N/A	N/A	Parties will work under 2003 MCA.
City of Inglewood	Master Cooperative Agreement	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 5/13	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 was completed in 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	Type	City
A1211018	Eucalyptus 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	Los Angeles
A1302025	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 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.


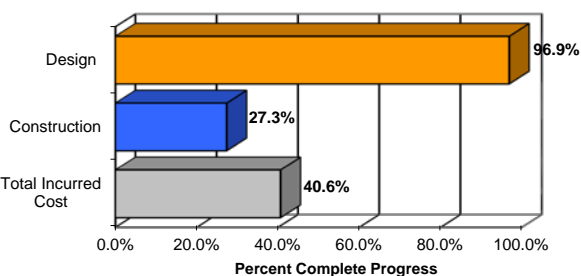
**CHRONOLOGY OF EVENTS (Continued)**

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.


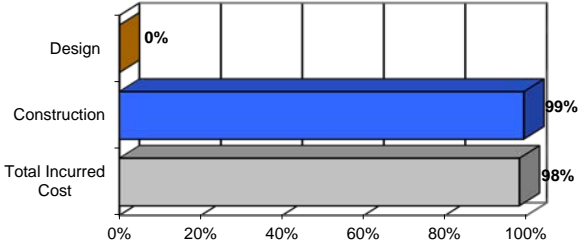
### **CHRONOLOGY OF EVENTS (Continued)**

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*


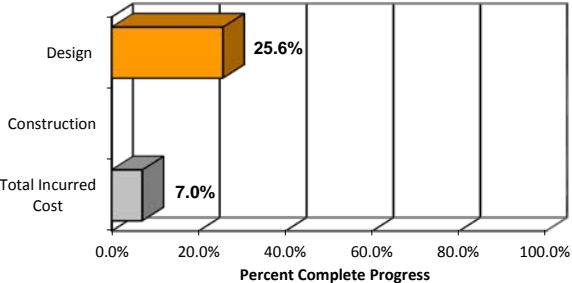
<p><b>PE Design Contractor: Hatch Mott MacDonald (HMM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Walsh Shea Corridor Constructors (WSCC)</b></p>	<p><b>Contract No.: C0988</b> <b>Status as of January 31, 2015</b></p> 																																			
<p><b>Progress/Work Completed:</b></p> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>- Continued potholing along the Grade Crossing, Park Mesa &amp; UG #3 .</li> <li>- Continued geotechnical monitoring at Vernon, MLK, Expo, UG#4, #3 &amp; #1.</li> <li>- Continued with SWPPP Implementation – Segments A, B &amp; C.</li> <li>- Continued the TBM assembly at the Bellanca Yard.</li> <li>- Completed Mud Slab Construction at the Expo Station.</li> <li>- Continued waterproofing, protective slab, invert slab &amp; invert conduit &amp; plumbing construction at Expo Station.</li> <li>- Continued soil excavation &amp; SOE installation at Vernon &amp; MLK Station.</li> <li>- Commenced Jet Grouting for Cross Passage #4.</li> <li>- Continued excavation &amp; utility hanging at UG #4.</li> <li>- Continued SOE Installation at UG #3.</li> <li>- Continued construction of Ballast Wall in Seg B1.</li> <li>- Continued superstructure work at the La Brea bridge.</li> <li>- Completed MSE wall panel erection/back fill at La Brea West Wall.</li> <li>- Completed Excavation of footprint for the La Brea MSE East Wall.</li> <li>- Commenced Setting and backfilling MSE Panels at La Brea East Wall.</li> <li>- Continued OCS foundation construction on segment B1.</li> <li>- Continued structural concrete work at the Pedestrian Underpass.</li> <li>- Continued abutment footing at I-405 Bridge.</li> <li>- Continued subgrade guideway cut of Segment A.</li> <li>- Continued excavation, bracing installation, mud slab, waterproofing &amp; protective slab UG #1.</li> <li>- Commenced Invert slab UG #1.</li> <li>- Continued falsework construction at the Green Line Tie-In.</li> <li>- Commenced Green Line MSE Wall panel setting and backfill.</li> </ul>	<p><b>Areas of Concern:</b></p> <ul style="list-style-type: none"> <li>- Possible cobbles and boulders found during excavation at Expo and MLK station.</li> <li>- Station excavation to be impacted by excessive water inflow at EXPO Station.</li> <li>- Segment A guideway work may be impacted by implementation of a westward shifting of the LRT tracts in Guideway at Segment A for the future 96th Street Station.</li> <li>- Street package decision by the city family reviews may impact the start of the Park Mesa street work.</li> <li>- Contractor's schedule does not accurately forecast its work efforts.</li> </ul>																																			
<p><b>Schedule Assessment:</b> Contractor's Jan 2016 schedule update indicates Milestone 1 - Contract Substantial Completion is 151 calendar days behind the current contract date.</p>	<p><b>Cost Assessment:</b> The current construction contract cost forecast is \$1,290.27 million and is within the Board authorized budget.</p> <p>The Contractor submitted their 29th payment application in the approved amount of \$12,591,098.46.</p> <p>*Please note that not all executed modifications may have been included in the Contractor current payment application.</p>																																			
<p><b>Schedule Summary:</b></p> <table border="0"> <tr><td>1. Date of Award:</td><td>08/01/13</td></tr> <tr><td>2. Notice to Proceed:</td><td>09/10/13</td></tr> <tr><td>3. Original Substantial Completion Duration:</td><td>1824</td></tr> <tr><td>4. Current Substantial Completion Duration:</td><td>2010</td></tr> <tr><td>5. Elapsed Time from NTP:</td><td>872</td></tr> </table>	1. Date of Award:	08/01/13	2. Notice to Proceed:	09/10/13	3. Original Substantial Completion Duration:	1824	4. Current Substantial Completion Duration:	2010	5. Elapsed Time from NTP:	872	<p><b>Cost Summary:</b> <span style="float: right;"><b>\$ In millions</b></span></p> <table border="0"> <tr><td>1. Award Value:</td><td style="text-align: right;">1,272.63</td></tr> <tr><td>2. Executed Modifications:</td><td style="text-align: right;">14.97</td></tr> <tr><td>3. Approved Change Orders:</td><td style="text-align: right;">2.67</td></tr> <tr><td>4. Current Contract Value (1 + 2 + 3):</td><td style="text-align: right;">1,290.27</td></tr> <tr><td>5. Incurred Cost:</td><td style="text-align: right;">523.95</td></tr> </table>	1. Award Value:	1,272.63	2. Executed Modifications:	14.97	3. Approved Change Orders:	2.67	4. Current Contract Value (1 + 2 + 3):	1,290.27	5. Incurred Cost:	523.95															
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**CONTRACT C0990 STATUS**  
*Crenshaw/LAX Advanced Utility Relocations*


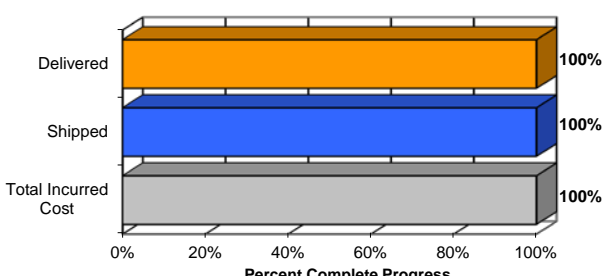
<p><b>PE Design Contractor:</b> Hatch Mott MacDonald (HMM) <b>CM Consultant:</b> Stantec <b>Contractor:</b> - Metro Builders and Engineers Group LTD</p>	<p><b>Contract No.:</b> C0990 <b>Status as of January 31, 2016</b></p> 																																			
<p><b>Progress/Work Completed:</b> - The construction was substantially completed on Aug 21, 2014</p>	<p><b>Areas of Concern:</b></p>																																			
<p><b>Schedule Assessment:</b> Metro has agreed to grant a total of 124 calendar day time extension as a result of lost production due to sandy soil conditions and revised installation methodology for sewer line work at 59th &amp; Crenshaw, and traffic control and work hour restriction to 67th &amp; Crenshaw. .  Metro granted substantial completion to Metro Builders, the Advanced Utility Contractor on August 21, 2014, which is 276 calendar days behind.</p>	<p><b>Cost Assessment:</b> The current construction contract cost is \$9.29 million and within the Board authorized budget.  The unpaid amount is the scope deletion from the base contract and remaining balance of provisional sums .</p>																																			
<p><b>Schedule Summary:</b></p> <table border="0"> <tr> <td>1. Date of Award:</td> <td align="right">05/30/12</td> </tr> <tr> <td>2. Notice to Proceed:</td> <td align="right">07/17/12</td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td align="right">365</td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td align="right">468</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td align="right">753</td> </tr> </table>	1. Date of Award:	05/30/12	2. Notice to Proceed:	07/17/12	3. Original Substantial Completion Duration:	365	4. Current Substantial Completion Duration:	468	5. Elapsed Time from NTP:	753	<p><b>Cost Summary:</b> <span style="float: right;"><b>\$ In millions</b></span></p> <table border="0"> <tr> <td>1. Award Value:</td> <td align="right">7.83</td> </tr> <tr> <td>2. Executed Modifications:</td> <td align="right">0.97</td> </tr> <tr> <td>3. Approved Change Orders:</td> <td align="right">0.49</td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td align="right">9.29</td> </tr> <tr> <td>5. Incurred Cost:</td> <td align="right">9.12</td> </tr> </table>	1. Award Value:	7.83	2. Executed Modifications:	0.97	3. Approved Change Orders:	0.49	4. Current Contract Value (1 + 2 + 3):	9.29	5. Incurred Cost:	9.12															
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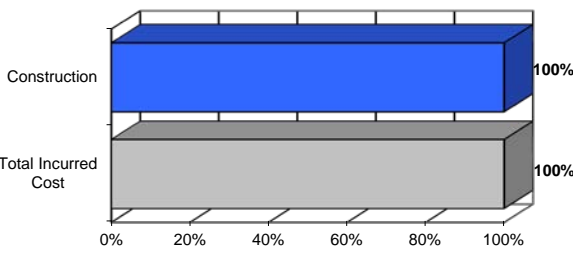
**CONTRACT C0991 STATUS**  
*Southwestern Yard*

<p><b>PE Design Contractor: Hatch Mott MacDonald (HMM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Hensel Phelps / Herzog JV</b></p>	<p><b>Contract No.: C0991</b></p> <p><b>Status as of January 31, 2016</b></p> 																									
<p><b>Progress/Work Completed:</b></p> <ul style="list-style-type: none"> <li>- Contractor is working on early contract required submittals.</li> <li>- IPMO location is West Century Blvd and Metro team have moved-in to their new location.</li> <li>- Design workshop #1 meeting was held with key stakeholders.</li> <li>- Design submittal 60% of APDU 1 was submitted on November 1, 2015.</li> <li>- Baseline schedule was submitted on November 16th and was approved as noted on December 11, 2015.</li> <li>- Design submittal 85% of APDU 1 was submitted on January 8, 2016.</li> <li>- Design Submittal 60% of APDU 2 was submitted on January 28, 2016.</li> </ul>	<p><b>Areas of Concern:</b></p> <ul style="list-style-type: none"> <li>- Contractor is behind in submitting their monthly schedule update and invoicing.</li> </ul>																									
<p><b>Schedule Assessment:</b></p> <ul style="list-style-type: none"> <li>- Change Order # CO-0004 was issued extending contract duration by 90 calendar days. New substantial completion date is 01/30/2019.</li> </ul>	<p><b>Cost Assessment:</b></p> <ul style="list-style-type: none"> <li>- Contract to Hensel Phelps / Herzog JV was awarded for \$172.3 million.</li> <li>- November 2015 pay application for \$0.74 million has been approved by Metro and paid.</li> <li>- December 2015 pay application for \$2.85 million has been approved by Metro.</li> <li>- January 2016 pay application is in progress waiting for contractor to submit for review.</li> </ul>																									
<p><b>Schedule Summary:</b></p> <table border="0"> <tr> <td>1. Date of Award:</td> <td>28-May-15</td> </tr> <tr> <td>2. Notice to Proceed:</td> <td>29-Jun-15</td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td>1,220</td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td>1,311</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td>214</td> </tr> </table>	1. Date of Award:	28-May-15	2. Notice to Proceed:	29-Jun-15	3. Original Substantial Completion Duration:	1,220	4. Current Substantial Completion Duration:	1,311	5. Elapsed Time from NTP:	214	<p><b>Cost Summary:</b></p> <table border="0"> <thead> <tr> <th></th> <th style="text-align: right;"><b>\$ In millions</b></th> </tr> </thead> <tbody> <tr> <td>1. Award Value:</td> <td style="text-align: right;">172.31</td> </tr> <tr> <td>2. Executed Modifications:</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>3. Approved Change Orders:</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td style="text-align: right;">172.31</td> </tr> <tr> <td>5. Incurred Cost (thru Dec 2015):</td> <td style="text-align: right;">12.11</td> </tr> </tbody> </table>		<b>\$ In millions</b>	1. Award Value:	172.31	2. Executed Modifications:	0.00	3. Approved Change Orders:	0.00	4. Current Contract Value (1 + 2 + 3):	172.31	5. Incurred Cost (thru Dec 2015):	12.11			
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**CONTRACT C0992 STATUS**  
*Concrete Ties*

<p><b>PE Design Contractor: Hatch Mott MacDonald (HMM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: Rocla Concrete Tie Inc.</b></p>	<p><b>Contract No.: C0992</b> <b>Status as of January 31, 2016</b></p>																																				
<p><b>Progress/Work Completed:</b> - All 19,936 concrete ties have been received onsite by the design-builder (Contract C0988). - Contract is in close-out.</p>	<p><b>Areas of Concern:</b></p>																																				
<p><b>Schedule Assessment:</b></p>	<p><b>Cost Assessment:</b> The current construction contract cost is \$2.25 million and has been completely paid to contractor.</p>																																				
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**CONTRACT C0992A STATUS**  
*Running Rail and Bumping Posts*

<p><b>PE Design Contractor: Hatch Mott MacDonald (HMM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: LB Foster Rail Technology Corp</b></p>	<p><b>Contract No.: C0992A</b> <b>Status as of January 31, 2016</b></p> 																																			
<p><b>Progress/Work Completed:</b> - All 115RE SS Blank Stick Rails have been delivered to the job site. - All 115RE HH rail have been delivered to job site. - All Bumping Posts have been delivered to job site on 5/8/2015.</p>	<p><b>Areas of Concern:</b> .</p>																																			
<p><b>Schedule Assessment:</b> All running rails and bumping posts have been delivered ahead of the schedule.</p>	<p><b>Cost Assessment:</b> The current contract cost is \$5,2 million and has been completely paid to contractor.</p>																																			
<p><b>Schedule Summary:</b></p> <table border="0"> <tr> <td>1. Date of Award:</td> <td align="right">01/23/14</td> </tr> <tr> <td>2. Notice to Proceed:</td> <td align="right">03/07/14</td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td align="right">300</td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td align="right">558</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td align="right">448</td> </tr> </table>	1. Date of Award:	01/23/14	2. Notice to Proceed:	03/07/14	3. Original Substantial Completion Duration:	300	4. Current Substantial Completion Duration:	558	5. Elapsed Time from NTP:	448	<p><b>Cost Summary:</b> <span style="float: right;"><b>\$ In millions</b></span></p> <table border="0"> <tr> <td>1. Award Value:</td> <td align="right">5.2</td> </tr> <tr> <td>2. Executed Modifications:</td> <td></td> </tr> <tr> <td>3. Approved Change Orders:</td> <td></td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td align="right">- 5.2</td> </tr> <tr> <td>5. Incurred Cost:</td> <td align="right">5.2</td> </tr> </table>	1. Award Value:	5.2	2. Executed Modifications:		3. Approved Change Orders:		4. Current Contract Value (1 + 2 + 3):	- 5.2	5. Incurred Cost:	5.2															
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5. Incurred Cost:	5.2																																			
<table border="1"> <thead> <tr> <th>Milestones</th> <th>Original Contract</th> <th>Current Contract</th> <th>Forecast</th> <th>Calendar Day Variance</th> </tr> </thead> <tbody> <tr> <td>Milestone 1 - Contract Substantial Completion</td> <td align="center">12/31/14</td> <td align="center">09/30/15</td> <td align="center">05/08/15</td> <td align="center">145</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td align="center">0</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td align="center">0</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td align="center">0</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td align="center">0</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td align="center">0</td> </tr> </tbody> </table>	Milestones	Original Contract	Current Contract	Forecast	Calendar Day Variance	Milestone 1 - Contract Substantial Completion	12/31/14	09/30/15	05/08/15	145					0					0					0					0					0	<p align="center"><b>PERCENT COMPLETE</b> <i>from 3/7/2014 to 05/29/15</i></p>  <p align="center">Construction physical percent complete excludes mobilization and general requirements</p>
Milestones	Original Contract	Current Contract	Forecast	Calendar Day Variance																																
Milestone 1 - Contract Substantial Completion	12/31/14	09/30/15	05/08/15	145																																
				0																																
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				0																																
				0																																

## CONSTRUCTION PHOTOGRAPHS



**MSE Wall 17L&R (Mechanically Stabilized Embankment):** Precast Panel placement begins. Leveling pads and subgrade preparation nearly complete.



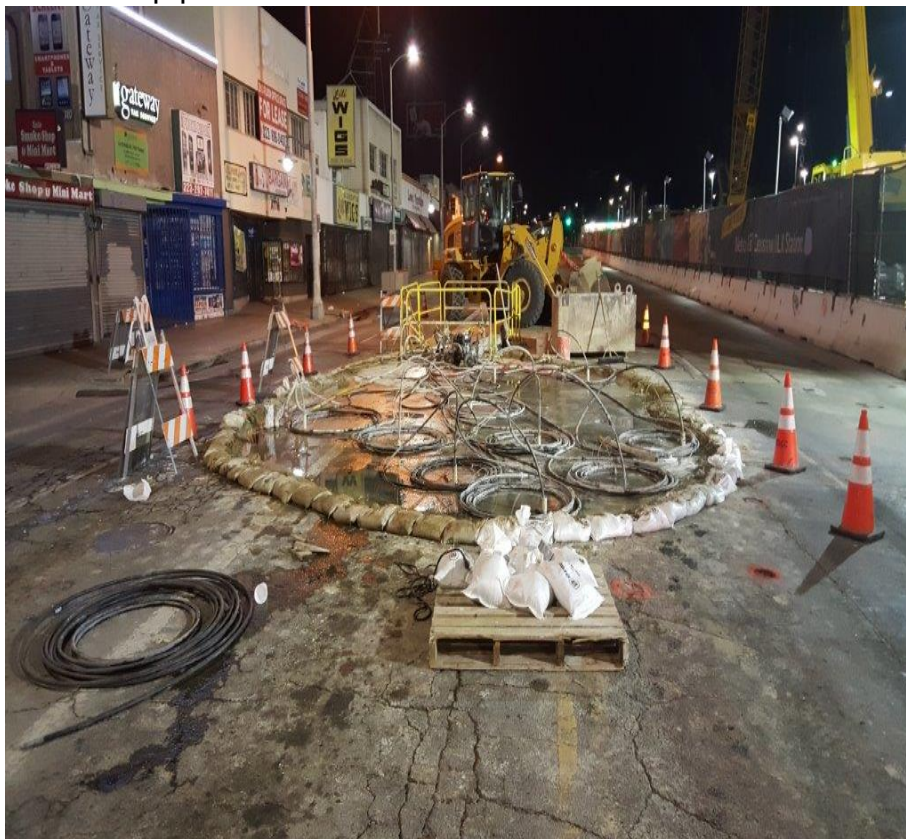
**LA BREA BRIDGE:** Stem and soffit pour complete. Deck pour scheduled to take place in two weeks followed by post-tensioning.



## CONSTRUCTION PHOTOGRAPHS (Continued)



**MSE WALL 202L&R:** Crews continue to work on subgrade preparation and leveling pads for MSE 202L&R. Crews have begun to work on precast panel erection and strap placement/backfill for 202L.



**MARTIN LUTHER KING JR. STATION – TBM Break-In chemical grout operation.**

**CONSTRUCTION PHOTOGRAPHS (Continued)**



**EXPOSITION/CRENSHAW STATION** – Installation of waterproofing components



**EXPOSITION/CRENSHAW STATION** – Installation of waterproofing in the sump pit



**CONSTRUCTION PHOTOGRAPHS (Continued)**



Tunnel ventilation fabrication at Bellanca Yard.

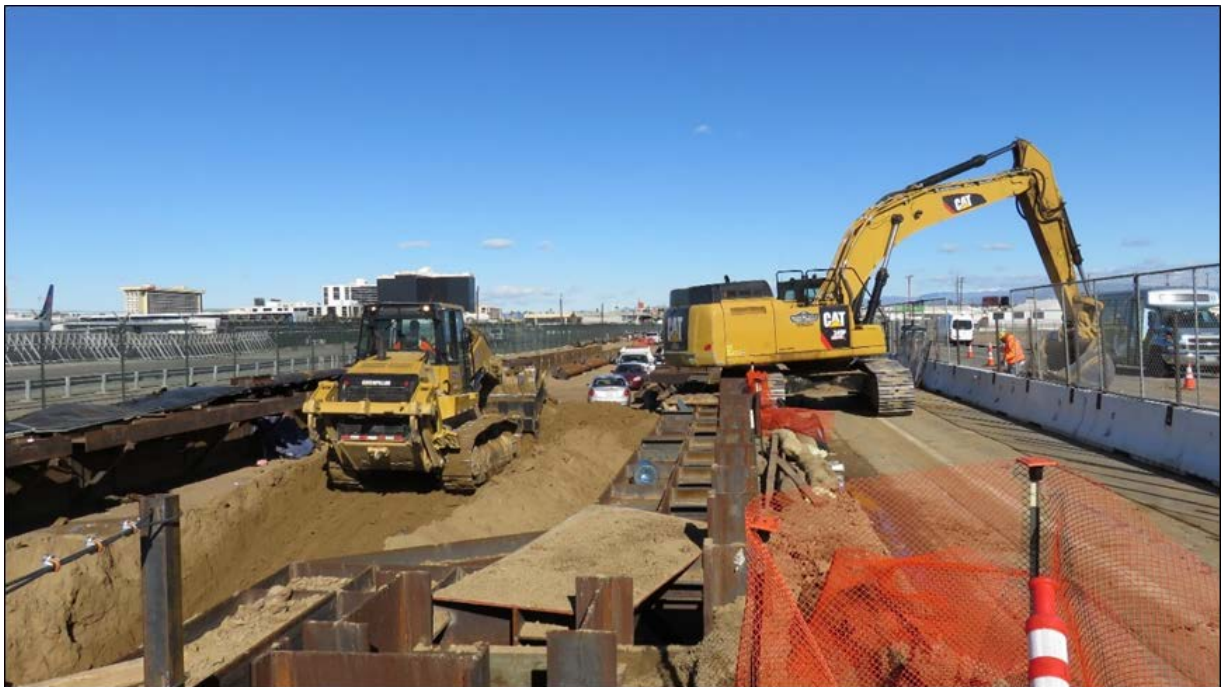


**LEIMERT PARK STATION** - Looking south with UG4 in the background.

### CONSTRUCTION PHOTOGRAPHS (Continued)



Mud Slab on the South Side of UG1.



WSSC Excavating on north end of UG1.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



Completed (North) Abutment and Falsework.

**APPENDIX**

**PROJECT COST STATUS – SOUTHWESTERN YARD**

UNITS IN DOLLARS

SCC CODE	DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST VARIANCE
			PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
10	GUIDEWAYS	0	0	0	0	0	0	0	0	0	0
20	STATIONS	0	0	0	0	0	0	0	0	0	0
30	SUPPORT FACILITIES (Y & S)	85,546,835	0	85,189,999	0	86,532,695	0	0	0	86,889,531	1,699,532
40	SITWORK/SPECIAL CONDITIONS	35,932,000	0	38,273,000	793,981	38,516,904	0	8,636,227	0	38,273,000	0
50	SYSTEMS	25,784,616	0	32,991,000	0	32,991,000	0	0	0	32,991,000	0
	(10-50) CONSTRUCTION	147,263,451	0	156,453,999	793,981	158,040,599	0	8,636,227	0	158,153,531	1,699,532
60	RIGHT-OF-WAY	99,910,000	0	100,000,000	0	91,045,831	0	90,953,927	0	100,000,000	(0)
70	VEHICLES	0	0	0	0	0	0	0	0	0	0
80	PROFESSIONAL SERVICES	35,601,095	0	33,639,631	3,198,705	24,635,468	2,995,645	12,542,953	0	31,815,199	(1,824,432)
90	PROJECT CONTINGENCY	13,659,732	0	17,106,370	0	0	0	0	0	17,231,270	124,900
<b>TOTAL</b>		<b>296,434,278</b>	<b>0</b>	<b>307,200,000</b>	<b>3,992,686</b>	<b>273,721,899</b>	<b>2,995,645</b>	<b>112,133,106</b>	<b>0</b>	<b>307,200,000</b>	<b>(0)</b>

**C0991 PAINT & BODY SHOP PROJECT**

DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST VARIANCE
		PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
861301 DIV 22 PAINT & BODY SHOP	11,000,000	0	11,000,000	201	6,915,732	201	193,448	0	11,000,000	0

<b>PROJECT GRAND TOTAL</b>	<b>307,434,278</b>	<b>0</b>	<b>318,200,000</b>	<b>3,992,888</b>	<b>280,637,631</b>	<b>2,995,847</b>	<b>112,326,554</b>	<b>0</b>	<b>318,200,000</b>	<b>(0)</b>
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**PROJECT COST ANALYSIS**

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

**Original Budget:**

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

**Current Budget:**

The Board in May 2015 approved an increase for the funding for the Southwestern Yard by \$22.0 million to increase the 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.

**APPENDIX  
PROJECT COST ANALYSIS (Continued)**

**Current Forecast:**

There were no changes this month.

**Commitments:**

The commitments are cumulative through January 30, 2016.

Total commitments increased by \$4.0 million for this period due to the following:

- SCC-40
  - AT&T new task order for \$0.04 million utility relocation and installation.
  - Department of Water and Power for new task order for \$0.2 million for relocation of power poles.
  - HHS Construction Inc. task order F420 increase for change order for \$0.05 million for XO Communication Lines.
- SCC-80
  - Los Angeles County new task order for \$0.05 million for permitting and plan review.
  - Hatch Mott task order E0117 increased by \$3.23 million for Engineering and Design.

The \$280.6 million in commitments to date represents 88.2% of the current budget.

**Expenditures:**

The expenditures are cumulative through January 30, 2016.

The total expenditures increased by \$3.0 million for this period due to the following:

- SCC-80
  - Engineering and design expenditure increase for \$0.22 million by Hatch Mott.
  - Accounting adjustment, increase of expenditure to the project by \$2.67 million which should be reversed out in by accounting by next month reporting period.

The \$112.3 million in expenditures to date represents 35.3% of the current budget.

**APPENDIX  
COST AND BUDGET TERMINOLOGY**

<b>Project Cost Descriptions -</b>	
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.
<b>Cost Report by Element Descriptions -</b>	
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	Advanced Conceptual Engineering
ADA	Americans with Disabilities Act
ADR	Alternative Dispute Resolution
AFC	Approved for Construction
ALJ	Administrative Law Judge
AMC	Airport Metro Connector
APM	Automated People Mover
ATC	Alternative Technical Concept
ATC	Automatic Train Control
ATSAC	Automated Traffic Surveillance and Control
BAFO	Best and Final Offer
BID	Business Improvement Development
BIM	Building Information Modeling
BLS	Bureau of Labor Statistics
BMP	Best Management Practices
BNSF	Burlington Northern Santa Fe Railway Company
BOC	Bus Operations Control
CADD	Computer Aided Drafting and Design
CALTRANS	California Department of Transportation
CARB	California Air Resources Control Board
CCTV	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 Angeles
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**  
**LIST OF ACRONYMS (Continued)**

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**  
**LIST OF ACRONYMS (Continued)**

HMM	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
L RTP	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
MMRP	Mitigation Monitoring Reporting Plan
MOA	Memorandum of Agreement
MOS	Minimum Operating Segment
MOT	Maintenance of Traffic
MOU	Memorandum of Understanding

**APPENDIX  
LIST OF ACRONYMS (Continued)**

MPS	Master Program Schedule
MPSR	Monthly Project Status Report
MRDC	Metro Rail Design Criteria
MSDS	Material Safety Data Sheet
MSE	Mechanically Stabilized Embankment
MSF	Maintenance & Storage Facility
N/A	Not Applicable
NAICS	North American Industry Classification System
NAVAIDS	Navigational Aid Systems
NCMP	Noise Control Monitoring Plan
NCP	Noise Control Plan
NCR	Non Compliance Report
NEPA	National Environmental Protection Act
NFPA	National Fire Protection Association
NNC	Notice of Noncompliance
NOD	Notice of Determination
NPDES	National Pollution Discharge Elimination System
NTE	Not to Exceed
NTP	Notice To Proceed
NTS	Not To Scale
O&M	Operations and Maintenance
OCC	Operations Control Center
OCS	Overhead Catenary System
OSHA	Occupational Health and Safety Administration
OTS	Over the Shoulder
PA/VMS	Public Address/Visual Messaging Sign
PDQM	Project Design Quality Manual
PE	Preliminary Engineering
PEER	Permit Engineering Evaluation Report
PID	Photo Ionization Detector
PIP	Project Implementation Plan
PLA	Project Labor Agreement
PM	Project Manager
PMH	Park Mesa Heights
PMIP	Project Management Implementation Plan
PMMP	Paleontological Monitoring and Mitigation Plan
PMOC	Project Management Oversight Consultant
PMP	Project Management Plan
P&P	Policies & Procedures
PPE	Personnel Protective Equipment
POD	Project Oriented Discussions
PQM	Project Quality Manager
PQPM	Project Quality Program Manual



**APPENDIX  
LIST OF ACRONYMS (Continued)**

PR	Project Report
PS&E	Plan, Specifications and Estimates
PSR	Project Study Report
PTMISEA	Public Transportation Modernization, Improvement and Service Enhancement
QA	Quality Assurance
QAR	Quality Assurance Report
QC	Quality Control
QPSR	Quarterly Project Status Report
QTIB	Qualified Transit Improvement Bonds
RAMP	Real Estate Acquisition Management Plan
RCHAR	Rail Crossing Hazards Analysis Report
RCMP	Risk Assessment Management Plan
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
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

**APPENDIX  
LIST OF ACRONYMS (Continued)**

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	State Transportation Improvement Program
STP	Surface Transportation Program
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
STV	STV Group
SWPP	Storm Water Prevention Plan
SWY	Southwestern Yard (Division 16)
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Train Control/Communications
TCE	Temporary Construction Easement
TCRP	Traffic Congestion Relief Program
TIA	Time Impact Analysis
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TOD	Transit Oriented Development
TPSS	Traction Power Substation
TRACS	Transit Automatic Control
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	Underground Storage Tank
VE	Value Engineering
WBS	Work Breakdown Structure

**APPENDIX**  
**LIST OF ACRONYMS (Continued)**

WP Work Package  
WSCC Walsh /Shea Corridor Constructors  
WTCP Work Traffic Control Plan  
YOE Year of Expenditure