

# 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).

**OCTOBER 2015**


## TABLE OF CONTENTS

	Page No.
Project Summary.....	1
Project Overview & Status.....	2-4
Management Issues.....	5-6
Project Alignment.....	7
Project Scope.....	8-9
Project Status	
• Project Schedule	
○ Key Milestones Six-Month Look Ahead.....	10
○ Project Summary Schedule.....	11
○ Schedule Measurements.....	12
○ Overall Construction Progress Curve.....	13
○ Major Equipment Delivery .....	14
○ Design-Builder's (C0988) Long Lead Item List.....	15
○ Critical Path Narrative.....	16
○ Project Schedule Contingency Drawdown.....	17
○ Project Schedule Contingency Drawdown Analysis.....	17
• Project Cost	
○ Project Cost .....	18
○ Project Cost Analysis.....	18-20
○ Project Cost Contingency Drawdown.....	21
○ Project Cost Contingency Drawdown Analysis.....	21-22
○ Disadvantaged Business Enterprise (DBE).....	23
○ Project Labor Agreements (PLA) Status.....	23
○ Summary of Contract Modifications.....	24-25
• Financial/Grant	
○ Financial/Grant .....	26
○ Status of Funds Anticipated.....	27
• Staffing	
○ Total Project Staffing.....	28
○ Metro Staffing.....	29
○ Construction Management Support Services Consultant.....	29
○ Engineering Services Consultant.....	30

**TABLE OF CONTENTS (Continued)**

	Page No.
• Real Estate.....	31
• Quality Assurance.....	32
• Environmental.....	33
• Construction Relations.....	34
• Systemwide Design and Art Program.....	35
• Safety and Security.....	35
• Third Party Agreement and Advanced Utility Relocation.....	36
• Peak Hour and Nighttime Construction Variances.....	37
• California Public Utilities Commission (CPUC) Crossing Summary...	38
• Chronology of Events.....	39-42
• Construction Contracts	
o Contract C0988 .....	43
o Contract C0990. ....	44
o Contract C0991 .....	45
o Contract C0992.....	46
o Contract C0992A.....	47
• Construction Photographs.....	48-53
Appendices	
• Project Cost Status – Southwestern Yard.....	54-55
• Cost and Budget Terminology.....	56
• List of Acronyms.....	57-62

**PROJECT SUMMARY**

<b>LOCATION:</b> Crenshaw Blvd at Exposition to Green Line <b>DESIGN/CONSULTANT:</b> Hatch Mott MacDonald				<b>CONSTRUCTION MANAGEMENT CONSULTANT:</b> Stantec <b>CONTRACTOR:</b> Walsh-Shea Corridor Constructors (WSCC)			
<b>PROJECT PHOTO:</b> Treated lagging installation ongoing as excavation continues for underground structure (UG#1) at end of LAX runways.				<b>WORK COMPLETED PAST MONTH:</b>			
				<ul style="list-style-type: none"> <li>o Continued final design.</li> <li>o Continued excavation for UG#1 near LAX airport runways.</li> <li>o Continued superstructure construction for Century bridge.</li> <li>o Continued pile installation at UG#3 and UG#4 on Crenshaw Blvd.</li> <li>o Continued CIDH pile installation for bridge over I-405.</li> <li>o Commenced the TBM assembly at the Bellanca Ave yard.</li> <li>o Continued superstructure construction for the La Brea bridge.</li> <li>o Continued OCS foundation construction on segment B1.</li> <li>o Continued soil excavation at Leimert Park, MLK and Expo Stations</li> <li>o Continued real estate acquisitions with emphasis on remaining partial-takes and temporary construction easements.</li> <li>o Southwestern Yard contractor continues early contract submittals.</li> <li>o Continued construction of pedestrian underpass for Faithful Central Bible church</li> </ul>			
<b>EXPENDITURE STATUS (\$ In Millions)</b>				<b>SCHEDULE ASSESSMENT</b>			
<b>ACTIVITIES</b>	<b>CURRENT BUDGET</b>	<b>EXPENDED AMOUNT</b>	<b>PERCENT EXPENDED</b>	<b>MAJOR SCHEDULE ACTIVITIES</b>	<b>PRIOR PLAN</b>	<b>CURRENT PLAN</b>	<b>VARIANCE WEEKS</b>
<b>DESIGN</b>	\$ 136.7	\$ 111.6	81.6%	<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	\$ 109.5	85.9%	<b>Design</b>			
<b>CONSTRUCTION</b>	\$ 1,353.1	\$ 427.8	31.6%	Preliminary Engineering	Nov-11	Nov-11	Complete
				Final Design	Sep-15	Mar-16	6.4 months behind
<b>OTHER</b>	\$ 440.8	\$ 122.7	27.8%	<b>Right-of-Way</b>			
<b>TOTAL</b>	\$ 2,058.0	\$ 771.7	37.5%	Full-take parcels available	Jan-15	Jan-15	Complete
Note: cost expended as of October 31, 2015.				Part-take and TCE parcels	Sep-15	Dec-15	3.5 months behind
<b>AREAS OF CONCERN</b>				<b>Construction</b>			
<ul style="list-style-type: none"> <li>o Third party relocations prior to design-builder's construction.</li> <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 cost and schedule potential impacts.</li> </ul>				D-B Notice to Proceed	Sep-13	Sep-13	Complete
				D-B Substantial Complete	Oct-18	Feb-19	4 months behind
				Revenue Service Date	Oct-19	Oct-19	On schedule*
				The D-B Substantial Complete prior plan was modified by a 35 day concurrent delay contract modification in March 2015.			
				*Note: Current Revenue Service Date includes a reduction in contingency.			
<b>ROW ACQUISITION</b>	<b>PLAN</b>	<b>ACQUIRED</b>	<b>REMAINING</b>	<b>CRITICAL ACTIVITIES / 3 MONTH LOOK AHEAD</b>			
FULL TAKES	35	35	0	<ul style="list-style-type: none"> <li>o Continue TBM assembly.</li> <li>o Place invert slab at Expo Station.</li> <li>o Excavate to 3rd tier struts and walers at MLK Station.</li> <li>o Continue MSE retaining walls along alignment.</li> <li>o Commence work on Park Mesa area.</li> <li>o Continue working on Green Line tie-in, Century, Imperial, La Brea, Manchester and I-405 aerial structures.</li> <li>o Complete pile installation at UG#4 on Crenshaw Blvd.</li> <li>o Complete pile installation for UG#3 on Crenshaw Blvd.</li> </ul>			
PARTIAL TAKES	26	21	5				
TEMPORARY EASEMENTS	12	12	0				
<b>TOTAL PARCELS</b>	<b>73</b>	<b>68</b>	<b>5</b>				

## **PROJECT OVERVIEW**

### **Construction**

**Contract C0990** - The advanced utility relocations contractor, Metro Builders and Engineers Group, LTD was substantially completed on August 21, 2014. Contract is now in close-out phase. Metro and Metro Builders and Engineers Group have agreed to mediation in November 2015 to have positions heard on outstanding claims.

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

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

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

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

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

### **Systems**

Metro staff initiated a study to explore possible alternative layouts to accommodate the central control functions associated with new project needs, such as Crenshaw/LAX project, within the existing ROC facility as an interim measure. Metro has determined that the best interim course of action is to expand the existing functional operations at the ROC under a Phase 1 approach to support five new rail lines and extensions including the Crenshaw/LAX Project. The existing ROC will be expanded and will reconfigure the existing ROC service control and closed circuit television monitoring areas to increase overall space requirements by approximately 22 percent. A full build-out of a combined BOC/ROC is also being planned under a Phase 2 approach on land to be acquired by Metro as a separate Capital Improvement Project near Division 20.

## **PROJECT OVERVIEW (Continued)**

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

### **Program Management**

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

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

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

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

The LOP budget is funded by various sources of funds which include local, state and federal funding. The TIFIA Loan is categorized under local funds as the loan is secured by a pledge of Measure R local sales tax funds. The funding percentages are as follows: local funding 79.9%, state funding 8.8% and federal funding 11.3%.

*The project commitments thru October 2015 are \$1,776.1 million or 86.3% of the Current Budget. The project expenditures thru October 2015 are \$771.7 million or 37.5% of the Current Budget.*

## **PROJECT OVERVIEW (Continued)**

The current period expenditures are for design-builders monthly design and construction costs as well as right-of-way and professional services costs. 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 design-builder reported an additional 42-calendar day delay in their October 2015 Schedule Update Narrative due to the project's critical path shifting from the excavation of the Expo/Crenshaw Station (TBM) to the Park Mesa at-grade section of the project. Metro does not concur with the design-builder's forecast as the contractor has not accurately updated the schedule to reflect their planned sequence of construction. The design-builder stated in their monthly update that they are developing measures to mitigate some of the forecast delays but they did not incorporate any in their latest schedule update.*

*Metro has included an additional -14 calendar days to the previous month's -108 calendar days as this is the delay in the schedule for the Expo/Crenshaw Station construction efforts which has been the critical path since the beginning of the design-build contract (September 2013). Metro therefore is reflecting only -122 calendar days for the total delay to the design-builder's substantial completion milestone in absence of substantiating documentation to the contrary from the design-builder. This is in contrast to the design-builder's unsupported forecast delay to their substantial completion milestone of -239 calendar days.*



## **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:** 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 will complete the remaining advance utility relocation by December 2015.*

## **MANAGEMENT ISSUES (Continued)**

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

**Status/Action** WSCC is submitting submittals in advance of the construction need date but may potentially be at risk of late design submittals impacting future start of various construction activities. Metro has been working closely with WSCC and the cities to address the submittal schedule changes so as not to impact the project schedule critical path. Metro and the cities have also accelerated submittals specified as critical by WSCC so as not to impact construction. *WSCC is now scheduled to issue their last submittal in March 2016. WSCC is approximately 96% complete and will continue design services during the construction phase.*

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

**Status/Action** *The design-builder reported an additional 42-calendar day delay in their October 2015 Schedule Update Narrative due to the project's critical path shifting from the excavation of the Expo/Crenshaw Station (TBM) to the Park Mesa at-grade section of the project. Metro does not concur with the design-builder's forecast as the contractor has not accurately updated the schedule to reflect their planned sequence of construction. The design-builder stated in their monthly update that they are developing measures to mitigate some of the forecast delays but they did not incorporate any in their latest schedule update.*

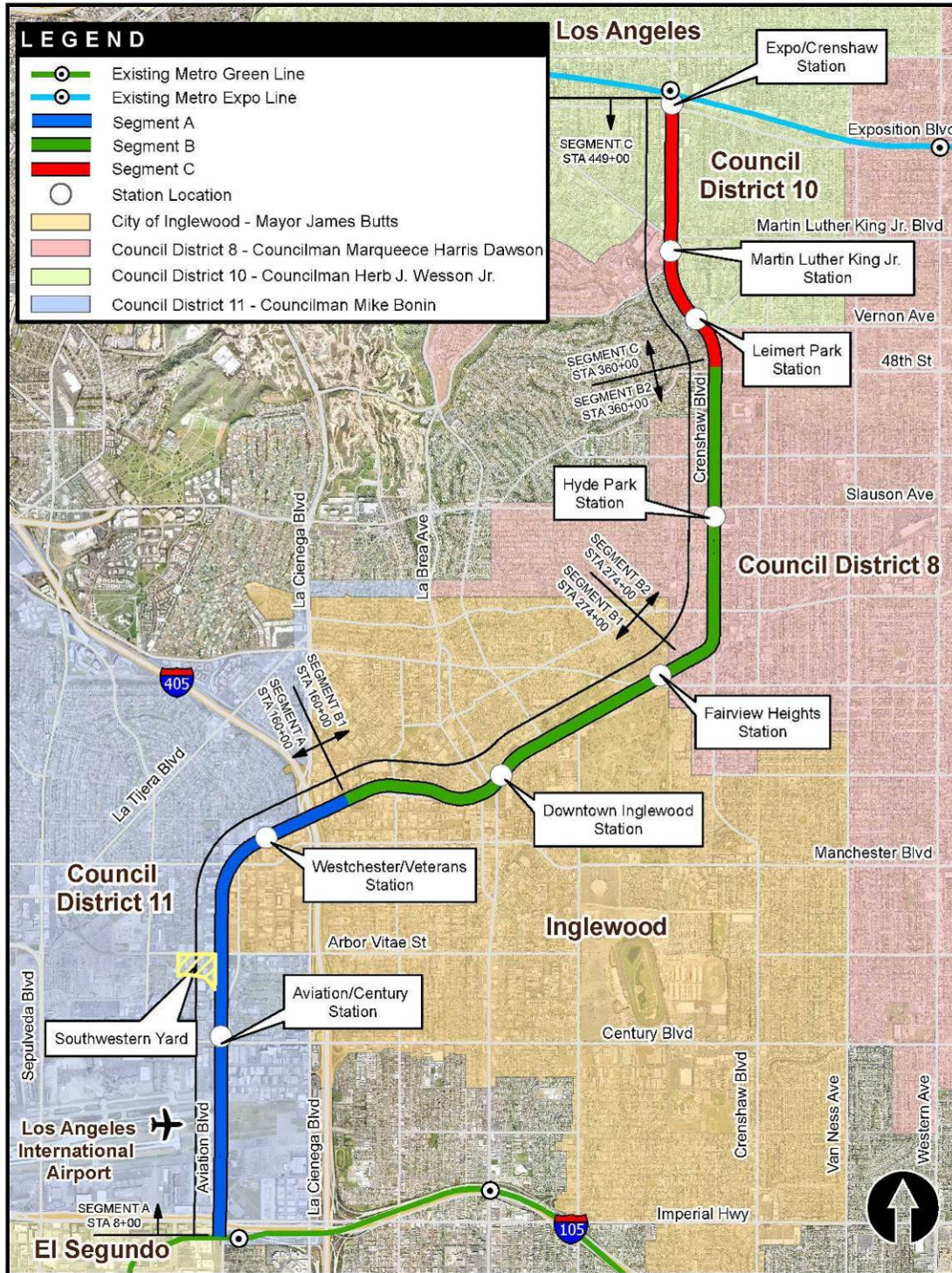
*Metro has included an additional -14 calendar days to the previous month's -108 calendar days as this is the delay in the schedule for the Expo/Crenshaw Station construction efforts which has been the critical path since the beginning of the design-build contract (September 2013).*

*Metro therefore is reflecting only -122 calendar days for the total delay to the design-builder's substantial completion milestone in absence of substantiating documentation to the contrary from the design-builder. This is in contrast to the design-builder's unsupported forecast delay to their substantial completion milestone of -239 calendar days.*

**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**

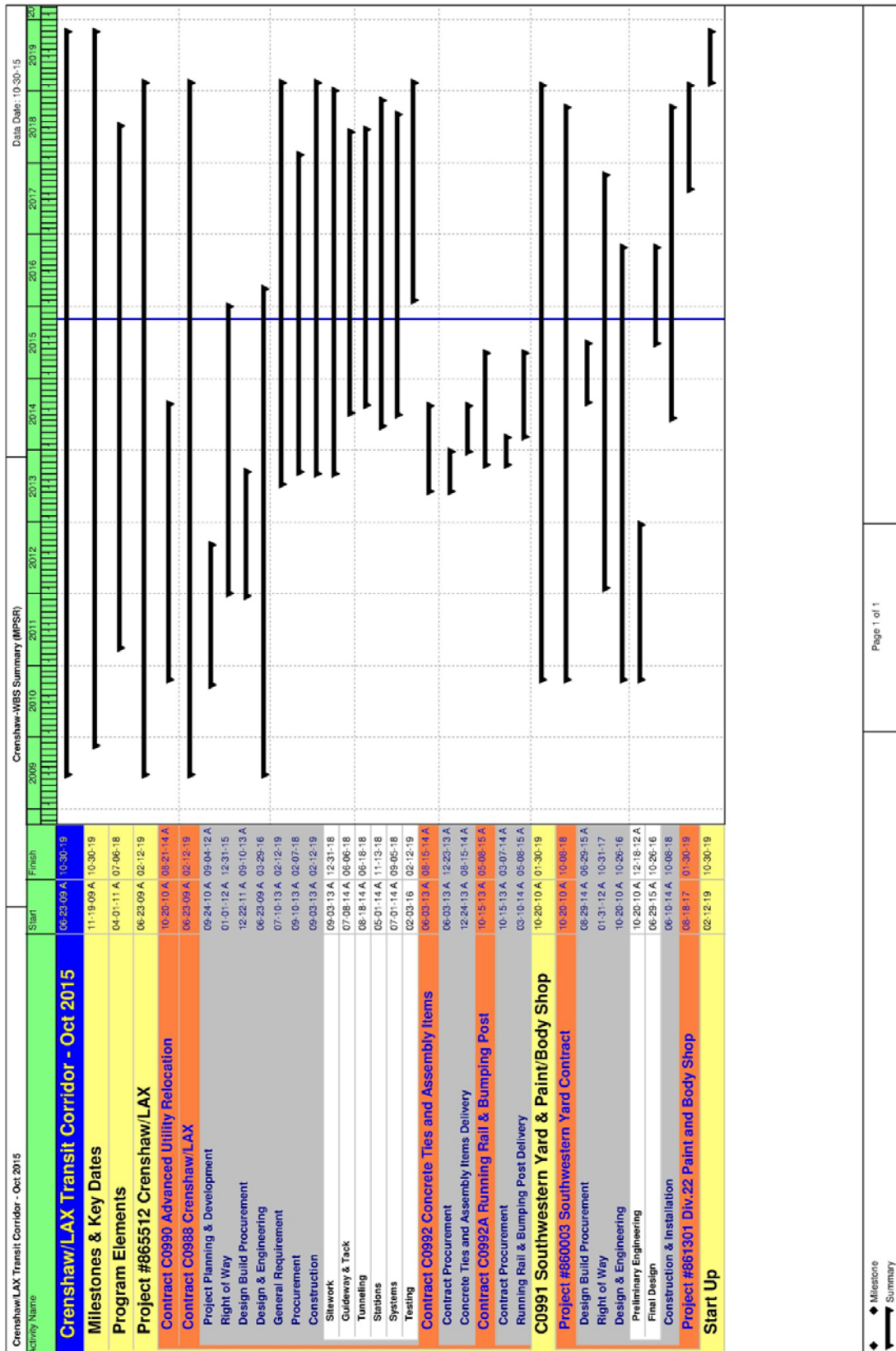
*The commencement of pre-revenue operations will be determined by Metro Operations. The design-builder will have completed Phase I systems integration testing (SIT) and Metro will have subsequently completed and passed Phase II SIT. Metro may conduct some Phase II SIT efforts concurrently with the start 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	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16
Contract C0988 Start West Shoring - Underground Structure #3	10/11/15A						
Contract C0988 Start Decking - UG #4	10/19/15A						
Contract C0988 Start MSE Wall - Aerial Structure #1	11/02/15						
Contract C0988 Start MSE Wall - 111th St Bridge	11/03/15						
Contract C0988 Complete Soldier Pile - UG #4	11/09/15						
Contract C0988 Complete Excavation & Mud Slab - Expo	11/19/15						
Contract C0988 Start Station Platform - Florence / Hindry	11/23/15						
Contract C0988 Start Station Platform - Florence / West	11/23/15						
Contract C0988 Start Base Invert Slab - Expo	11/23/15						
Contract C0988 Start MSE Wall - Manchester Bridge	12/03/15						
Contract C0988 Start Platform Level Lower Wall - Expo	12/07/15						
Contract C0988 Start Invert Slab - UG #1	12/09/15						
Contract C0988 TPSS-10 Permanent Power Drop (power for TBM)	12/09/15						
Contract C0988 Expo Station Ready for TBM Machine	12/17/15						
Contract C0988 Install TBM Muck Handling System	12/18/15						
Contract C0988 Complete Superstructure - La Brea Bridge	12/29/15						
Contract C0988 Start MSE Wall - I-405 Bridge	12/31/15						
Contract C0988 Complete 111th St Bridge Superstructure	01/13/16						
Contract C0988 Complete Excavation & Mud Slab - MLK	01/14/16						
Contract C0988 Start Assemble EPBM	01/14/16						
Contract C0988 Complete Excavation & Mud Slab - Vernon	01/15/16						
Contract C0988 Complete Excavation - UG #1	01/20/16						
Contract C0988 Submit Approved for Construction - Seg A	02/05/16						
Contract C0988 TBM SB Launch @ Expo Station	02/25/16						
Contract C0988 Start Base Invert Slab - MLK	02/29/16						
Contract C0988 Submit Approved for Construction - Seg C	03/01/16						
Contract C0988 Start East Shoring - Underground Structure #3	03/01/16						

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

# PROJECT SUMMARY SCHEDULE

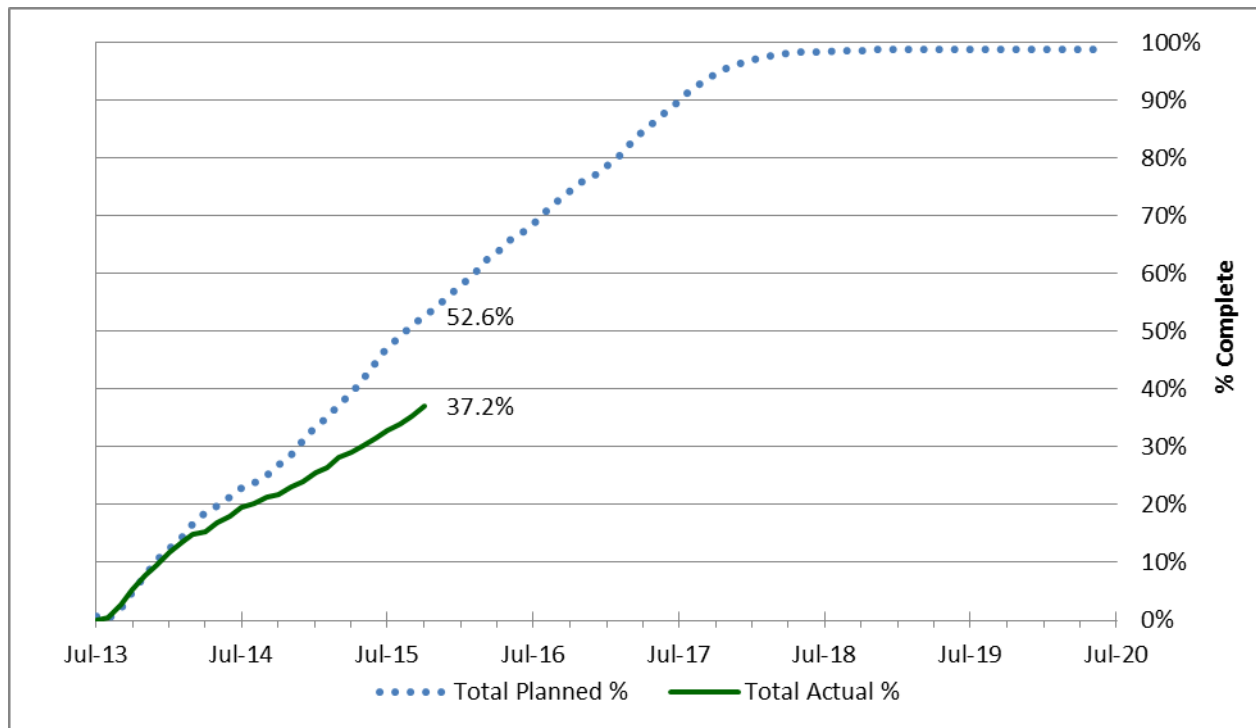


**SCHEDULE MEASUREMENTS**

	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	96.3%	0.2%	Behind Schedule
Contract C0990	100%	None	Design Completed
Contract C0991	9.5%	5.1%	Design on time
Contract C0992	100%	None	Design Completed
Contract C0992A	100%	None	Design Completed
<b>Construction Contracts Progress:</b>			
Contract C0988	23.3%	1.4%	Behind Schedule
Contract C0990	100%	0%	Substantially Completed
Contract C0991	0%	-	NTP on Jun 29, 2015
Contract C0992	100%	0%	Substantially Completed
Contract C0992A	100%	0%	Substantially Completed



## OVERALL CONSTRUCTION PROGRESS CURVE STATUS



The actual overall construction progress is 37.2% versus a planned progress of 52.6% through October 2015. The progress curves represent a composite percentage for the physical progress of work performed to complete the project's construction contracts, including the major design-build (C0988), advance utility relocation (C0990), and two equipment procurement contracts-concrete ties (C0992) and running rail (C0992A). The Southwestern Yard Contract C0991 is excluded in the composite percentage until the baseline schedule is submitted and accepted by Metro.

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	Sep-15	Oct-15	Monthly Variance
Submit Final Design Details for TBM	01/03/14	04/01/15A	04/01/15A	
Fabricate & Deliver TBM	09/22/14	11/21/14A	11/21/14A	
Procure & Deliver TBM Rolling Stock & Accessories	06/23/14	03/02/15A	03/02/15A	
TBM SB Tunnel Launch at Expo	04/28/15	02/12/16	02/25/16	-13
TBM SB Break through at Vernon	09/17/15	06/21/16	07/05/16	-14
TBM NB Tunnel Launch at Expo	10/29/15	08/04/16	08/17/16	-13
TBM NB Break through at Vernon	03/21/16	12/15/16	12/29/16	-14

**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.

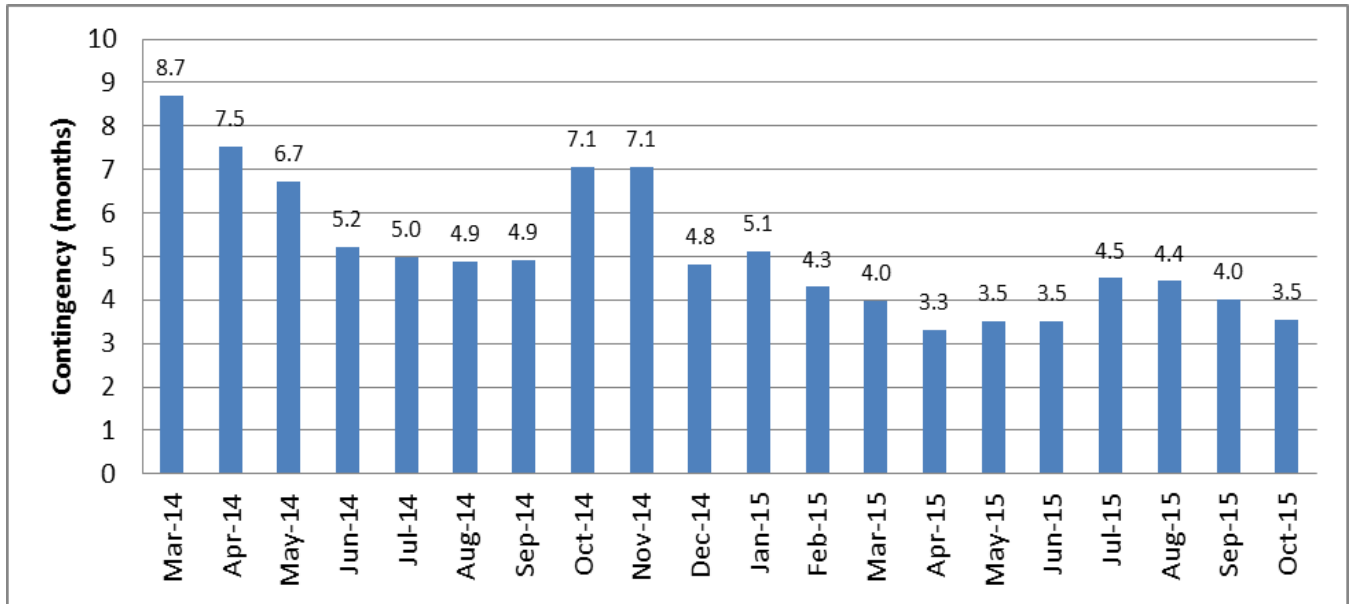
The most critical and longest path starts with the Expo Station support of excavation (SOE) and decking, excavation & invert construction; TBM mining operation; cross passage excavation, tunnel invert and walkway construction; track and system installation, while the MLK station SOE and decking, excavation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

However, WSCC in the September 2015 schedule update submittal shifted the critical longest path from Expo Station work to Park Mesa work. In October 2015 Schedule update WCSS reported an additional 42 calendar days delay at Park Mesa. Metro is reviewing for correctness of the contractor's schedule update and analyzing the schedule slip as forecast by the Design-Builder. Metro did not include the Park Mesa delay in the Project's Master Schedule.

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 Feb 22, 2019, which is 122 calendar days behind the current contract date.

### PROJECT SCHEDULE CONTINGENCY DRAWDOWN



### PROJECT SCHEDULE CONTINGENCY DRAWDOWN ANALYSIS

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

Metro this month reduced the forecast of the available project contingency by 14 calendar days. This 14 calendar days is the delay in the contractor’s schedule for the Expo/Crenshaw station construction efforts which has been the critical path since the beginning of the design-build contract (September 2013).

The total contingency remaining is 3.5 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	-	442,535,942	5,920,019	87,292,651	-	450,354,375	(2,145,626)
20	STATIONS	153,906,000	-	316,050,000	-	301,494,334	4,448,342	110,412,363	-	315,050,000	(1,000,000)
30	SUPPORT FACILITIES SOUTHWEST YARD	66,673,000	-	73,245,544	6,549,923	70,713,923	158,302	3,406,953	-	71,164,000	(2,081,544)
40	SITWORK/SPECIAL CONDITIONS	235,576,000	-	348,565,999	1,032,767	359,741,064	6,518,358	225,452,662	1,118,545	372,322,008	23,756,009
50	SYSTEMS	125,132,000	-	169,311,000	903,427	151,246,094	213,216	1,277,341	-	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>8,486,117</b>	<b>1,325,731,356</b>	<b>17,258,237</b>	<b>427,841,970</b>	<b>1,118,545</b>	<b>1,378,326,383</b>	<b>18,653,839</b>
60	RIGHT-OF-WAY	132,294,000	-	127,400,000	15,000	113,538,301	(111,475)	109,499,428	-	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	5,587,173	229,223,048	2,682,178	197,347,283	-	333,534,855	33,441,677
<b>SUBTOTAL (10-80)</b>		<b>1,545,843,000</b>	<b>-</b>	<b>1,869,265,722</b>	<b>14,088,289</b>	<b>1,750,543,606</b>	<b>19,828,939</b>	<b>746,141,102</b>	<b>1,118,545</b>	<b>1,921,451,238</b>	<b>52,185,516</b>
90	UNALLOCATED CONTINGENCY	177,157,000	-	162,734,278	-	-	-	-	(1,118,545)	110,548,762	(52,185,516)
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>14,088,289</b>	<b>1,750,543,606</b>	<b>19,828,939</b>	<b>746,141,102</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>14,088,289</b>	<b>1,776,092,994</b>	<b>19,828,939</b>	<b>771,690,490</b>	<b>-</b>	<b>2,058,000,000</b>	<b>-</b>

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 31-OCT-2015.

**PROJECT COST ANALYSIS**

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

**Original Budget:**

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

**Current Budget:**

There have been two increases in the LOP to date:

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

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

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

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

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

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

### **Current Forecast:**

The total project current forecast is \$2,058 million.

### **Commitments:**

The commitments are cumulative through October 31, 2015. The total commitments increased by \$14.0 million this period primarily due to the following:

- SCC-30 (Southwestern Yard) has increased by \$6.5 million for third party utility relocation cost associated with Los Angeles Department of Water & Power and HHS Construction, Inc.
- SCC-40 (Sitework and Special Conditions) has increased by \$1.0 million due executed modifications associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor
- SCC-50 (Systems) has increased by \$0.9 million due executed modifications associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-80 (Professional Services) has increased of \$5.6 for costs associated with Metro project administration, legal services, third party scope of work with Los Angeles City Departments, project management assistance support services with Hill International, community relations, labor compliance monitoring and environmental consultant services. The total commitment of \$229.2 million includes \$15.9 million for the Southwestern Yard 49% allocation.

The \$1,776.1 million in commitments to date represents 86.3% of the current budget.

### **Expenditures:**

The expenditures are cumulative through October 31, 2015. The total expenditures increased by \$19.8 million this period due to the following:

- SCC-10 (Guideways) has increased by \$5.9 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-20 (Stations, Stops, Terminals, Intermodal) has increased by \$4.4 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-30 (Southwestern Yard) has increased by \$0.2 million for costs associated with third party utility relocation with HHS Construction, Inc.

**PROJECT COST ANALYSIS (Continued)**

- SCC-40 (Sitework and Special Conditions) has increased by \$6.5 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor, third party scope of work with Los Angeles Department of Water & Power and Tesoro Logistics LP.
- SCC-50 (Systems) has increased by \$0.2 million due executed modifications associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-60 (Right-Of-Way) has decreased \$0.1 million primarily due accounting adjustment to non-federal funded community relations expenditures. The total expenditure of \$109.5 million includes \$52.5 million for the Southwestern Yard 49% allocation.
- SCC-80 (Professional Services) has increased by \$2.7 million for costs associated with design-build Contract C0988 Crenshaw/LAX Transit Corridor, Metro project administration, IPMO field office lease and utilities, non-federal community relations, legal services, permit fees, tunnel advisory panel services, third party coordination by Los Angeles City Departments, City of Inglewood and Los Angeles County Public Works, project management assistance support and environmental consultant services. The total expenditure of \$197.3 million includes \$2.6 million for the Southwestern Yard 49% allocation.

The \$771.7 million in expenditures to date represents 37.5% of the current budget.

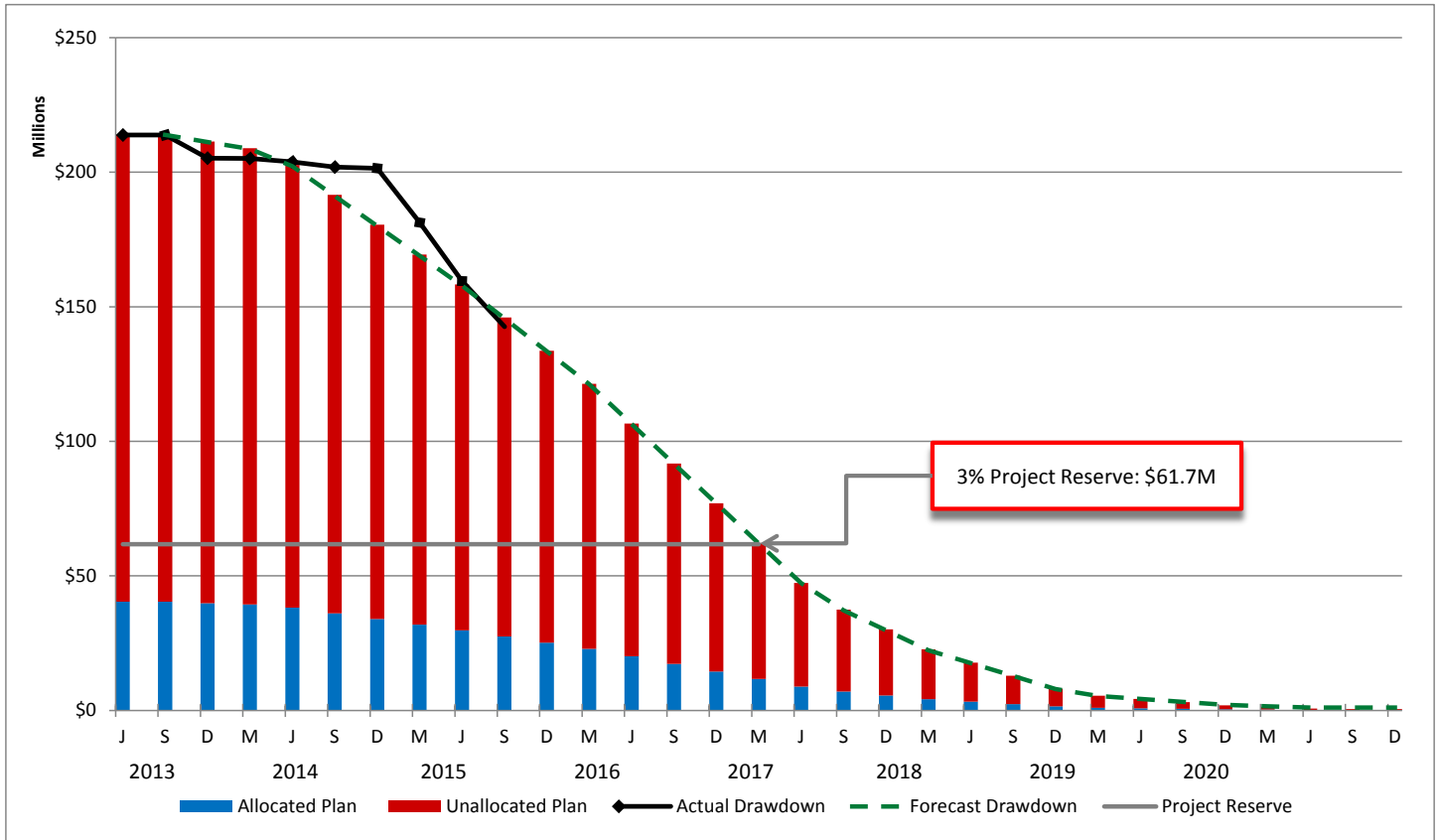
**Non-Crenshaw/LAX Transit Project Funded Scope of Work**

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		FORECAST VARIANCE
		PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
210090 FARE GATE PROJECT	2,310,000	-	2,549,000	-	2,482,746	-	172,746	-	2,549,000	239,000
460303 AIRPORT METRO CONNECTOR	366,400	-	1,007,778	-	1,025,112	-	1,007,778	-	1,025,112	658,712
500013 C/LAX LAWA SCOPE OF WORK	1,575,362	-	1,575,362	-	531,125	-	228,387	-	1,575,362	-
TOTAL	4,251,762	-	5,132,140	-	4,038,983	-	1,408,911	-	5,149,474	897,712



**PROJECT COST CONTINGENCY DRAWDOWN**



Through 31-Oct-2015

**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. Metro’s Board is to be notified when it becomes necessary to drawdown contingency below the project reserve threshold 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 \$73,040,985 or 34.2% for both allocated and unallocated contingency through October 2015.

- The unallocated contingency was decreased by \$1,118,545 due to executed contract modifications for the design-build contract C0988 Crenshaw/LAX Transit Corridor.
- Allocated contingency was decreased by \$674,131 due to executed contract modifications for the design-build contract C0988 Crenshaw/LAX Transit Corridor.

<b>PROJECT COST CONTINGENCY (through 31-Oct-2015)</b>					
<b>UNITS IN DOLLARS</b>					
	Original Contingency (Budget)	Previous Period	Current Period	To-Date	Remaining Contingency (Forecast)
Unallocated Contingency	173,500,000	(61,832,693)	(1,118,545)	(62,951,238)	110,548,762
Allocated Contingency	40,366,792	(9,415,616)	(674,131)	(10,089,747)	30,277,045
<b>Total Contingency</b>	<b>213,866,792</b>	<b>(71,248,309)</b>	<b>(1,792,676)</b>	<b>(73,040,985)</b>	<b>140,825,807</b>

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

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

(Reported Data as of September 15, 2015)

- DBE Goal – Design 20%
- Current DBE Commitment \$20,232,929 (20.81%)
- Current DBE Participation \$22,594,884 (25.04%)
- Twenty (20) Design subcontractors have been identified to-date
  
- DBE Goal – Construction 20%
- DBE Commitment \$236,116,671 (20%)
- Current DBE Commitment \$107,382,996 (9.11%)
- Current DBE Participation \$80,471,41 (24.78%)
- Sixty-three (63) Construction subcontractors have been identified to-date.

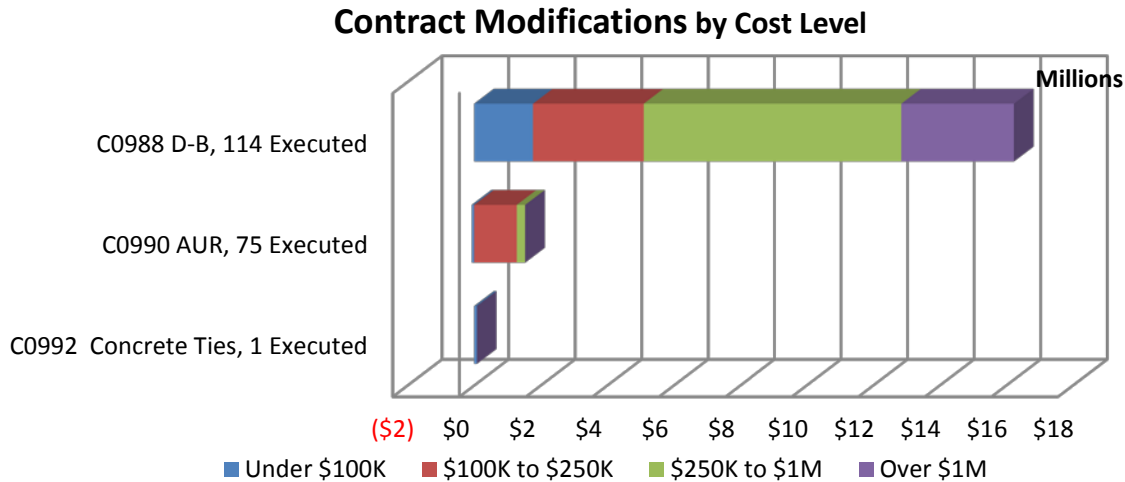
## **PROJECT LABOR AGREEMENTS (PLA) STATUS**

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

(Reported Data as of September 19, 2015)

- Targeted Worker Goal – 40.00%
- Targeted Worker Current Participation - 59.83%
  
- Apprentice Worker Goal - 20.00%
- Apprentice Worker Current Participation - 17.93%
  
- Disadvantaged Worker Goal - 10.00%
- Disadvantaged Worker Current Participation 10.18%

## SUMMARY OF CONTRACT MODIFICATIONS



	C0988	C0990	C0992
	114 Executed	75 Executed	1 Executed
Under \$100K	\$ 1,766,968	\$ (70,251)	\$ 81,738
\$100k to \$250K	\$ 3,328,217	\$ 1,280,184	\$ -
\$250K to \$1M	\$ 7,748,575	\$ 251,864	\$ -
Over \$1M	\$ 3,386,736	\$ -	\$ -
<b>Total</b>	<b>\$ 16,230,497</b>	<b>\$ 1,461,797</b>	<b>\$ 81,738</b>
<b>% of Contract</b>	<b>1.28%</b>	<b>18.68%</b>	<b>3.78%</b>

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

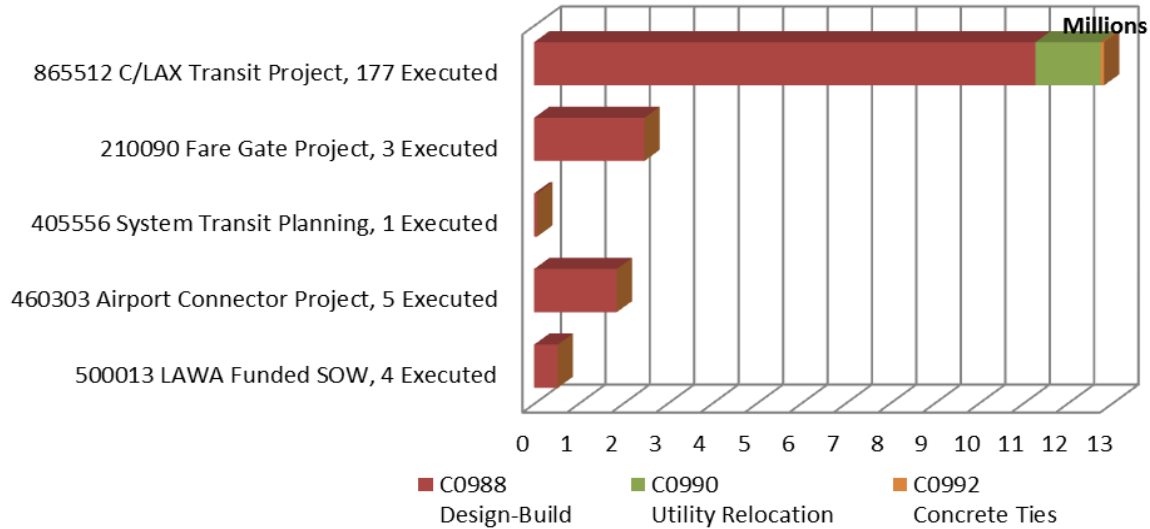
One hundred and fourteen (114) changes with a total value of \$16.23 million have been executed since execution of Contract C0988. There are additional seven (7) changes with a total value of \$0.67 million are pending the administrative approval process.

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>	101	3	1	5	4
<b>C0998 \$</b>	\$ 11,285,541	\$ 2,482,746	\$ 70,074	\$ 1,860,920	\$ 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>	177	3	1	5	4
<b>Total \$</b>	\$ 12,829,076	\$ 2,482,746	\$ 70,074	\$ 1,860,920	\$ 531,216

One hundred and seventy seven (177) changes with a total value of \$12.83 million have been executed for Project 865512 Crenshaw/LAX Transit Project. There are additional six (6) changes with a total value of \$0.60 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.

One (1) change with a value of \$70,074 has been executed for Project 405556 System Transit Planning. There is additional one (1) change with a total value of \$0.07 million pending the administrative approval process.

Five (5) changes with a value of \$1.86 million have been executed for Project 460303 Airport Connector Project.

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

**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%	30.0	56%	30.0	56%
FEDERAL - SECTION 5309 BUS CAPT	8.6	8.6	8.6	8.6	100%	8.3	97%	8.3	97%
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	263.9	545.9	100%	241.4	44%	241.4	44%
MEASURE R	661.1	661.1	502.8	661.1	100%	214.2	32%	178.8	27%
OTHER FUNDS*	52.4	187.5	13.0	0.0	0%	0.0	0%	0.0	0%
PROP C 25% HIGHWAY	148.9	189.5	3.6	105.2	56%	3.6	2%	3.6	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>1,120.0</b>	<b>1,776.1</b>	<b>86.3%</b>	<b>771.7</b>	<b>37.5%</b>	<b>700.9</b>	<b>34.1%</b>

NOTE: Expenditures are cumulative through October 2015.

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

Total Funds Anticipated based on Board approved June 2013 Revised Funding

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

## **STATUS OF FUNDS ANTICIPATED**

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

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

**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 \$263.9M has been disbursed through August 2015.

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

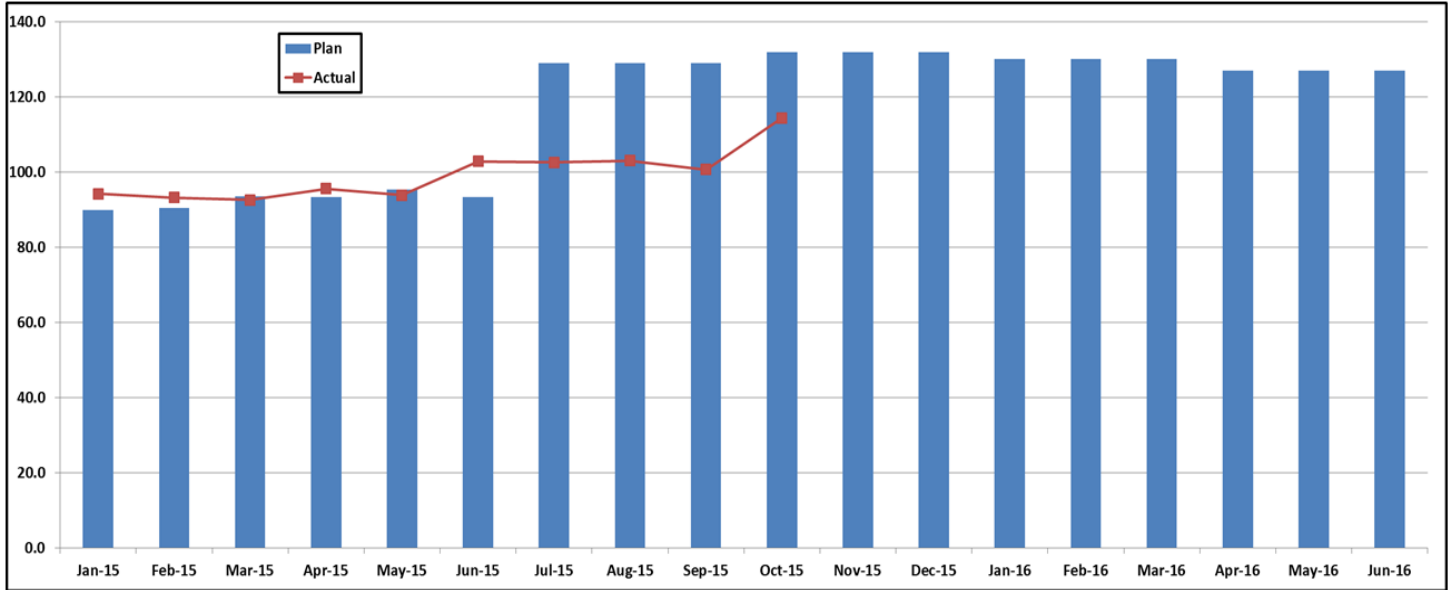
**OTHER FUNDS:** City of LA: Based on the funding agreement between Metro and the City of LA. \$13M is available for drawdown through FY2016.

**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 October 2015.

## TOTAL PROJECT STAFFING

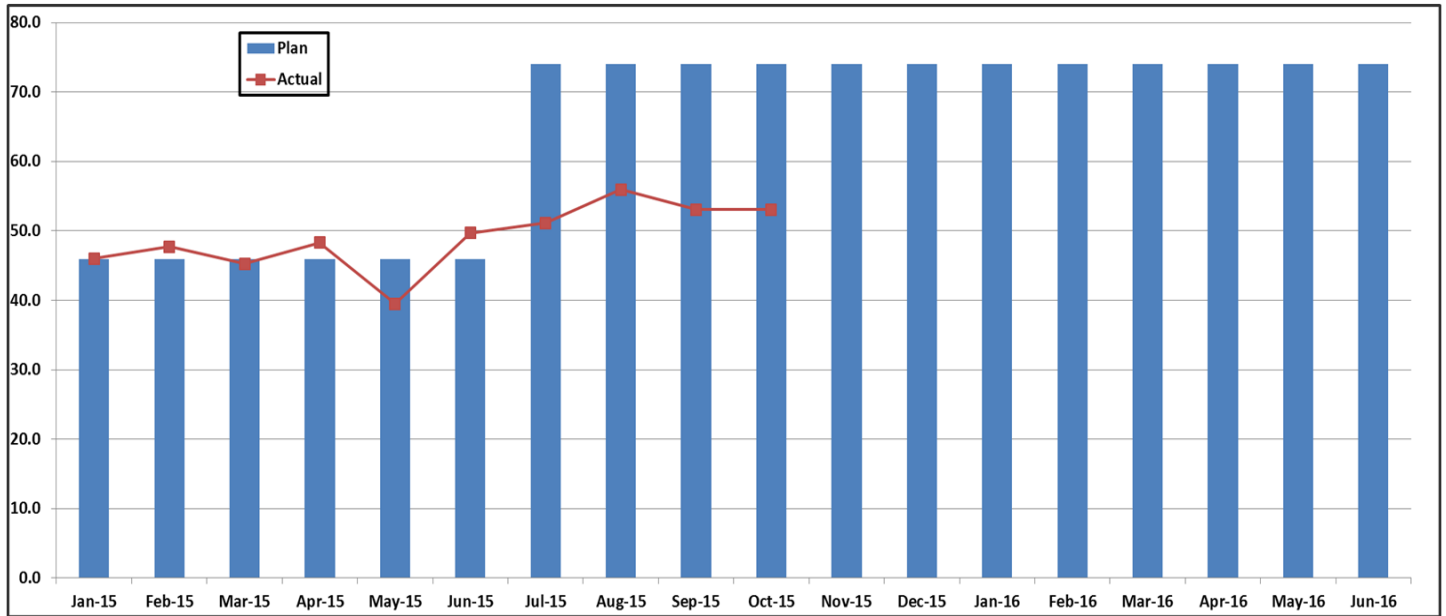
With the start of the 2016 fiscal year in July; the staffing for the Southwestern Yard Project is also included along with the Crenshaw/LAX Project for Metro and the Construction Management and Engineering Services consultants.

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

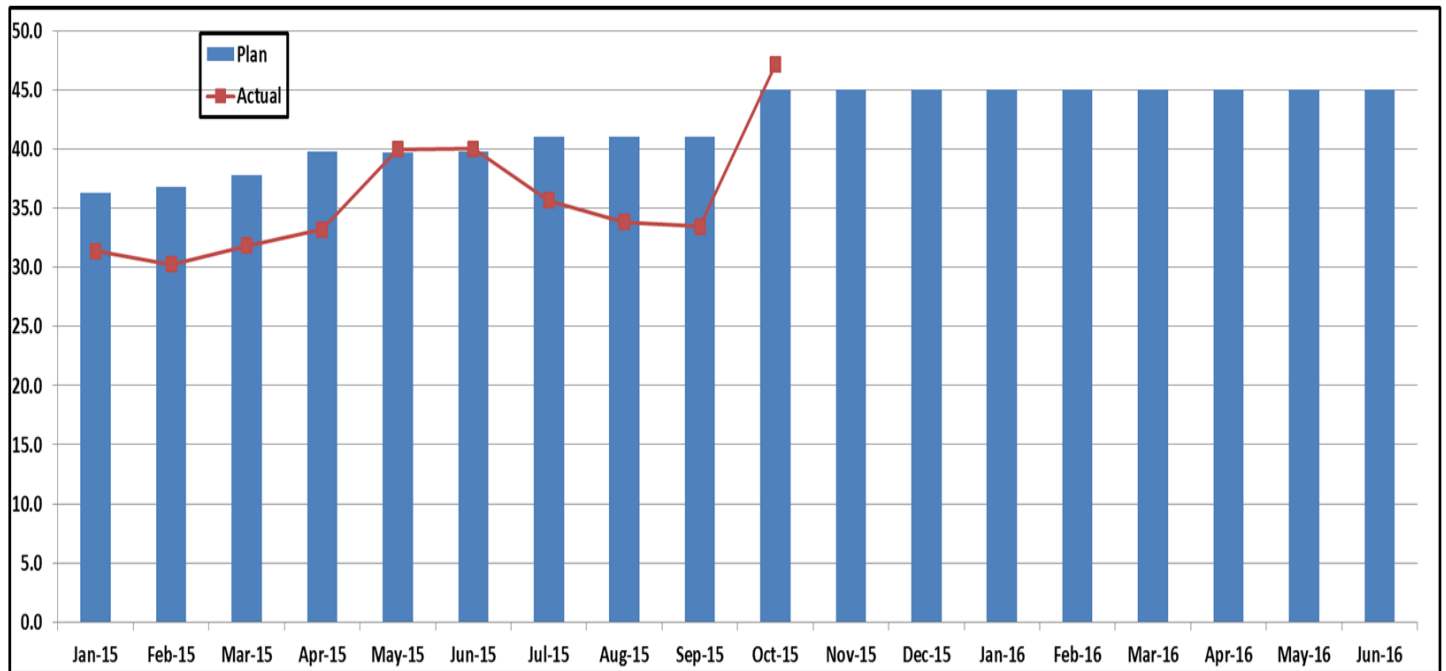
The next three charts show actual staffing versus planned staffing for the three major project participants.



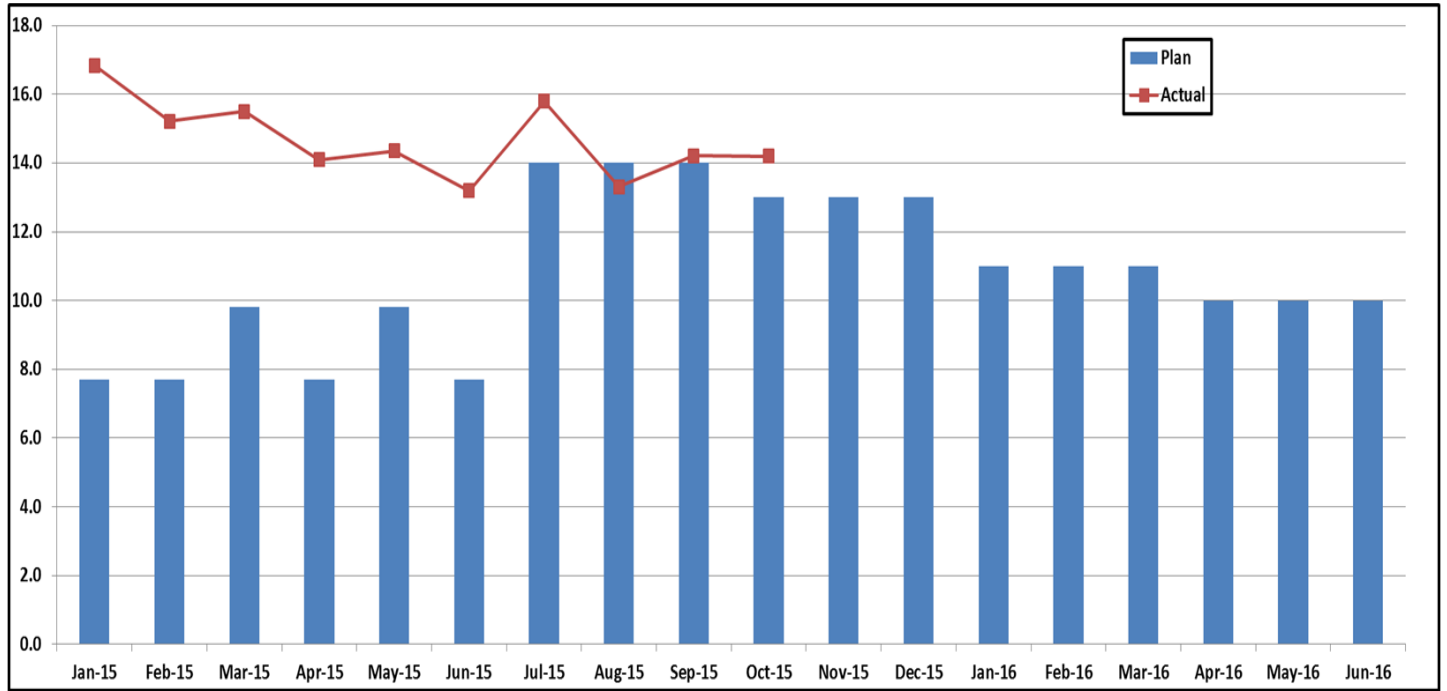
**STAFFING STATUS (Continued)  
METRO STAFFING – FTES**



**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		10
<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>31</b>
<i>Harbor Subdivision</i>									
Full Takes	16	14		15	15	8	7	12	15
Part Takes (PT or SE)	18	17	2	18	16	7	9		12
TCE	3	2	1	2	2		2	1	2
<b>Subtotal Parcels</b>	<b>37</b>	<b>33</b>	<b>3</b>	<b>35</b>	<b>33</b>	<b>15</b>	<b>18</b>	<b>13</b>	<b>29</b>
<b>Total CR/HS Parcels:</b>	<b>69</b>	<b>64</b>	<b>4</b>	<b>66</b>	<b>64</b>	<b>23</b>	<b>37</b>	<b>25</b>	<b>60</b>
<i>Southwestern Yard</i>									
Full Takes	8	8		8	8	3	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></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>6</b>	<b>4</b>	<b>7</b>	<b>8</b>
<i>C0990 C/LAX Advance Utility Relocations:</i>									
Total Parcels:	0								
<b>Total Project Parcels</b>	<b>77</b>	<b>72</b>	<b>4</b>	<b>74</b>	<b>76</b>	<b>28</b>	<b>41</b>	<b>32</b>	<b>68</b>

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

## **QUALITY ASSURANCE STATUS**

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

- Attended weekly Quality Staff Meetings with City of Los Angeles, Los Angeles Bureau of Contract Administration, HNTB, and WSCC Lead Quality personnel.
- *WSCC Quality Assurance issued four new NCR's during the month and closed out one NCR. Additionally, they issued four potential NCR's.*
- *WSCC issued one Audit Report for "As-Builts" which resulted in two Findings and Observations.*
- *ConAd issued one Notice of Noncompliance (NNC) for failure to implement adequate SWPPP Controls in a timely manner.*
- *Metro Quality approved one additional WSCC QC Inspector.*
- *Metro Quality reviewed and accepted two Inspection and Testing Instructions for Grounding/Bonding System and Hydrocarbon Resistant Membrane.*
- *Metro Independent Testing Verifications continued for Soil Compaction, Structural Backfill and Chemical Analysis of soil samples.*
- *Metro Quality visited the HCR Membrane fabricator in Anaheim to witness testing procedures.*
- *Participated in Construction Work Package Reviews and related Readiness Reviews for Green Line Counterweight Removal, Underground Station Concrete/Plumbing/SOE, Ballast Retainer, At-Grade Station Concrete, HDPE Elevator Casing and the Faith Bible pedestrian Underpass activities.*
- *The Annual Metro Audit of WSCC Project activities concluded with a Close-Out Meeting. The formal Audit Report will be issued in November.*

## **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
  - Noise Control Plan for General Site Works/MSE Walls
- Continue to document compliance with the Project Mitigation Monitoring and Reporting Plan (MMRP).
- 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.
- *Reviewed weekly Groundwater Monitoring Reports from the groundwater monitoring wells at Expo Station.*
- *Obtained a UST closure permit from the Los Angeles County Department of Public Works for the storage tank at Faithful central Bible Church.*
- *The Environmental Consultant for Parcel CR-3701 began conducting a pilot test for the Groundwater Remediation System.*
- *The City of Los Angeles BSS requested that one Phase 1 relocated tree be removed.*
- Coordinated additional Phase 2 soil investigation at Victoria Yard and parcel CR-2802.
- Coordinated removal 10" Tesoro Oil pipeline in conflict with Vernon Station and UG #4.

## **CONSTRUCTION RELATIONS STATUS**

- *Held a meeting with local businesses impacted by the UG4 40-Day Crenshaw Blvd. Closure to discuss reduced customers and income, excessive dust and lack of compensation to shopkeepers.*
- *Extensive outreach with businesses, homeowner associations, neighborhood councils, chambers, churches and block clubs precluded the closure of Crenshaw Blvd.*
- *Received numerous complaints about cut-through traffic on McClung Drive and Victoria Avenue and requested additional traffic patrols and enforcement from the CHP and La County Sherriff's.*
- *Held a meeting with local residents to identify solutions to cut-through traffic issues including better signage and Traffic Control Officers.*
- *Worked with LADWP to ensure that water service was available for Good Shepard Homes, Dulan's Restaurant and Living the Word Church during a three phase water service interruption to replace water lines.*
- *Extensive outreach to neighborhood councils and community organizations preceded the implementation of UG3 Park Mesa Traffic Reconfiguration.*
- *Worked closely with the West Angeles villas to monitor and mitigate construction related issues at Park Mesa.*
- *A CLC Workgroup Meeting was held in October to discuss Quality of Life, Community Engagement and Economic Development.*
- *TBM Artwork and Naming contest ended October 1<sup>st</sup>. Coordinating a date for press event.*

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

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

## **SAFETY & SECURITY STATUS**

- Participated in weekly progress meetings with WSCC's Management and Construction Management Team to discuss safety/security 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 Sweeps to enhance overall safety awareness. Several safety hazards observed and corrected immediately.
- *Conducted All Hands Safety/Security Meeting to discuss WSCC's/Metro's Construction Safety Teamwork Incident Reporting protocol, WSCC's Access and Egress update and Metro Board WSCC Safety update.*
- *Participated in WSCC's Executive Safety Committee Meeting and Executive Project Site Safety Walks.*
- Attended Walsh/Shea's Safety Tail Gate Huddle Meetings at the Expo, Vernon and Bellanca Yards.
- *Attended Walsh/Shea's Readiness Review Meeting for Expo Station, West Station, UG #3, Segment B1 Guide Way and Green-Line.*
- *Walsh/Shea reported 127,501 work hours and one recordable incident for the month of October 2015. Total Project-to-Date work hours are 1,757,377 and fifteen recordable incidents. The Project Incident Rate is 1.7. 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 should be completed by December 2015.*



## 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.


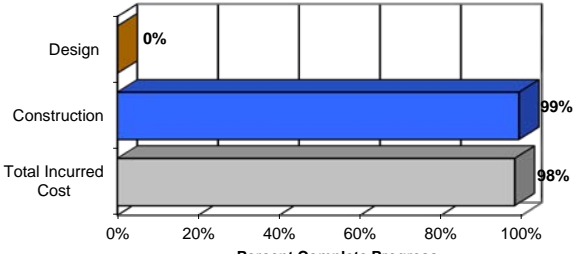
**CHRONOLOGY OF EVENTS (Continued)**

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></p> <p><b>Status as of Oct 30, 2015</b></p> 																																			
<p><b>Progress/Work Completed:</b></p> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>- Submitted Segment A 85% Street Lighting Plans.</li> <li>- Submitted Segment B Final Design on Local Streets.</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>- Continued potholing along the Grade Crossing, UG #3, Park Mesa &amp; UG #4.</li> <li>- Continued geotechnical monitoring at Vernon, MLK, Expo, UG#1 &amp; UG#3.</li> <li>- Continued with SWPPP Implementation – Segments A, B &amp; C.</li> <li>- Commenced grounding grid, mud slab, waterproofing &amp; protective slab construction at Expo Station.</li> <li>- Continued soil excavation at Vernon, MLK &amp; Expo Station.</li> <li>- Continued SOE installation at Vernon &amp; MLK Station.</li> <li>- Commenced Chemical Grouting for TBM Break-out</li> <li>- Continued the TBM assembly at the Bellanca Yard.</li> <li>- Completed Jet Grouting for Cross Passage #1.</li> <li>- Continued soldier pile installation &amp; water line relocation at UG #4.</li> <li>- Commenced decking installation at UG#4.</li> <li>- Commenced SOE Installation at UG#3.</li> <li>- Completed MSE wall leveling pad &amp; falsework at La Brea bridge.</li> <li>- Continued superstructure work at the La Brea bridge &amp; Century Bridge.</li> <li>- Continued fine grading of the segment B1 guideway.</li> <li>- Continued OCS foundation construction on segment B1.</li> <li>- Completed MSE wall leveling pad work &amp; footprint excavation at Century.</li> <li>- Continued bracing installation at UG#1.</li> <li>- Continued abutment stem wall at the 111th Bridge.</li> <li>- Completed abutment stem &amp; column work at Green Line Tie-In.</li> <li>- Commenced Falsework construction at the Green Line Tie-In.</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>- Contaminated materials (weathered gasoline with high levels of TPH) discovered at Expo site.</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></p> <p>Contractor's Oct 2015 schedule update indicates Milestone 1 - Contract Substantial Completion is 122 calendar days behind the current contract date. Full delay would have been 239 calendar days. However, Metro is reviewing and analyzing the extraordinary delay at Park Mesa and only included the additional 14 calendar days of delay at Expo.</p>	<p><b>Cost Assessment:</b></p> <p>The current construction contract cost forecast is \$1,287.51 million and is within the Board authorized budget.</p> <p>The Contractor submitted their 26th payment application in the approved amount of \$17,266,167.99.</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>1981</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td>780</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:	1981	5. Elapsed Time from NTP:	780	<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;">13.05</td> </tr> <tr> <td>3. Approved Change Orders:</td> <td style="text-align: right;">1.83</td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td style="text-align: right;">1,287.51</td> </tr> <tr> <td>5. Incurred Cost:</td> <td style="text-align: right;">478.81</td> </tr> </table>	1. Award Value:	1,272.63	2. Executed Modifications:	13.05	3. Approved Change Orders:	1.83	4. Current Contract Value (1 + 2 + 3):	1,287.51	5. Incurred Cost:	478.81															
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**CONTRACT C0990 STATUS**  
*Crenshaw/LAX Advanced Utility Relocations*

<p><b>PE Design Contractor: Hatch Mott MacDonald (HMM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Metro Builders and Engineers Group LTD</b></p>	<p><b>Contract No.: C0990</b> <b>Status as of Oct 30, 2015</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*

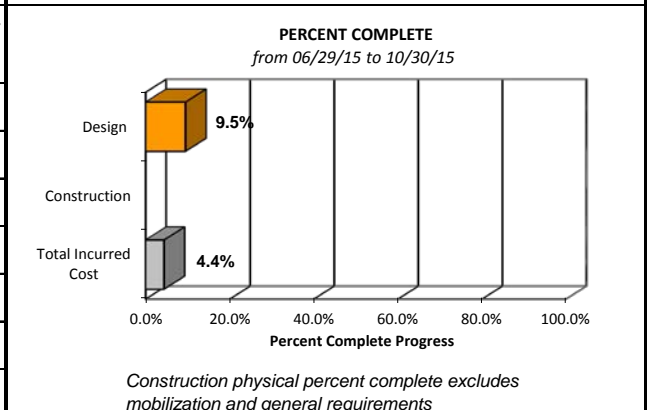
<b>PE Design Contractor: Hatch Mott MacDonald (HMM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Hensel Phelps / Herzog JV</b>	<b>Contract No.: C0991</b> <b>Status as of Oct 30, 2015</b>	
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<b>Progress/Work Completed:</b> - Contractor is working on early contract required submittals. - Initial 120 Day schedule has been approved. - IPMO location is West Century Blvd and move in is projected for November 2015. - Initial pre-construction meeting held with key stakeholders. - Design workshop #1 meeting was held with key stakeholders. - Design submittal 60% of APDU 1 is due in early November and this will cover civil and early submittals.	<b>Areas of Concern:</b> - None.
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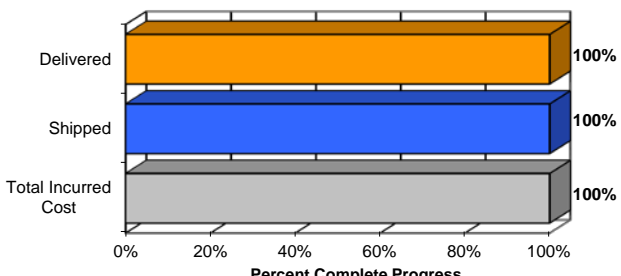
<b>Schedule Assessment:</b> - Change Order # CO-0004 issued and contract duration extended by 90 calendar day. New substantial completion date is 01/30/2019.	<b>Cost Assessment:</b> - Contract to Hensel Phelps / Herzog JV was awarded for \$172.3 million. - Second pay application is approved by Metro. - Third pay application is still pending their final submittal.
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<b>Schedule Summary:</b> 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: 123	<b>Cost Summary:</b> <span style="float: right;"><b>\$ In millions</b></span> 1. Award Value: 172.30 2. Executed Modifications: 0.00 3. Approved Change Orders: 0.00 4. Current Contract Value (1 + 2 + 3): 172.30 5. Incurred Cost: 7.53
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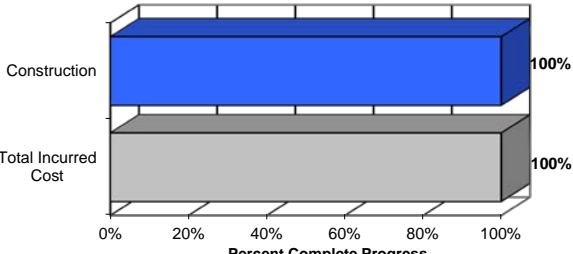
Milestones	Original Contract	Current Contract	Forecast	Calendar Day Variance
MS#1 Yard and Main Shop Design Completion	26-Oct-16	26-Oct-16	26-Oct-16	0
MS#2 Main Shop Communication Room Completion	15-Jan-18	16-Apr-18	16-Apr-18	0
MS#3 Main Shop Substantial Completion	30-Apr-18	30-Jul-18	30-Jul-18	0
MS#4 Southwestern Yard Substantial Completion	31-Oct-18	30-Jan-19	30-Jan-19	0



**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></p> <p><b>Status as of Oct 30, 2015</b></p> 																																			
<p><b>Progress/Work Completed:</b></p> <ul style="list-style-type: none"> <li>- All 19,936 concrete ties have been received onsite by the design-builder (Contract C0988).</li> <li>- Contract is in close-out pending resolution of any Buy America issues.</li> </ul>	<p><b>Areas of Concern:</b></p> <ul style="list-style-type: none"> <li>- Compliance with Buy America requirement under review by FTA.</li> </ul>																																			
<p><b>Schedule Assessment:</b></p> <p>Metro has agreed to grant a 15 calendar day time extension as a result of limited access to the yard due to the operation of Burlington Northern Santa Fe (BNSF), which was beyond the reasonable control of RCTI.</p> <p>All concrete ties have been delivered to job site by August 15, 2014.</p>	<p><b>Cost Assessment:</b></p> <p>The current construction contract cost is \$2.25 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">12/10/13</td> </tr> <tr> <td>2. Notice to Proceed:</td> <td align="right">12/23/13</td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td align="right">220</td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td align="right">235</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td align="right">235</td> </tr> </table>	1. Date of Award:	12/10/13	2. Notice to Proceed:	12/23/13	3. Original Substantial Completion Duration:	220	4. Current Substantial Completion Duration:	235	5. Elapsed Time from NTP:	235	<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">2.16</td> </tr> <tr> <td>2. Executed Modifications:</td> <td align="right">0.09</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">2.25</td> </tr> <tr> <td>5. Incurred Cost:</td> <td align="right">2.25</td> </tr> </table>	1. Award Value:	2.16	2. Executed Modifications:	0.09	3. Approved Change Orders:		4. Current Contract Value (1 + 2 + 3):	2.25	5. Incurred Cost:	2.25															
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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 Oct 30, 2015</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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## CONSTRUCTION PHOTOGRAPHS



**UG#1** - Struts and wales being installed per plan. Excavation continues down to tier 2



**AVIATION/CENTURY** - MSE (Wall 3 60L&R): Precast Panel erection

## CONSTRUCTION PHOTOGRAPHS (Continued)



AVIATION/CENTURY - Panoramic view from overhang



I-405 - Abutment 1 CIDH placement

**CONSTRUCTION PHOTOGRAPHS (Continued)**



**LA BREA BRIDGE - MSE panel erection**



**B1 GUIDEWAY – MSE Wall Panel erection and galvanized strap placement**

### CONSTRUCTION PHOTOGRAPHS (Continued)



**UG#4** – Asphalt demo and excavation for decking operations



**LEIMERT PARK STATION**– Overall view looking south from north head wall

**CONSTRUCTION PHOTOGRAPHS (Continued)**



**LEIMERT PARK STATION** – Excavation operation looking north



**MARTIN LUTHER KING JR. STATION** – Tier 2 SOE strut installation



### CONSTRUCTION PHOTOGRAPHS (Continued)



**CRENSHAW/EXPOSITION STATION – TBM Break-out Chemical grouting operation**



**CRENSHAW/EXPOSITION STATION – Installation of HCR membrane over Geotextile**

**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	PREVIOUS	PERIOD	TO DATE	
10	GUIDEWAYS	0	0	0	0	0	0	0	0	0	0	0
20	STATIONS	0	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	86,889,531	0	86,889,531	1,699,532
40	SITWORK/SPECIAL CONDITIONS	35,932,000	0	38,273,000	6,549,923	37,722,923	158,302	3,448,228	38,273,000	0	38,273,000	0
50	SYSTEMS	25,784,616	0	32,991,000	0	32,991,000	0	0	32,991,000	0	32,991,000	0
(10-50)	CONSTRUCTION	147,263,451	0	156,453,999	6,549,923	157,246,618	158,302	3,448,228	158,153,531	0	158,153,531	1,699,532
60	RIGHT-OF-WAY	99,910,000	0	100,000,000	0	96,366,457	(5,130,000)	90,953,927	100,000,000	0	100,000,000	(0)
70	VEHICLES	0	0	0	0	0	0	0	0	0	0	0
80	PROFESSIONAL SERVICES	35,601,095	0	33,639,631	1,586,615	20,620,593	358,455	6,724,858	31,815,199	0	31,815,199	(1,824,432)
90	PROJECT CONTINGENCY	13,659,732	0	17,106,370	0	0	0	0	17,231,270	0	17,231,270	124,900
<b>TOTAL</b>		<b>296,434,278</b>	<b>0</b>	<b>307,200,000</b>	<b>8,136,538</b>	<b>274,233,668</b>	<b>(4,613,243)</b>	<b>101,127,013</b>	<b>307,200,000</b>	<b>0</b>	<b>307,200,000</b>	<b>(0)</b>
<b>C0991 PAINT &amp; BODY SHOP PROJECT</b>												
	DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST			FORECAST VARIANCE
			PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PREVIOUS	PERIOD	TO DATE	
	861301 DIV 22 PAINT & BODY SHOP	11,000,000	0	11,000,000	(0)	6,915,331	(0)	193,047	11,000,000	0	11,000,000	0
	<b>PROJECT GRAND TOTAL</b>	<b>307,434,278</b>	<b>0</b>	<b>318,200,000</b>	<b>8,136,538</b>	<b>281,149,000</b>	<b>(4,613,243)</b>	<b>101,320,061</b>	<b>318,200,000</b>	<b>0</b>	<b>318,200,000</b>	<b>(0)</b>

**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:** The project forecast of \$318.2 million is maintained for month ending October 31, 2015. There is no forecast variance between the total budget and total forecast. There are no changes in the current forecast line items.

**Commitments:**

The commitments are cumulative through October 31, 2015.

Total commitments increased by \$8.1 million for this period due to adjustment between the 49% of project 865512 and 51% of project 860003.

The \$281.1 million in commitments to date represents 88.4% of the current budget.

**Expenditures:**

The expenditures are cumulative through October 31, 2015.

The total expenditures decreased by \$4.6 million for this period due to adjustments between 49% of 865512 and 51% of 860003.

The \$101.3 million in expenditures to date represents 31.8% of the current budget.

**APPENDIX  
COST AND BUDGET TERMINOLOGY**

**Project Cost  
Descriptions -**

ORIGINAL BUDGET	The Original Project Budget as established by the Metropolitan Transportation Authority (Metro) Board on October 27, 2011.
CURRENT BUDGET	The Original Budget plus all budget amendments approved by formal Metro Board action. Also referred to as Approved Budget.
COMMITMENTS	The total of actual contracts awarded, executed change orders or amendments, approved work orders of Master Cooperative Agreements, offers accepted for purchase of real estate, and other Metro actions which have been spent or result in the obligation of specific expenditures at a future time.
EXPENDITURES	The total dollar amount of funds expended by Metro for contractor or consultant invoices, third party invoices, staff salaries, real estate and other expenses that is reported in Metro's Financial Information System (FIS).
CURRENT FORECAST	The best estimate of the final cost of the project when all checks have been issued and the project is closed out. Current Forecast is composed of actual costs incurred to date, the best estimate of work remaining and a current risk assessment for each budgeted cost item.

**Cost Report by Element Descriptions -**

CONSTRUCTION	Includes construction contracts. Cost associated with Guideways, Stations, Southwestern Yard, Sitework/Special Conditions and Systems.
RIGHT-OF-WAY	Includes purchase cost of parcels, easements, right-of-entry permits, escrow fees, contracted real estate appraisals and tenant relocation.
VEHICLES	Includes the purchase of LRT vehicles and spare parts for the project.
PROFESSIONAL SERVICES	Includes design engineering, project management assistance, construction management support services, legal counsel, agency staff costs, and other specialty consultants.
CONTINGENCY	A fund established at the beginning of a project to provide for anticipated but unknown additional costs that may arise during the course of the project.
PROJECT REVENUE	Includes all revenue receivable to the Metro as a direct result of project activities. This includes cost sharing construction items, insurance premium rebates, and the like.

**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
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
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
CSM	Cutter Soil Mixing
CSP	Cost and Schedule Proposal
CSPP	Construction Safety Phasing Plan

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

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
HMM	Hatch Mott MacDonald
HNTB	Howard, Needles, Tammen and Bergendoff
HPH	Hensel Phelps/Herzog Joint Venture

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

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
MOU	Memorandum of Understanding
MPS	Master Program Schedule
MPSR	Monthly Project Status Report
MSDS	Material Safety Data Sheet
MSF	Maintenance & Storage Facility

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

N/A	Not Applicable
NAVAIDS	Navigational Aid Systems
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
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
POD	Project Oriented Discussions
PQPM	Project Quality Program Manual
PR	Project Report
PSR	Project Study Report
	Public Transportation Modernization, Improvement and Service
PTMISEA	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



**APPENDIX  
LIST OF ACRONYMS (Continued)**

RFMP	Rail Fleet Management Plan
RFP	Request For Proposals
RFQ	Request For Qualifications
RHA	Risk Hazard Analysis
RLPE	Red Light Photo Enforcement
ROC	Rail Operations Center
ROD	Record Of Decision
ROE	Right of Entry
ROM	Rough Order of Magnitude
ROW	Right-Of-Way
RPZ	Runway Protection Zone
RSD	Revenue Service Date
RSTP	Regional Surface Transportation Program
RTIP	Regional Transportation Improvement Program
RWQCB	Regional Water Quality Control Board
SAV	Stand Alone Validator
SCADA	Supervisory Control and Data Acquisition
SCAQMD	Southern California Air Quality Management District
SCC	Standard Cost Category
SCE	Southern California Edison
SCG	Southern California Gas Company
SCRRA	Southern California Regional Rail Authority
SHA	State Highway Account
SHPO	State Historic Preservation Office
SIT	System Integration Testing
SOE	Support of Excavation
SOP	Standard Operating Procedure
SOQ	Statement of Qualification
SOV	Schedule Of Value
SOW	Statement Of Work
SPAS	Specific Plan Amendment Study
SPP	Special Permitting Process
SSMP	Safety and Security Management Plan
STB	Surface Transportation Board
STIP	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

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

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 System
TSC	Traffic Signal Conduit
TSL	Temporary Street Lighting
TSM	Transportation System Management
TVA	Threat Vulnerability Analysis
TVM	Ticket Vending Machine
UBC	Uniform Building Code
UFS	Universal Fare System
UG	Underground
UOM	Unit of Measure
USDOT	United States Department Of Transportation
UST	Underground Storage Tank
VE	Value Engineering
WBS	Work Breakdown Structure
WP	Work Package
WSCC	Walsh/Shea Corridor Constructor
WTCP	Work Traffic Control Plan
YOE	Year of Expenditure