

# Crenshaw/LAX Transit Project



Metro<sup>®</sup>

# **CRENSHAW/LAX TRANSIT PROJECT**

## **QUARTERLY PROJECT STATUS REPORT**

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

**SEPTEMBER 2017**

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## **PROJECT OVERVIEW**

### **Contract Closeout**

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

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

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

**Design- Build Contract C0988 (Alignment)** – The design-builder, Walsh-Shea Corridor Constructors (WSCC) continues remaining base final design and change work. Construction efforts by the design-builder continued along all major areas.

*Construction efforts by the design-builder continued along all areas of the alignment. The contractor continues placing concrete within all five cross passages between the twin tunnels. Work continues on placing concrete walkway for the twin tunnels.*

The three underground stations remain at various levels of completion. Work continues on remaining platform level walls, concourse floor and concourse walls. Two of the four at-grade stations structure concrete placements are substantially completed with entrance and finish work to commence in the near future. The aerial station structure concrete placement is substantially complete.

The underground shallow tunnel structure in front of the south runways of LAX along Aviation Boulevard is substantially completed. The shallow tunnel box structure south of Leimert Station and the shallow tunnel box structure south of Park Mesa Heights are both in various stages of construction.

All six bridge superstructures are substantially complete with the exception of the finishes and systems installations. Various construction efforts continue on the roadway section near or within the Park Mesa Heights area.

*Trackwork installation is continuing in areas available along the southern area of alignment. The contractor has completed construction of six of 17 at-grade crossings.*

**Design- Build Contract C0991 Southwestern Yard (Division 16)** – The design-builder, Hensel Phelps / Herzog JV (HPH) substantially completed final design and submission of submittals required for construction on October 26, 2016. Design for the future expansion of the main shop was issued as a preliminary engineering package for Metro's use in the future.

## **PROJECT OVERVIEW (Continued)**

*The contractor is ahead of schedule by two months. The contractor completed the main shop structural steel erection. The contractor commenced metal decking installation, CMU wall installation, and exterior framing. The material storage building slab on grade was placed, structural steel erected and the contractor began installation of exterior skin framing. Construction has commenced on the car wash and car cleaning footings and grade beams. Work continued on electrical, communication duct banks in phase I and II, Sewer, storm drain, fire water lines and dry wells. Construction also started on the car wash footings, grade beams. Continued delivery of turn outs and concrete ties for the yard lead tracks and completed the rail flash welding operation.*

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

Metro added in January 2016, two full takes and five part-takes/TCE's required for the construction of the Project. There are now a total of 79 parcels (eight have been decertified). There are 37 full takes, 27 partial takes and 15 temporary construction easements (TCE's). *There have been 76 parcels acquired through September 2017.* Thirty-six full takes, 26 part-takes and 14 TCE's have been provided to the design-builder WSCC.

### **Systems**

Metro staff initiated a study to explore possible alternative layouts to accommodate the central control functions associated with new project needs, such as Crenshaw/LAX project, within the existing ROC facility as an interim measure. Metro has determined that the best course of action is to expand the existing functional operations at the ROC to support the new five new rail lines and extensions including Foothill Ext., Expo II, Crenshaw/LAX, Regional Connector and Purple Extension Projects. The existing ROC service control and closed circuit television monitoring areas are being expanded and reconfigured for each new rail line extension. The supporting facilities and electrical\communication systems are also expanded and upgraded accordingly to suit the needs of the growing Metro operations. The ROC Reconfiguration Plan will be updated to suit the central control needs of each upcoming new rail line extension. Metro will prepare a design update for the Crenshaw/LAX Project. All work for the ROC is planned to be completed concurrently with the C0988 design-builder scope work to ensure continuity of the systems effort.

### **Program Management**

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

## **PROJECT OVERVIEW (Continued)**

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.

Although there is no change to the Total LOP Current Budget there was a reallocation for changes to the SCC elements within the Current Budget in April 2017. The reallocation was required due to the draw down to date of the SCC 90 Allocated Contingency for changes issued to the design-build contractor, additional relocations of utilities by third parties, additional legal services and special services as well as an increase in professional services for construction and project management oversight.

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 and state funding 91.3%, (includes Measure R TIFIA Loan), and federal funding is 8.7%.

*The project commitments thru September 2017 are \$1,977.5 million or 96.1% of the Current Budget. The project expenditures thru September 2017 are \$1,437.0 million or 69.8% of the Current Budget.*

The current period expenditures are for Contract C0988 design-builders monthly construction costs and professional services costs such as construction management and administrative staffing. The expenditures to date also include the Southwestern Yard expenditures that are part of the 49% cost allocation share that the Project is responsible for paying for. The 51% cost allocation is reported within another Metro internal project number. The total costs for the Southwestern Yard project is included in the Appendix.

## **PROJECT OVERVIEW (Continued)**

In December 2016, the C0988 design-builder submitted a “Completion Schedule” which was subsequently reviewed and approved by Metro on December 16, 2016. This schedule represents a re-baseline of WSCC’s Contract Schedule which reflects their means and methods for completing construction and testing during the remaining years with a commitment to complete on time to support Metro’s planned revenue operations in the fall of 2019. The approved Completion Schedule resets WSCC’s Contract Milestone #1 Substantial Completion to May 1, 2019.

*WSCC in their September 2017 Schedule Update forecasts a 19 calendar day delay to WSCC’s Contract Milestone #1 Substantial Completion date of May 1, 2019. This is an additional four-calendar day delay from last month’s forecast. WSCC continues to explore mitigation opportunities along the alignment where the current impact of 19 days can be mitigated.*



## **MANAGEMENT ISSUES**

**Concern No. 1:** Timely future reviews of WSCC final design submittals by City of Los Angeles.

**Status/Action** There are a few remaining final design submittals that are required to be submitted by the Contractor for City of Los Angeles review. Metro meets with the Contractor several times a week on design submittal status and works with the Contractor and City to resolve outstanding issues. Metro will continue to take action and strictly monitor the review comments from the agencies and work with the contractor to ensure submittals are coordinated, quality checked and submitted within necessary timeline for reviews.

**Concern No. 2:** Design-builders construction schedule

**Status/Action** WSCC submitted a "Completion Schedule" which was subsequently reviewed and approved by Metro on December 16, 2016. This schedule represents a re-baselining of WSCC's Contract schedule which reflects their means and methods for completing construction and testing during the next three years with a commitment to complete on time to support Metro's planned revenue operations in the fall of 2019. The approved Completion Schedule resets WSCC's Contract Milestone #1 Substantial Completion to May 1, 2019.

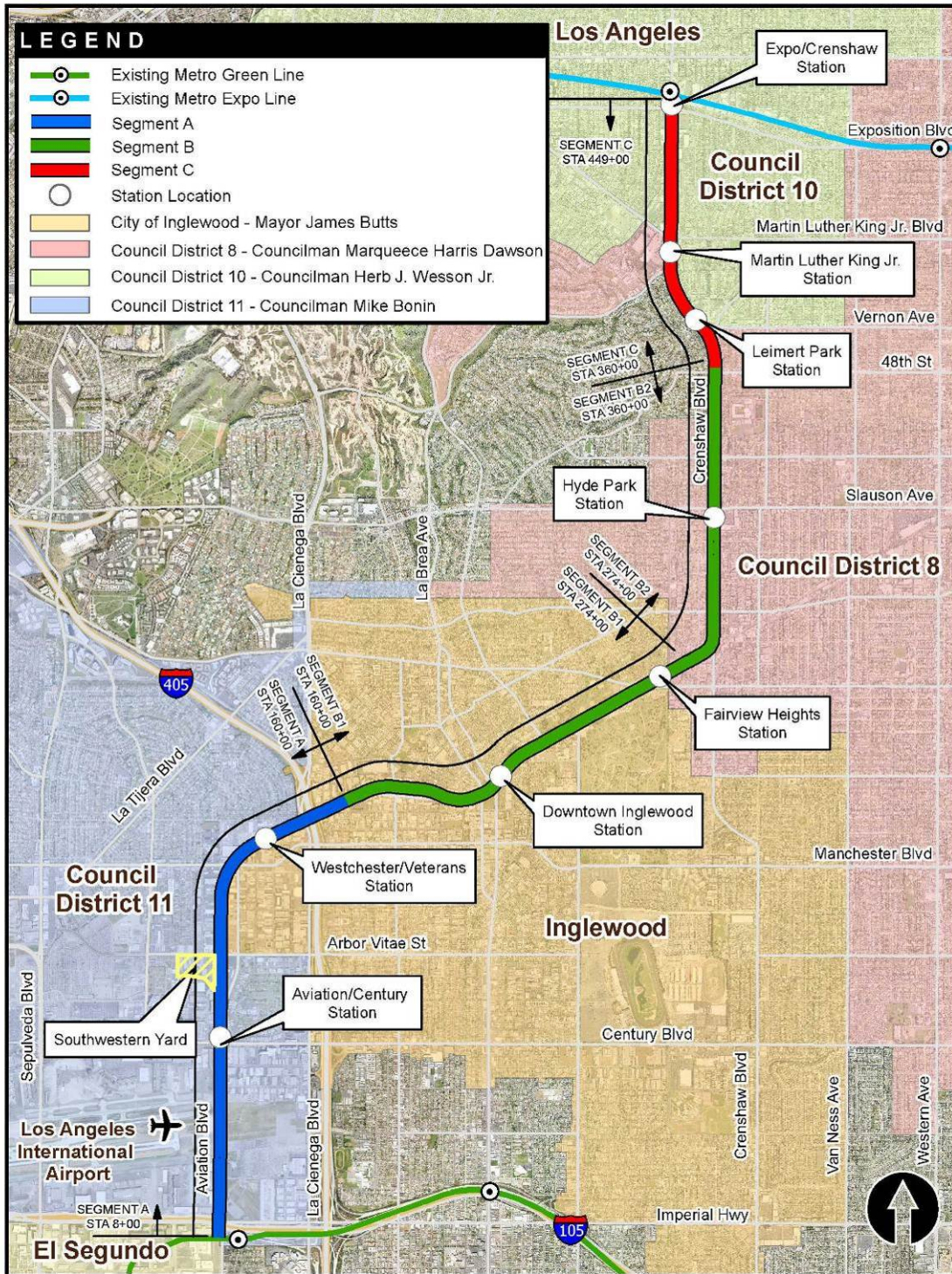
*WSCC in their September 2017 Schedule Update forecasts a 19 calendar day delay to WSCC's Contract Milestone #1 Substantial Completion date of May 1, 2019. This is an additional four calendar day delay from last month's forecast. WSCC continues to explore mitigation opportunities along the alignment where the current impact of 19 days can be mitigated.*

**Concern No. 3:** Remaining Unallocated Contingency is less than 2% of Total Project Budget.

**Status/Action**

Metro monitors and reports on the drawdown of unallocated contingency on a monthly basis. Staff is evaluating the potential uses of the remaining unallocated contingency and also researching funding reallocation.

**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**

Activity ID	Activity Name	Milestone Date	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
988-TW-3700	Install Ballasted #10N RHXO Crossover @ PS STA 100+81 - Seg. A	04-Sep-17 A						
988-CT-7170	Pour (C9, C10, C14, C15) - Leimert Park Station	01-Oct-17						
988-CT-84975	Bridge Emergency Walkway - Aviation / Century Bridge	13-Oct-17						
988-CT-33000	Turnover to Track (sta. 9+00 to 16+64) - Aerial Structure #1	13-Oct-17						
988-TW-9684	Construct Ballasted Track (Arbor Rail Pile STA 103+50 to STA 75+20) - Seg. A	17-Oct-17						
988-SCE-T1050	TPSS-01 Permanent Power Drop - SCE - Procurement of Cable and Equipmen	19-Oct-17						
988-CT-69105	Pour Concourse Slab - Sequence 4 - MLK	24-Oct-17						
988-CT-8360	Pour (C11, C12, C13, C16) - Leimert Park Station	26-Oct-17						
988-MOD-2780	TPSS No.2 Upgrade from 1.5 MW to 2.0 MW	27-Oct-17						
991-TW-30160	Construct Turnouts TO-43	30-Oct-17		△				
988-CT-5659	Ductbank - Manhole / Vault / Pad / Pull Box - TPSS-07/ Aux. Power (Future)	02-Nov-17						
988-CT-23700	Turnover to Track - 111th St Bridge	10-Nov-17						
988-IFC-TCC02	I-Face: TC&C Room Ready for systems @ A02 Aviation/Century TC&C #3	13-Nov-17						
991-SLT1090	Install South Yard Lead Track	17-Nov-17			△			
988-IFC-ATC01	I-Face: Track Complete @ A01 (6+00 to 43+50)	22-Nov-17						
988-TW-1400	Destress DF Track - STA 27+15 to 28+20 - 111th St. Bridge - Seg. A	22-Nov-17						
988-CT-36200	Turnover to Track (Manchester Bridge -STA 118+70 to 121+31) - Manchester Bridge	27-Nov-17						
991-APM1120	Metro LAWA Final Acceptance	28-Nov-17			△			
988-TW-2100	Construct Ballasted Track - Arbor Rail Pile STA 103+50 to 118+58 Manchester - Seg. A	21-Dec-17						
988-MOD-3180	Deluge System at Expo Crossover	28-Dec-17						
988-CT-69535	F/R/P Columns Sequence 3 - MLK	05-Jan-18						
988-ATC-01400	Install ATC Local Cable @ TC&C #1	17-Jan-18						
988-ATC-03300	Rough-In for Wayside Equipment @ A03 (85+90 to 130+00)	18-Jan-18						
988-ATC-02750	Ground Bonds & Signals @ A02 (43+50 to 85+90)	30-Jan-18						
988-SCE-T1170	TPSS-03 Permanent Power Drop - SCE - Utility Install Infrastructure and conduit	05-Feb-18						
988-ATC-TIA5-3000	96th Street - Additional ATC Local Cable at TC&C #3	07-Feb-18						
988-CT-9189	Backup Power (TPSS) - TPSS-04	16-Feb-18						
988-ATC-03400	Install ATC Local Cable @ TC #4	28-Feb-18						



MTA Board Action



MTA Staff



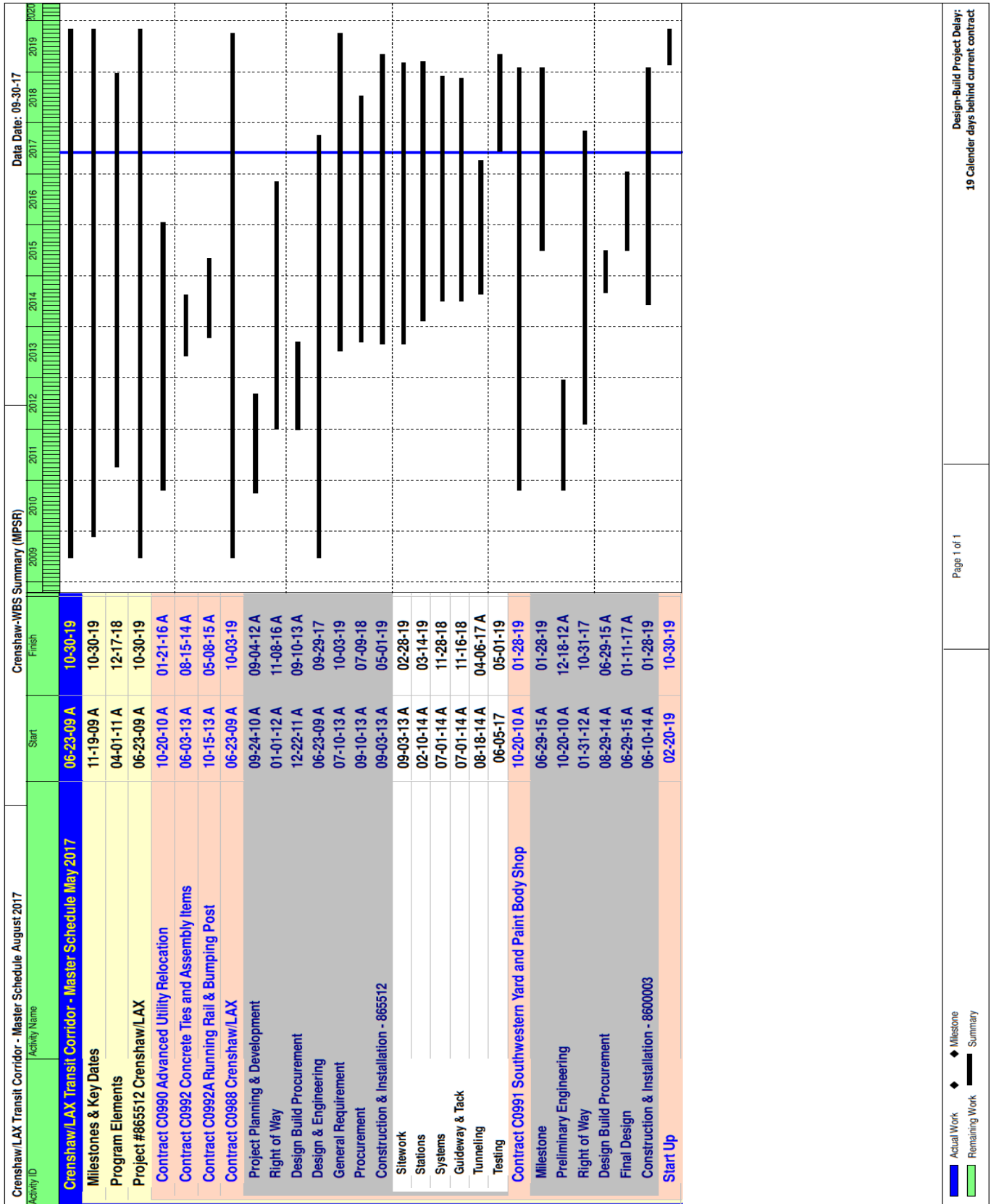
Walsh Shea Corridor Constructors



Hensel Phelps / Herzog

"A" following date is actual and completed

PROJECT SUMMARY SCHEDULE



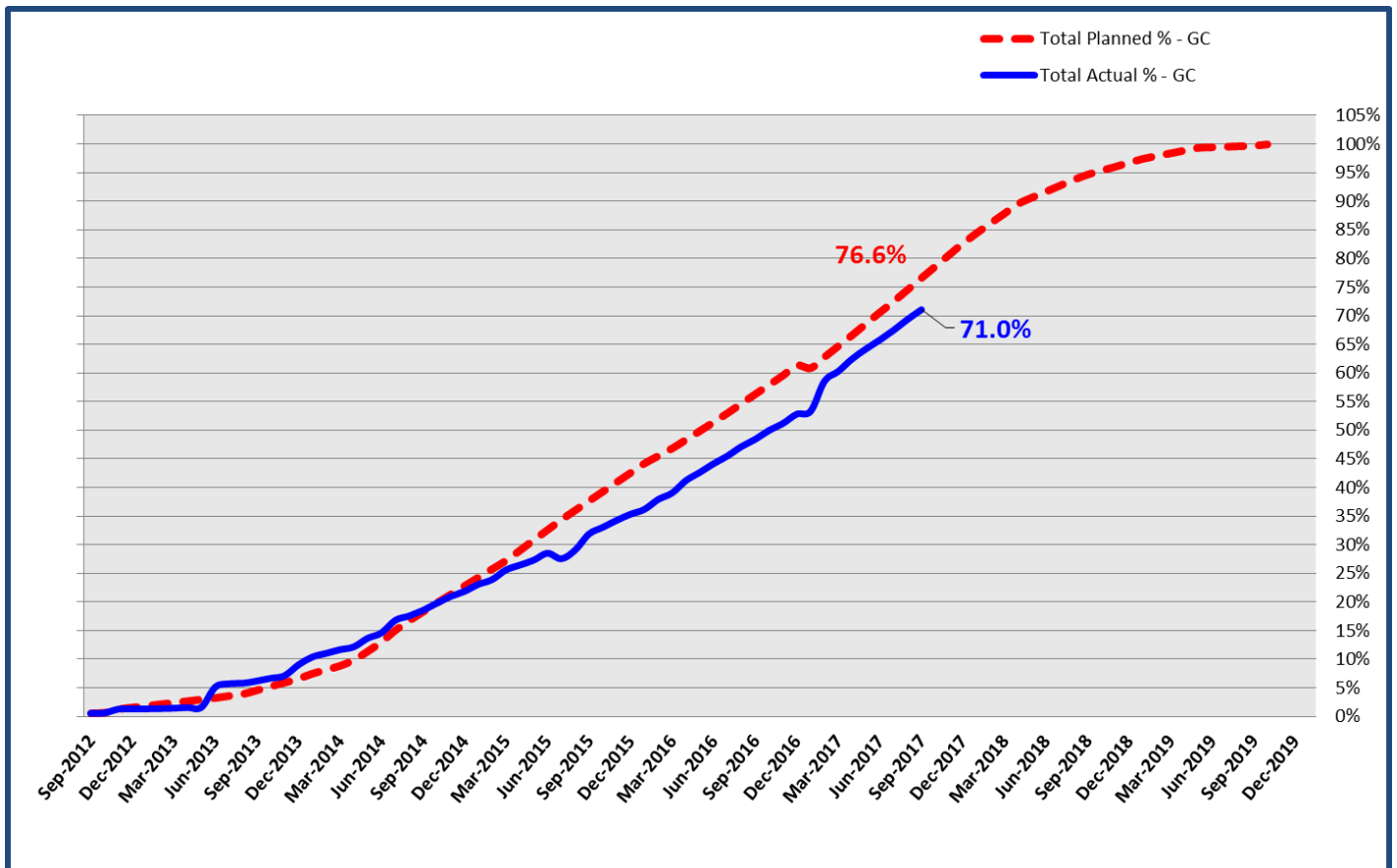
Design-Build Project Delay:  
19 Calendar days behind current contract

■ Actual Work   
 ■ Remaining Work   
 ◆ Milestone   
 Summary

**SCHEDULE MEASUREMENTS**

	Status	Change from Last Period	Comment
Current Revenue Service:	10/30/2019	0	
Forecast Revenue Service:	11/17/2019	-4	Behind Schedule; D-B responsible for mitigation
TIFIA Revenue Service:	10/30/2019	0	
<b>Final Design Progress:</b>			
Contract C0988	98.6%	0.1%	Behind Schedule
Contract C0990	100%	None	Design Completed
Contract C0991	87.2%	0.7%	On Schedule
Contract C0992	100%	None	Design Completed
Contract C0992A	100%	None	Design Completed
<b>Construction Contracts Progress:</b>			
Contract C0988	65.3%	1.4%	Behind Schedule
Contract C0990	100%	None	Substantially Completed
Contract C0991	32.7%	5.5%	On Schedule
Contract C0992	100%	None	Substantially Completed
Contract C0992A	100%	None	Substantially Completed

## OVERALL CONSTRUCTION PROGRESS CURVE STATUS



The actual overall construction progress is 71.0% versus a planned progress of 76.6% through September 2017. The progress curves represent a composite percentage for the physical progress of work performed to complete the project’s construction contracts, including, but not limited to the alignment design-build (C0988), advance utility relocation (C0990), Southwestern Yard design-build (C0991), and two equipment procurement contracts-concrete ties (C0992) and running rail (C0992A).

The physical progress percentage excludes non-construction items such as construction mobilization costs and all general requirement costs not tied specifically to a construction work effort.

The progress curve includes forecast for the alignment design-builder and includes the Southwestern Yard design-builder progress effort.



## **MAJOR EQUIPMENT DELIVERY STATUS**

### **Light Rail Vehicles**

The Board approved exercising Option 1 of Contract P3010 with KinkiSharyo International (KI) to provide light rail vehicles (LRV) for the Crenshaw/LAX project. The total number of vehicles in the option is 28 which include 20 LRVs for the Crenshaw/LAX project and two additional cars for spares. KI is continuing final assembly on option 1 cars in Palmdale, CA.

### **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. Initiated change notice to the existing TVM contractor in December 2016 with a planned notice to proceed by October 2017.

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

Area	Activity ID	Activity Name	Start	Need Date
Site/Civil	988-PR-6945	Fab/Procure & Deliver Electrical Manholes, Vaults, Pads - At-Grade Guideway	18-Sep-15 A	20-Sep-17
Site/Civil	988-PR-6370	Fab/Procure & Deliver Station Emergency Ventilation Fans	4-Sep-17	12-Sep-18
Stations	988-PR-11724591	Escalators - Materials & Fabrication - Aviation / Century	5-Sep-17	27-Dec-17
Stations	988-PR-7425	Fabricate Station Artwork Panels - Crenshaw/Expo Station (Porcelain Enamel Steel)	3-Nov-17	27-Feb-18
Stations	988-PR-7465	Fabricate Station Artwork Panels- Leimert Park Station (Porcelain Enamel Steel)	3-Nov-17	6-Mar-18
Stations	988-PR-4700	Fabricate & Deliver Elevators	04-Apr-16 A	1-Apr-18
Stations	988-PR-30491	Fabricate 100% of Artwork Panels- Fairview Heights Station (Porcelain Enamel Steel)	23-Feb-18	19-Jun-18
Stations	988-PR-7505	Fabricate Station Artwork Panels- Martin Luther King Jr. Station (Porcelain Enamel Steel)	23-Feb-18	26-Jun-18
Trackwork	988-PR-30731	P/S R/A Shop Dwgs Restraining Rail 132 lbs & Fasteners for Green Line	16-Nov-16 A	22-Sep-17
Trackwork	988-PR-7085	Procure Restraining Rail 132 lbs & Fasteners for Green Line	01-Aug-17 A	29-Nov-17
Traction Power	988-PRC-T0600	Mfgr/Assemble/Wire Substation - TPSS-06	01-May-17 A	13-Sep-17
Traction Power	988-PR-6705	Fabricate & Deliver Dry Type Transformers - Century	04-Feb-17 A	26-Sep-17
Traction Power	988-PRC-T0500	Mfgr/Assemble/Wire Substation - TPSS-05	22-May-17 A	4-Oct-17
Traction Power	988-PR-6555	Fabricate & Deliver Medium Voltage Cable	03-Apr-17 A	4-Oct-17
Traction Power	988-PR-6955	Fabricate & Deliver Low Voltage Cable - Cut & Fill	03-Apr-17 A	11-Oct-17
Traction Power	988-PR-6765	Fabricate & Deliver Low Voltage Cable (Project Wide)	01-Aug-17 A	19-Oct-17
Traction Power	988-PRC-T0100	Mfgr/Assemble/Wire Substation - TPSS-01	13-Jun-17 A	22-Nov-17

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Traction Power	988-PRC-T0200	Mfgr/Assemble/Wire Substation - TPSS-02	10-Jul-17 A	14-Dec-17
Traction Power	988-PR-6485	Fabricate & Deliver MCC - TPSS	16-Feb-17 A	9-Feb-18
Traction Power	988-PR-6545	Fabricate & Deliver TPSS Generator	07-Aug-17 A	9-Feb-18
Traction Power	988-PRC-T0300	Mfgr/Assemble/Wire Substation - TPSS-03	5-Sep-17	12-Feb-18
Traction Power	988-PRC-T0800	Mfgr/Assemble/Wire Substation - TPSS-08	18-Oct-17	27-Mar-18
Traction Power	988-PR-6475	Fabricate & Deliver Pad Mount Transformer - TPSS	4-Sep-17	10-Apr-18
Traction Power	988-PRC-T0810	Factory Acceptance Testing - TPSS-08	26-Mar-18	23-Apr-18
Traction Power	988-PRC-T0820	Prepare & Ship TPSS-08	9-Apr-18	7-May-18
Traction Power	988-PRC-T1000	Mfgr/Assemble/Wire Substation - TPSS-10	30-Nov-17	8-May-18
Traction Power	988-PRC-T0210	Factory Acceptance Testing - TPSS-02	13-Dec-17	14-May-18
Traction Power	988-PRC-T0220	Prepare & Ship TPSS-02	28-Dec-17	29-May-18
Traction Power	988-PRC-T0310	Factory Acceptance Testing - TPSS-03	9-Feb-18	22-Jun-18
Traction Power	988-PRC-T0900	Mfgr/Assemble/Wire Substation - TPSS-09	24-Jan-18	29-Jun-18
Traction Power	988-PRC-T0320	Prepare & Ship TPSS-03	23-Feb-18	9-Jul-18
Traction Power	988-PRC-T0910	Factory Acceptance Testing - TPSS-09	28-Jun-18	16-Jul-18
Traction Power	988-PRC-T0920	Prepare & Ship TPSS-09	13-Jul-18	30-Jul-18
Traction Power	988-PRC-T1010	Factory Acceptance Testing - TPSS-10	7-May-18	20-Aug-18
Traction Power	988-PRC-T1020	Prepare & Ship TPSS-10	21-May-18	4-Sep-18
Procurement - Communication System	988-PRC-C0050	Mfgr/Test/Ship Complete Comm Racks - MGL TCCB & ROC	5-Sep-17	15-Dec-17
Procurement - Communication System	988-PRC-C0051	Deliver & Receive Complete Comm Racks - MGL TCCB & ROC	14-Nov-17	18-Dec-17
Procurement - Signal System	988-PRC-A3130	ATC: Pack & Ship Train Control Bungalow @ Arbor (85+90 to 130+00)	28-Aug-17 A	26-Dec-17
Procurement - Communication System	988-PRC-C1400	COM: Procure Equip. Complete		26-Jan-18
Procurement - Communication System	988-PRC-C0009	Procure/Deliver IDS Wire & Cable	21-Jun-17 A	26-Jan-18

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Procurement - Communication System	988-PRC-C0008	Procure/Deliver Fire Alarm Wire & Cable	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0020	Procure Equip. & Components for CCTV	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0075	Procure Equip. & Components for Portal Surveillance	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0070	Procure Equip. & Components for Telephone	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0065	Procure Equip. & Components for Seismic Detection	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0060	Procure Equip. & Components for SCADA	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0055	Procure Equip. & Components for Radio	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0045	Procure Equip. & Components for Intrusion Detection	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0040	Procure Equip. & Components for Gas Detection	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0035	Procure Equip. & Components for Fire Alarm	5-Sep-17	26-Jan-18
Procurement - Communication System	988-PRC-C0030	Procure Equip. & Components for EMP	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0016	Procure/Deliver TVM Wire & Cable	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0014	Procure/Deliver Radio Wire & Cable	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0013	Procure/Deliver CCTV Wire & Cable	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0012	Procure/Deliver PA/VMS Wire & Cable	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0011	Procure/Deliver Telephone Wire & Cable	21-Jun-17 A	26-Jan-18

**Crenshaw/LAX Transit Project  
Quarterly Project Status Report**

**September 2017**

Procurement - Communication System	988-PRC-C0005	Procure Equip. & Components for CTS	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0010	Procure/Deliver CTS Wire & Cable	21-Jun-17 A	26-Jan-18
Procurement - Communication System	988-PRC-C0510	Mfgr/Test/Ship Complete Comm Racks - TC&C #5 - Weschester/Veterans	12-Jan-18	6-Apr-18
Procurement - Communication System	988-PRC-C0210	Mfgr/Test/Ship Complete Comm Racks - UG1 Radio Room	12-Jan-18	6-Apr-18
Procurement - Communication System	988-PRC-C0110	Mfgr/Test/Ship Complete Comm Racks - TC&C #1 Continental (12+00)	12-Jan-18	6-Apr-18
Procurement - Communication System	988-PRC-C0611	Deliver & Receive Complete Comm Racks - TC&C #6 Inglewood	10-May-18	25-May-18
Procurement - Communication System	988-PRC-C0610	Mfgr/Test/Ship Complete Comm Racks - TC&C #6 Inglewood	12-Jan-18	25-May-18
Procurement - Communication System	988-PRC-C0410	Mfgr/Test/Ship Complete Comm Racks - TC&C #4 Arbor	12-Jan-18	25-May-18
Procurement - Communication System	988-PRC-C0310	Mfgr/Test/Ship Complete Comm Racks - TC&C #3 Century	12-Jan-18	25-May-18
Procurement - Communication System	988-PRC-C0100	Mfgr/Test/Ship Complete Comm Racks - TC&C #7 Colina	12-Jan-18	29-May-18
Procurement - Communication System	988-PRC-C0715	Deliver & Receive SCADA Equip - TC&C #8 Fairview Heights	10-May-18	29-May-18
Procurement - Communication System	988-PRC-C0711	Deliver & Receive Complete Comm Racks - TC&C #8 Fairview Heights	10-May-18	29-May-18

## **CRITICAL PATH NARRATIVE**

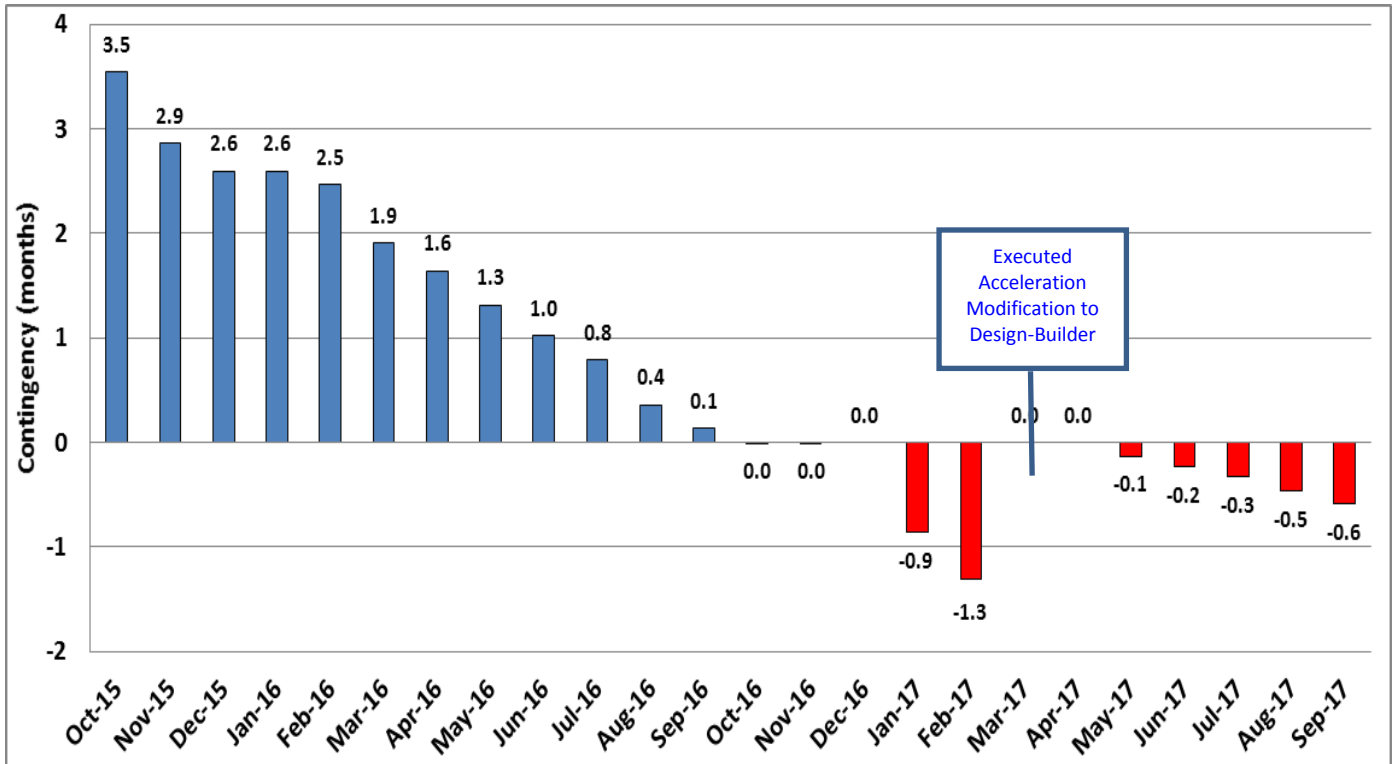
### **Critical Path:**

With the addition of construction activities for the accommodations to support a future LRT station at 96th Street in the approved Completion Schedule the project's critical path changed in December 2016. The critical path for the project as shown in the design-builder's Completion Schedule has shifted from the tunnel boring machine mining operations and tunnel concreting activities to the accommodations construction activities to support a future LRT station at 96th Street.

The critical path this month shifted back to 96<sup>th</sup> Street area. The ballasted track construction at Segment "A" (Green Line to Arbor Vitae). Trackwork construction continues heading north up the alignment with signal controls installation closely following.

The current critical path then continues with local field acceptance testing for elevators followed by WSCC systems integration testing, phase 1 and Metro's systems integration testing, phases 2, and Metro's pre-revenue operations. The critical path completes with the commencement of revenue operations.

## 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.

Metro received and approved a revised baseline schedule (Completion Schedule) from the C0988 design-builder in December 2016. With the extension of time for the design-builders Substantial Completion Milestone to May 1, 2019 and a Metro/design-builder commitment to achieving an October 30, 2019 revenue operations date, no planned schedule contingency exists in the revised baseline schedule.

The C0988 design-builder submitted a schedule update that forecast a nineteen (19) calendar day delay to their substantial completion milestone of May 1, 2019. The design-builder is responsible for mitigating this delay. Metro therefore has reflected the potential delay as a drawdown of schedule contingency this month until the design-builder has implemented mitigation measures.

**PROJECT COST STATUS**

SCC CODE	DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		CURRENT BUDGET/ FORECAST VARIANCE
			PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
10	GUIDEWAYS	471,335,000	-	450,354,375	-	450,770,490	9,141,828	370,721,427	-	450,773,510	419,136
20	STATIONS	153,906,000	-	315,050,000	(300,000)	315,662,242	4,925,013	173,466,424	(300,000)	315,662,242	612,242
30	SUPPORT FACILITIES SOUTHWEST YARD	66,673,000	-	71,164,000	-	71,053,330	4,448,562	34,698,509	-	71,164,000	-
40	SITWORK/SPECIAL CONDITIONS	235,576,000	-	395,798,361	605,768	395,290,885	2,733,340	314,483,200	522,371	403,767,162	7,968,801
50	SYSTEMS	125,132,000	-	169,436,000	-	155,700,985	3,490,686	44,955,993	(3,741,664)	165,156,129	(4,279,871)
<b>CONSTRUCTION SUBTOTAL (10-50)</b>		<b>1,052,622,000</b>	<b>-</b>	<b>1,401,802,736</b>	<b>305,768</b>	<b>1,388,477,932</b>	<b>24,739,428</b>	<b>938,325,553</b>	<b>(3,519,294)</b>	<b>1,406,523,044</b>	<b>4,720,308</b>
60	RIGHT-OF-WAY	132,294,000	-	127,490,000	910,796	128,378,561	(40,360)	128,188,086	889,562	128,379,562	889,562.30
70	LRT VEHICLES	87,780,000	-	83,571,544	-	82,050,901	3,064,825	51,300,169	-	83,571,544	-
80	PROFESSIONAL SERVICES	273,147,000	-	368,734,466	27,414,676	353,035,178	3,685,209	293,617,529	2,629,731	374,806,814	6,072,349
<b>SUBTOTAL (10-80)</b>		<b>1,545,843,000</b>	<b>-</b>	<b>1,981,598,746</b>	<b>28,631,239</b>	<b>1,951,942,572</b>	<b>31,449,102</b>	<b>1,411,431,336</b>	<b>(0)</b>	<b>1,993,280,965</b>	<b>11,682,219</b>
90	UNALLOCATED CONTINGENCY	177,157,000	-	50,401,254	-	-	-	-	-	38,719,035	(11,682,219)
<b>TOTAL PROJECT 865512 (10-100)</b>		<b>1,723,000,000</b>	<b>-</b>	<b>2,032,000,000</b>	<b>28,631,239</b>	<b>1,951,942,572</b>	<b>31,449,102</b>	<b>1,411,431,336</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>28,631,239</b>	<b>1,977,491,960</b>	<b>31,449,102</b>	<b>1,436,980,724</b>	<b>-</b>	<b>2,058,000,000</b>	<b>-</b>

NOTE: EXPENDITURES ARE CUMULATIVE THROUGH 29-SEP-2017.

**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 in May 2015 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 was 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 was revised to



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

\$150.2 million. 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 Current Budget allocation for the Crenshaw/LAX Transit Project, excluding the Southwestern Yard Project \$150.2 million 49% allocation and the Environmental/Planning Current Budget of \$26.0 million is \$1,881.8 million.

Although there is no change to the Total LOP Current Budget there was a reallocation for changes to the SCC elements within the Current Budget in April 2017. The reallocation was required due to the draw down to date of the SCC 90 Allocated Contingency for changes issued to the design-build contractor, additional relocations of utilities by third parties, additional legal services and special services as well as an increase in professional services for construction and project management oversight.

### **Current Forecast:**

The total project current forecast is \$2,058 million. However, there was a reallocation of forecast within the SCC-20 (Guideways), SCC-40 (Sitework and Special Conditions), SCC-50 (Systems), SCC-80 (Professional Services) and a corresponding reduction to SCC-90 (Unallocated Contingency) per FTA Guidelines.

### **Commitments:**

The commitments are cumulative through September 29, 2017. The total commitments increased by \$28.6 million this period primarily due to the following:

- SCC-20 (Stations, Stops, Terminals, Intermodal) has decreased by \$0.3 million due to de-commitment of P.O. funds for cancelled change order associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-40 (Sitework and Special Conditions) has increased by \$0.6 million for executed modifications associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-60 (Right-of-Way) has increased \$0.9 million for cost associated with real estate acquisition and relocation. The total commitment of \$128.3 million includes \$53.3 million for the Southwestern Yard 49% allocation.
- SCC-80 (Professional Services) has increased of \$27.4 million due to executed modifications associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor, Metro project administration FY18 budget allocation, IPMO field office lease and utilities, Non-Federally funded scope of work activities, contract MC069 Construction Management Support Services, environmental permits and testing by Department of Toxic Substances Control, de-commitments of P.O. funds for third party coordination with Los Angeles City Departments, and project management support contracts PS2879 HILL INTERNATIONAL and AE35279 with KKCS/TRIUNITY.
- The total commitment of \$353.0 million includes \$23.3 million for the Southwestern Yard 49% allocation.

**PROJECT COST ANALYSIS (Continued)**

The \$1,977.5 million in commitments to date represents 96.1% of the current budget.

**Expenditures:**

The expenditures are cumulative through September 29, 2017. The total expenditures increased by \$31.9 million this period due to the following:

- SCC-10 (Guideways) has increased by \$9.1 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-20 (Stations, Stops, Terminals, Intermodal) has increased by \$4.9 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-30 (Southwestern Yard) has increased by \$4.4 million for costs associated with the design-build Contract C0991 Division 16: Southwestern Yard (Design/Build).
- SCC-40 (Sitework and Special Conditions) has increased by \$2.7 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor and third party utility relocation scope of work with The Gas Company.
- SCC-50 (Systems) has increased \$3.5 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor.
- SCC-70 (Vehicles) has increased by \$3.1 for costs associated with exercising Option 1 of the P3010 Contract with KINKISHARYO INTERNATIONAL, LLC. to procure 22 light rail vehicles.
- SCC-80 (Professional Services) has increased by \$3.7 million for costs associated with the design-build Contract C0988 Crenshaw/LAX Transit Corridor, Engineering and Design Contract E0117, Contract C0991 Division 16: Southwestern Yard (Design/Build), Metro project administration, IPMO field office lease and utilities, central control, construction management support, legal services, third party coordination by Los Angeles City Departments, community relations, labor compliance monitoring, material test laboratory and environmental consultant services. The total expenditure of \$293.6 million includes \$16.1 million for the Southwestern Yard 49% allocation.

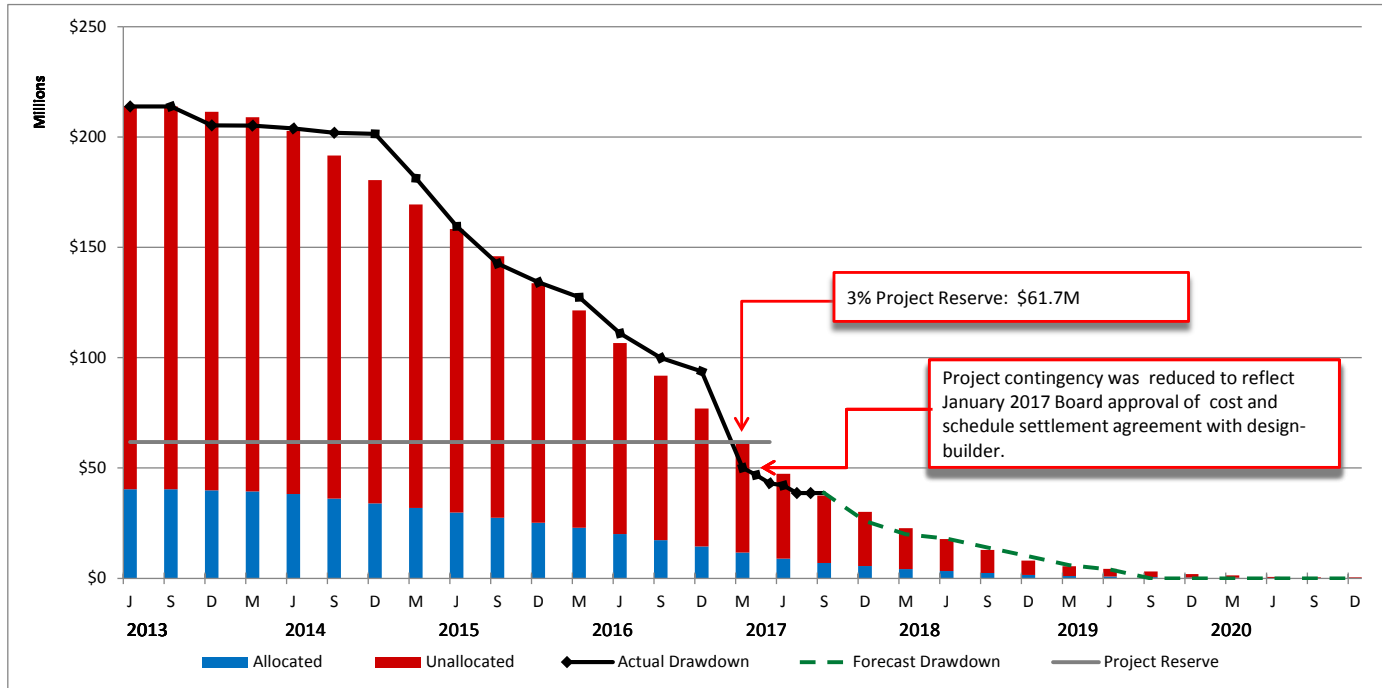
The \$1,437.0 million in expenditures to date represents 69.8% of the current budget.

**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 alignment design-builder (Contract C0988)

C0988 NON-CRENSHAW/LAX TRANSIT PROJECT FUNDED SCOPE OF WORK										
DESCRIPTION	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST VARIANCE	
	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE		
405556 SYSTEMWIDE TRANSIT PLANNING	-	175,495	-	175,495	-	175,495	-	175,495	-	
210090/93 FARE GATE PROJECT	-	2,482,746	-	2,482,746	-	172,746	-	2,482,746	-	
210152 CRENSHAW/LAX BUS TRANSFER FACILITY	-	2,200,000	-	2,200,000	-	403,334	-	2,200,000	-	
460303 AIRPORT METRO CONNECTOR	-	37,914,465	-	35,794,171	335,973	33,317,855	-	37,914,465	-	
500013 C/LAX LAWA SCOPE OF WORK	-	1,575,362	-	531,125	-	408,712	-	1,575,362	-	
<b>TOTAL</b>	-	<b>44,348,068</b>	-	<b>41,183,537</b>	<b>335,973</b>	<b>34,478,142</b>	-	<b>44,348,068</b>	-	

## PROJECT COST CONTINGENCY DRAWDOWN



Through 29-Sep-2017

## PROJECT COST CONTINGENCY DRAWDOWN ANALYSIS

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

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

In February 2017, the project contingency drawdown curve went below the 3% project reserve level and the Board was notified.

The project contingency drawdown curve is based on an October 2019 revenue service date. In February 2017, the forecast drawdown curve was revised.

**PROJECT CONTINGENCY DRAWDOWN ANALYSIS (Continued)**

There has been a cumulative drawdown of \$175,068,383 or 81.9% for both allocated and unallocated contingency through September 2017.

- There is no drawdown of unallocated contingency for period ending September 2017. However, there was a re-allocation of \$3,519,294 for real estate acquisitions, executed modifications for design-build contract C0988 Crenshaw/LAX Transit Corridor, contract PS2879 with HILL INTERNATIONAL, INC., contract AE35279 with KKCS/TRIUNITY JOINT VENTURE, SCADA integration contract OP39603035 with ARINC CONTROL AND INFORMATION SYTEMS and environmental permits and fee scope of work with DEPARTMENT OF TOXIC SUBSTANCES CONTROL. This re-allocation was based on a submittal of lower than planned cost proposal for fare collection equipment.
- There is no allocated contingency remaining as of February 2017 month-end reporting.

<b>PROJECT COST CONTINGENCY (through 29-Sep-2017)</b>					
<b>UNITS IN DOLLARS</b>					
	Original Contingency (Budget)	Previous Period	Current Period	To-Date	Remaining Contingency (Forecast)
Unallocated Contingency	173,500,000	(134,780,965)	-	(134,780,965)	38,719,035
Allocated Contingency	40,366,792	(40,366,792)	-	(40,366,792)	-
<b>Total Contingency</b>	<b>213,866,792</b>	<b>(175,147,757)</b>	<b>-</b>	<b>(175,147,757)</b>	<b>38,719,035</b>

**DISADVANTAGED BUSINESS ENTERPRISE (DBE) STATUS**

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

(Reported Data as of August 2017)

- DBE Goal (Design)** – A numerically expressed percentage of funds apportioned to Design Contracts and is calculated based upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area. **20.00%**
- Current DBE Commitment** – Total DBE Committed Dollars divided by Total Contract Value for Design or Construction. **\$23,248,914 (20.00%)**
- Current DBE Participation** – Total amount paid to date to DBEs divided by the amount paid to date to Prime. **\$27,719,000 (26.06%)**

Twenty-Six (26) Design subcontractors have been identified to-date

- DBE Goal (Construction)** - A numerically expressed percentage of funds apportioned to Construction Contracts and is calculated based upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area. **20.00%**
- DBE Commitment** - Contract commitment divided by current contract value for Construction. **\$251,067,446 (20.00%)**
- Current DBE Commitment** - Actual commitments as Construction work is awarded. **\$256,896,474 (20.46%)**
- Current DBE Participation** - Total amount paid to date to DBEs divided by the amount paid to date to Prime **\$196,197,657 (24.47%)**

199 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 2017)

• <b>Targeted Worker Goal</b> – Construction work to be performed by residents from Economically Disadvantaged Area of LA County	<b>40.00%</b>
<b>Targeted Worker Current Attainment</b>	<b>59.45%</b>
• <b>Apprentice Worker Goal</b> – Construction work to be performed by Apprentices	<b>20.00%</b>
<b>Apprentice Worker Current Attainment</b>	<b>22.42%</b>
• <b>Disadvantaged Worker Goal</b> – Construction work to be performed by Disadvantaged Workers whose primary place of residence is within LA County	<b>10.00%</b>
<b>Disadvantaged Worker Current Attainment</b>	<b>12.39%</b>

## DISADVANTAGED BUSINESS ENTERPRISE (DBE) STATUS

### Contract C0991 Division 16: Southwestern Yard Design-Build

(Reported Data as of August 2017)

- **DBE Goal (Design)** – A numerically expressed percentage of funds apportioned to Design Contracts and is calculated based upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area. **20.00%**
- **Current DBE Commitment** – Total DBE Committed Dollars divided by Total Contract Value for Design or Construction. **\$2,467,836 (20.93%)**
- **Current DBE Participation** – Total amount paid to date to DBEs divided by the amount paid to date to Prime. **\$1,687,026 (17.41%)**

Nine (9) Design subcontractors have been identified to-date

- **DBE Goal (Construction)** - A numerically expressed percentage of funds apportioned to Construction Contracts and is calculated based upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area. **16.00%**
- DBE Commitment** - Contract commitment divided by current contract value for Construction. **\$25,930,837 (16.00%)**
- **Current DBE Commitment** - Actual commitments as Construction work is awarded **\$23,076,829 (14.24%)**
- Current DBE Participation** - Total amount paid to date to DBEs divided by the amount paid to date to **\$4,498,158 (10.71%)**

Forty-three (43) Construction subcontractors have been identified to-date.

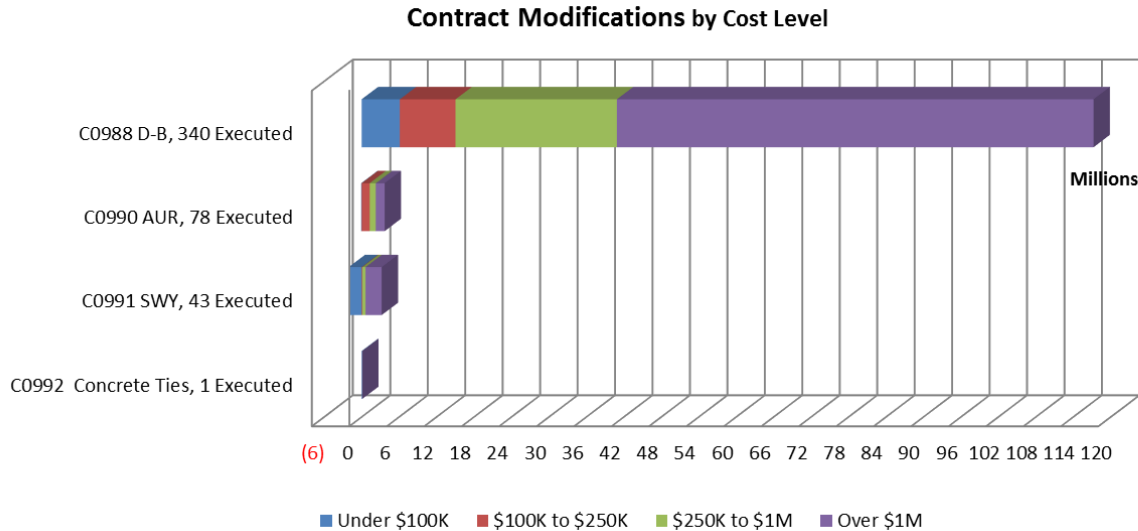
## **PROJECT LABOR AGREEMENTS (PLA) STATUS**

**Contract C0991 Division 16: Southwestern Yard Design-Build**  
(Reported Data as of September 2017)

• <b>Targeted Worker Goal</b> – Construction work to be performed by residents from Economically	<b>40.00%</b>
<b>Targeted Worker Current Attainment</b>	<b>50.62%</b>
• <b>Apprentice Worker Goal</b> – Construction work to be performed by Apprentices	<b>20.00%</b>
<b>Apprentice Worker Current Attainment</b>	<b>22.06%</b>
• <b>Disadvantaged Worker Goal</b> – Construction work to be performed by Disadvantaged Workers whose primary place of residence is within LA County	<b>10.00%</b>
<b>Disadvantaged Worker Current Attainment</b>	<b>9.63%</b>



**SUMMARY OF CONTRACT MODIFICATIONS**



	<b>C0988</b>	<b>C0990</b>	<b>C0991</b>	<b>C0992</b>
	<b>340 Executed</b>	<b>78 Executed</b>	<b>43 Executed</b>	<b>1 Executed</b>
<b>Under \$100K</b>	\$ 6,103,797.41	(\$ 70,250.91)	(\$ 2,056,989.31)	\$ 81,738.00
<b>\$100k to \$250K</b>	\$ 8,922,579.34	\$ 1,280,183.74	\$ 97,420.00	\$ 0.00
<b>\$250K to \$1M</b>	\$ 25,865,023.58	\$ 984,662.39	\$ 523,914.00	\$ 0.00
<b>Over \$1M</b>	\$ 76,351,733.81	\$ 1,417,201.61	\$ 2,590,000.00	\$ 0.00
<b>Total Contract MODs</b>	<b>\$ 117,243,134.14</b>	<b>\$ 3,611,796.83</b>	<b>\$ 1,154,344.69</b>	<b>\$ 81,738.00</b>
<b>% of Contract MODs</b>	<b>9.21%</b>	<b>46.14%</b>	<b>0.67%</b>	<b>3.78%</b>

Three hundred and forty (340) changes with a total value of \$117.24 million have been executed since award of Contract C0988. There are an additional thirty-two (32) changes with a total value of \$1.31 million pending the administrative approval process.

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

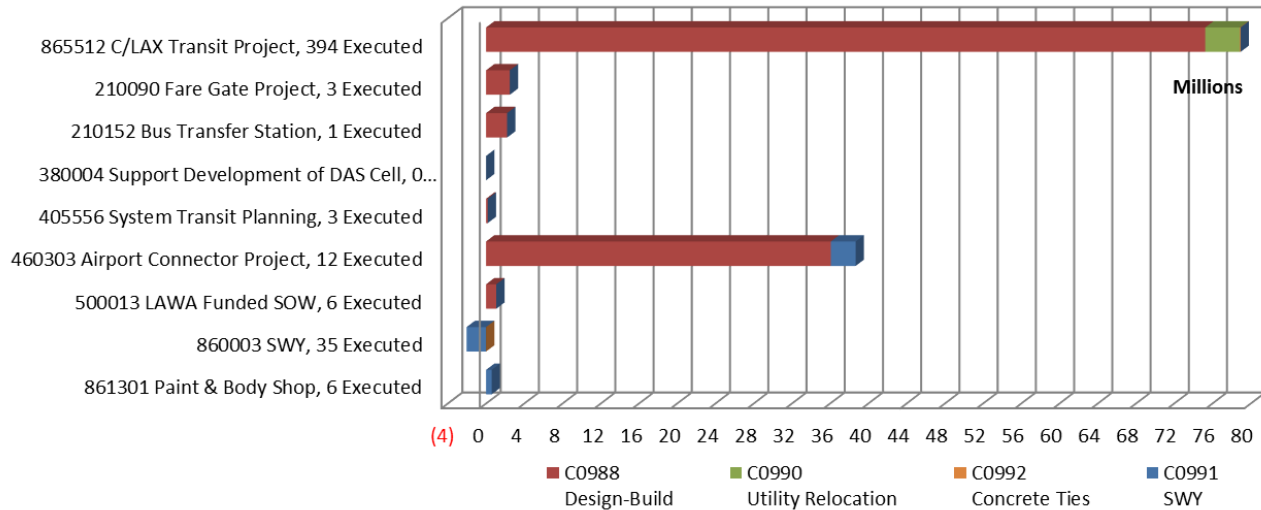
Forty three (43) changes with a total value of \$1.15 million have been executed since award of Contract C0991. There are an additional two (2) changes with a total credit value of \$0.12 million pending the administrative approval process.

One (1) change with a value of \$81,738 was executed for completed Contract C0992.

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

**SUMMARY OF CONTRACT MODIFICATIONS**

**Contract Modifications by Metro Internal Project Number**



	865512	210090	210152	405556	460303	500013	860003	861301
	Executed	Executed	Executed	Executed	Executed	Executed	Executed	Executed
<b>C0988 - QTY</b>	316	3	1	3	11	6	0	0
<b>C0988 - \$</b>	75,251,709	2,482,746	2,200,000	175,495	36,069,273	1,063,911	0	0
<b>C0990 - QTY</b>	78	0	0	0	0	0	0	0
<b>C0990 - \$</b>	3,611,797	0	0	0	0	0	0	0
<b>C0991 - QTY</b>	0	0	0	0	2	0	35	6
<b>C0991 - \$</b>	0	0	0	0	2,598,580	0	(2,029,995)	585,760
<b>C0992 - QTY</b>	1	0	0	0	0	0	0	0
<b>C0992 - \$</b>	81,738	0	0	0	0	0	0	0
<b>Total - QTY</b>	<b>395</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>13</b>	<b>6</b>	<b>35</b>	<b>6</b>
<b>Total - \$</b>	<b>78,945,244</b>	<b>2,482,746</b>	<b>2,200,000</b>	<b>175,495</b>	<b>38,667,853</b>	<b>1,063,911</b>	<b>(2,029,995)</b>	<b>585,760</b>

Three hundred ninety five (395) changes with a total value of \$78.95 million have been executed for Project 865512 Crenshaw/LAX Transit Project. There are an additional thirty (30) changes with a total value of \$1.31 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 \$2.20 million has been executed for Project 210152 Bus Transfer Station Project.

Three (3) changes with a value of \$0.18 million have been executed for Project 405556 System Transit Planning.

Thirteen (13) changes with a value of \$38.67 million have been executed for Project 460303 Airport Metro Connector Project.

Six (6) changes with a total value of \$1.06 million have been executed for Project 500013 Crenshaw/LAX LAWA Statement of Work.

Thirty five (35) changes with a value of \$2.03 million credit have been executed for Project 860003 Southwestern Yard project. There are additional two (2) changes with a total value of \$0.12 million credit pending the administrative approval process.

Six (6) changes with a value of \$0.59 million have been executed for Project 861301 Southwestern Yard Paint and Body Shop.

**FINANCIAL/GRANT STATUS**

\$ in millions

SOURCE	(A)	(B)	(C)	(D)	(D/B)	(E)	(E/B)	(F)	(F/B)
	ORIGINAL BUDGET	TOTAL FUNDS ANTICIPATED	TOTAL FUNDS AVAILABLE	COMMITMENTS \$	%	EXPENDITURES \$	%	BILLED to \$	FUNDING SOURCE %
FEDERAL - CMAQ	68.2	54.0	54.0	54.0	100%	54.0	100%	54.0	100%
FEDERAL - SECTION 5309 BUS CAPT	8.6	8.6	8.6	8.6	100%	8.6	100%	8.6	100%
FEDERAL - REGIONAL STP	20.0	102.2	73.7	102.2	100%	73.7	72%	56.5	55%
FEDERAL - ALTERNATIVE ANALYSIS	1.2	1.2	1.2	1.2	100%	1.2	100%	1.2	100%
FEDERAL - TIGER II	0.0	13.9	13.9	13.9	100%	13.9	100%	13.9	100%
STATE REGIONAL IMPROVEMENT PROG	36.5	36.6	2.2	36.6	100%	2.2	6%	2.2	6%
STATE PPM	0.178	0.178	0.178	0.178	100%	0.178	99%	0.179	100%
STATE PROP 1B PTMISEA	201.2	128.9	128.9	128.9	100%	128.9	100%	128.9	100%
STATE PROP 1 B LOCAL PARTNER PROG	0.0	49.5	49.5	49.5	100%	49.5	100%	49.5	100%
MEASURE R - TIFIA LOAN	545.9	545.9	545.9	545.9	100%	545.9	100%	545.9	100%
MEASURE R	661.1	529.3	529.3	529.3	100%	522.6	93%	454.4	84%
OTHER FUNDS*	52.4	187.5	25.0	107.1	39%	25.0	13%	25.0	13%
PROP C 25% HIGHWAY	148.9	349.8	349.8	349.8	100%	6.0	2%	3.7	1%
PROP C 40% DISCRETIONARY	0.0	0.0	0.0	0.0	0%	0.0	0%	0.0	0%
PROP A 35% RAIL CAPITAL	4.8	50.4	50.4	50.4	100%	4.9	10%	4.9	10%
<b>TOTAL</b>	<b>1,749.0</b>	<b>2,058.0</b>	<b>1,832.5</b>	<b>1,977.5</b>	<b>96.0%</b>	<b>1,436.5</b>	<b>70.0%</b>	<b>1,348.9</b>	<b>66.0%</b>

NOTE: Expenditures are cumulative through September 29, 2017

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

Total Funds Anticipated based on August 2016 Funding Plan

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

## **STATUS OF FUNDS ANTICIPATED**

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

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

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

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

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

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

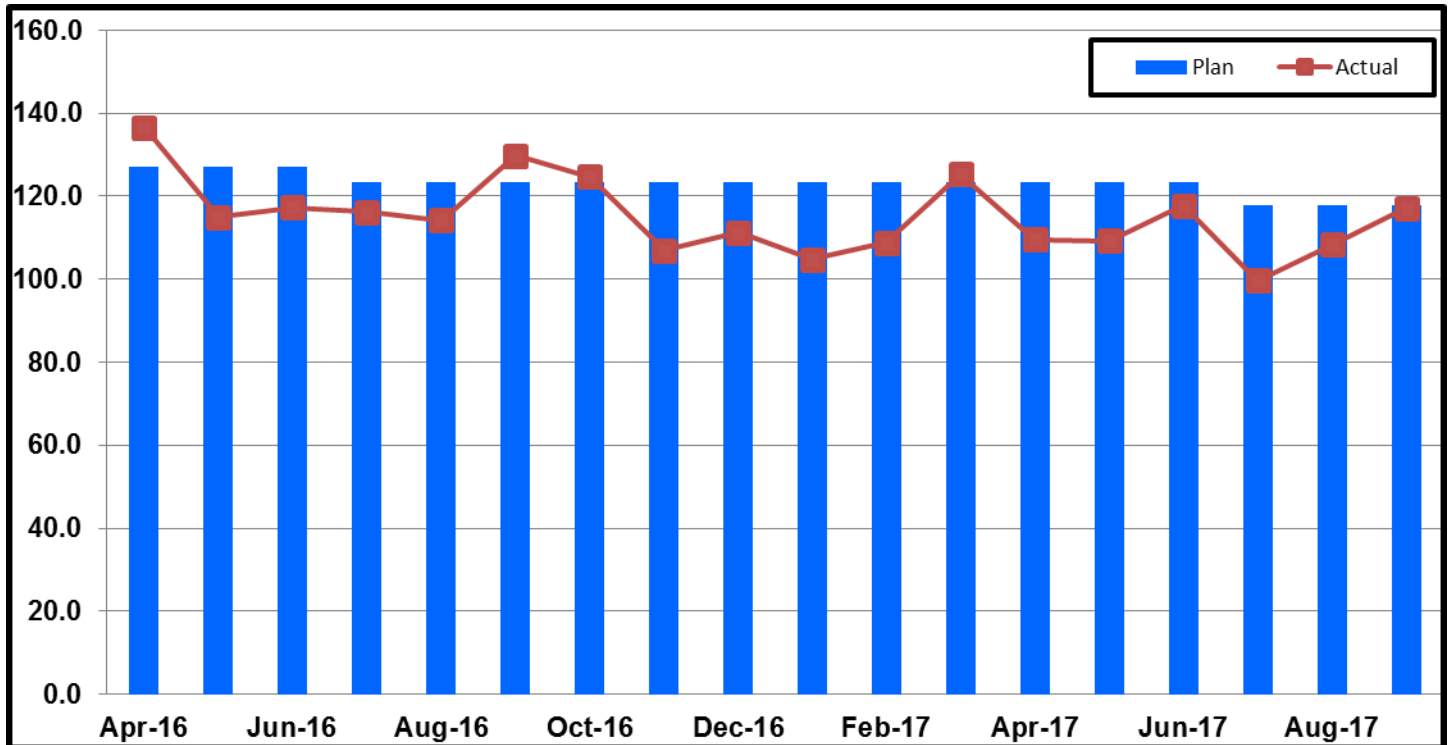
**OTHER FUNDS:** City of LA: Based on the funding agreement between Metro and the City of LA. \$19M is available for drawdown through FY2017.

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

**PROP A 35% RAIL CAPITAL:** \$4.8M has been allocated to the project based on the June 2014 TIFIA Financial Model. No Proposition A 35% Rail Capital funds are allocated for fiscal 2017.

## STAFFING STATUS

### Total Project Staffing – FTES



**Notes:**

1. FTE = Full Time Equivalent
2. Staffing levels include the Southwestern Yard Project.
3. Actual staffing levels are cumulative through September 2017

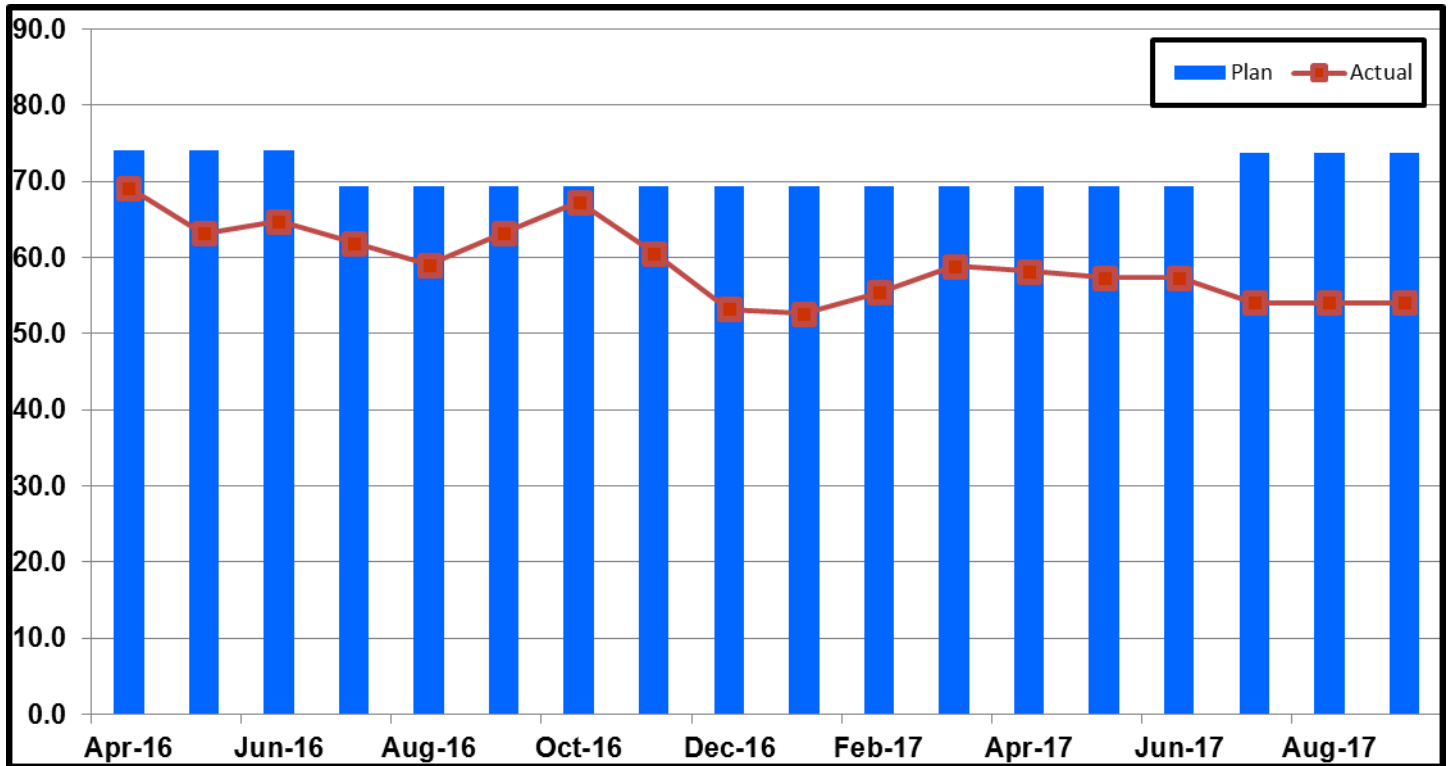
## TOTAL PROJECT STAFFING

The overall FY18 Total Project Staffing Plan averages 117.7 Full Time Equivalent (FTEs) per month consisting of 73.7 for Metro Agency staff, 37.0 for Construction Management Support Services Consultant and 7.0 for Design and Engineering Support Services Consulting staff.

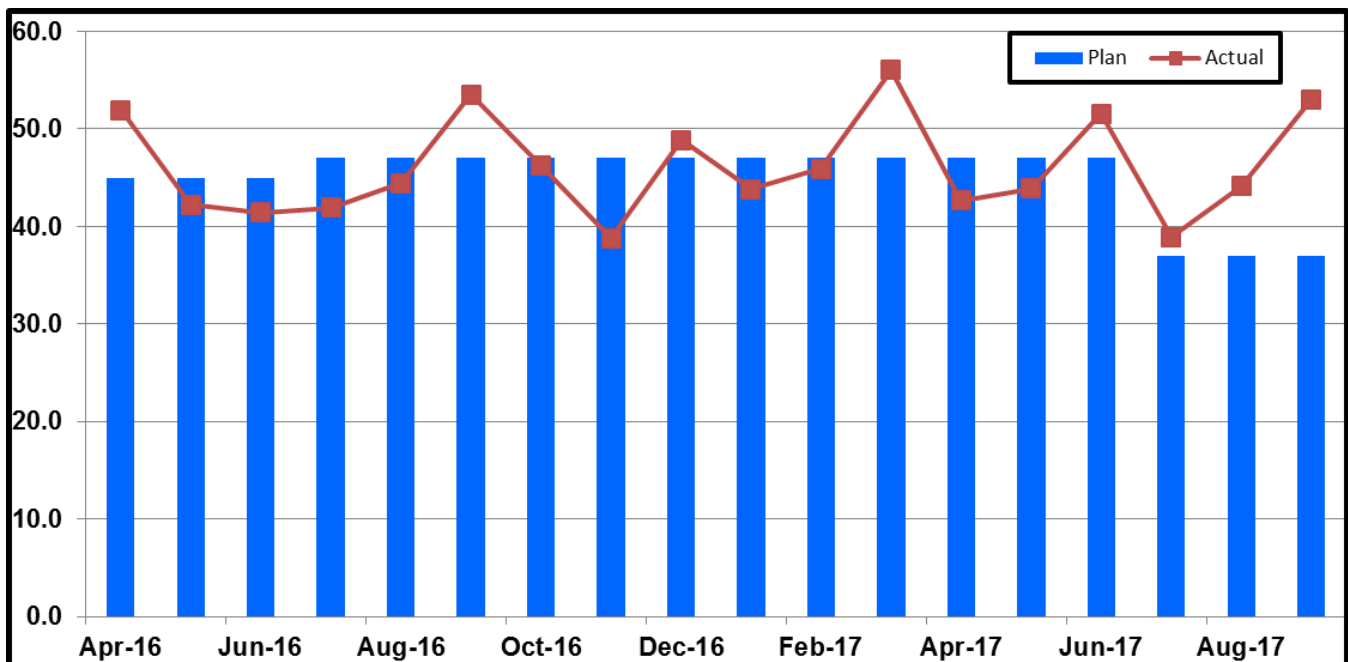
For September 2017, total project staffing were 117.1 FTEs for the month consisting of 54.0 FTEs for Metro’s project administration staff, 53.0 FTEs for Construction Management Support Services Consultant and 10.1 FTEs for Design and Engineering Support Services Consulting staff.

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

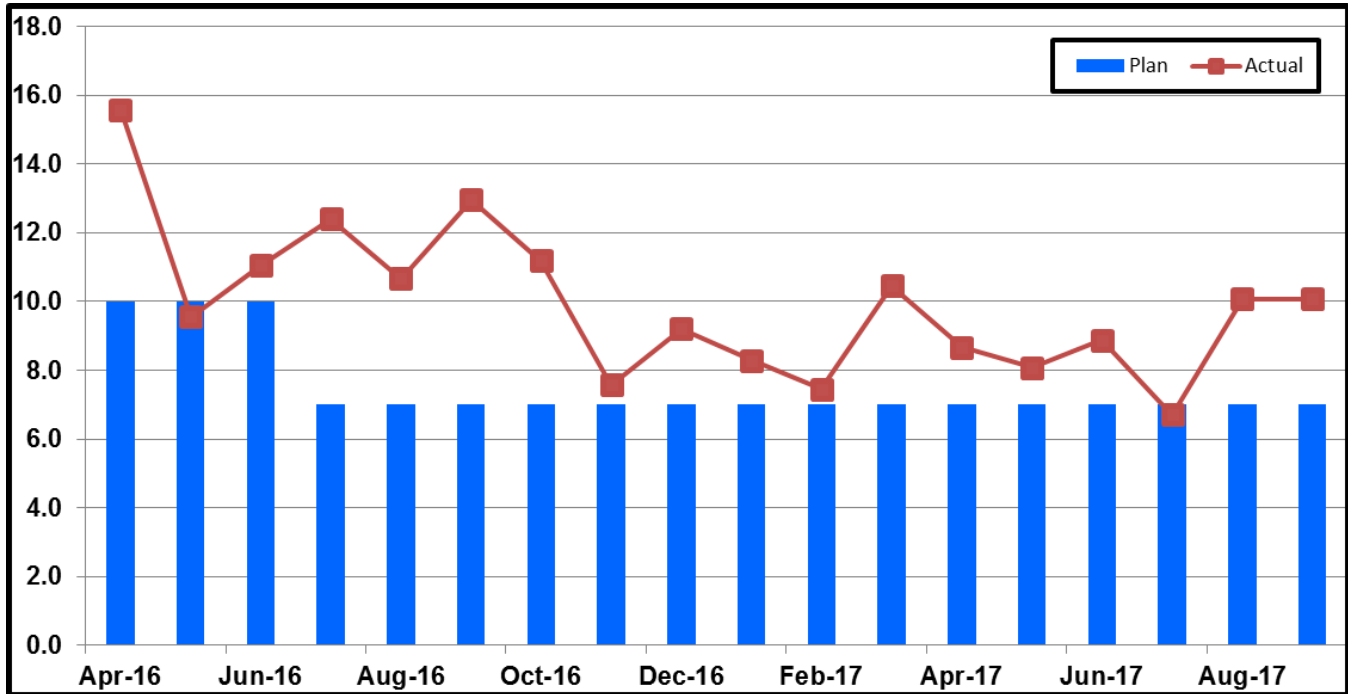
**STAFFING STATUS (Continued)**  
**METRO STAFFING – FTES**



**CONSTRUCTION MANAGEMENT  
 SUPPORT SERVICES CONSULTANT – FTES**



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



**REAL ESTATE STATUS**

Contract No.	Number of Parcels	Certified	Decertified	Appraisals Complete	Offers Made	Agreements Signed	Condemnations Filed	Relocations Complete	Parcels Available to WSCC
<b>C0988 C/LAX Transit Corridor (D-B):</b>									
<i>Crenshaw Subdivision</i>									
Full Takes	12	12		12	12	7	5	12	12
Part Takes (PT or SE)	10	9	1	9	9	3	6		9
TCE	10	9	1	10	10	1	8		9
<b>Subtotal Parcels</b>	<b>32</b>	<b>30</b>	<b>2</b>	<b>31</b>	<b>31</b>	<b>11</b>	<b>19</b>	<b>12</b>	<b>30</b>
<i>Crenshaw Subdivision Additional Parcels:</i>									
Full Takes									
Part Takes	1	1		1	1	1	1		
TCE									
<b>Subtotal Parcels:</b>	<b>1</b>	<b>1</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>		
<b>Total Crenshaw Parcels</b>	<b>33</b>	<b>31</b>	<b>2</b>	<b>32</b>	<b>32</b>	<b>12</b>	<b>20</b>	<b>12</b>	<b>30</b>
<i>Harbor Subdivision</i>									
Full Takes	15	15		15	15	8	7	12	15
Part Takes (PT or SE)	18	16	2	18	17	8	10		15
TCE	3	2	1	2	2		2		2
<b>Subtotal Parcels</b>	<b>36</b>	<b>33</b>	<b>3</b>	<b>35</b>	<b>34</b>	<b>16</b>	<b>19</b>	<b>12</b>	<b>32</b>
<i>Harbor Subdivision Additional Parcels:</i>									
Full Takes	3	2	1	2	1			1	1
Part Takes	4	2	2	2	2	2			2
TCE	3	3		3	3	3			3
<b>Subtotal Parcels:</b>	<b>10</b>	<b>7</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>5</b>		<b>1</b>	<b>6</b>
<b>Total Harbor Subdivision Parcels</b>	<b>46</b>	<b>40</b>	<b>6</b>	<b>42</b>	<b>40</b>	<b>21</b>	<b>19</b>	<b>13</b>	<b>38</b>
<b>Total CR/HS Parcels:</b>	<b>79</b>	<b>71</b>	<b>8</b>	<b>74</b>	<b>72</b>	<b>33</b>	<b>39</b>	<b>25</b>	<b>68</b>
<i>Southwestern Yard</i>									
Full Takes	8	8		8	8	4	4	7	8
Part Takes									
TCE									
<b>Subtotal Parcels:</b>	<b>8</b>	<b>8</b>		<b>8</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>7</b>	<b>8</b>
<b>Total SW Parcels:</b>	<b>8</b>	<b>8</b>		<b>8</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>7</b>	<b>8</b>
<b>Total Project Parcels</b>	<b>87</b>	<b>79</b>	<b>8</b>	<b>82</b>	<b>80</b>	<b>37</b>	<b>43</b>	<b>32</b>	<b>76</b>

- All parcels necessary to construct the guideway have been turned over to the Contractor.
- Work requiring the remaining parcels is not on the critical path and will be used to construct ADA, sidewalk, and other civil improvements.
- Efforts continue to closeout court cases on the various condemned properties.



## **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.
- *Fourteen (14) Nonconformance Reports (NCR's) were issued this month. Eleven (11) NCR's were closed.*
- *Metro conducted Fourth Annual Quality Audit of the Design-Builder.*

## **ENVIRONMENTAL STATUS**

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

- Reviewed and commented on the following Contractor Submittals:
  - Weekly Noise and Vibration Monitoring Data for station and alignment construction
  - Green Construction Policy Monthly Report
  - Weekly Storm Water Pollution Prevent Plan (SWPPP) inspection reports
  - Weekly Fugitive Dust Inspection Reports
  - Various Construction Work Plans and Submittals
- Conducted Contractor Cultural Awareness Training.
- Coordinated cultural monitoring (Archaeological, Paleontological and Native American Monitoring).
- Participated in Environmental Management System (EMS) meetings with design builder.
- *Conducted night time noise monitoring at Arbor Vitae at-grade crossing on 9/8, 9/9, 9/15 and 9/16.*
- *Conducted night time noise monitoring at Slauson/Crenshaw third party utility relocation by SoCal Gas on 9/1 and 9/27.*
- *Conducted night time noise monitoring at Hindry/Florence on 9/19, 9/21, 9/25, 9/27 and 9/28.*
- *Conducted night time noise monitoring at UG3 operations on 9/6, 9/7, 9/8, 9/12, 9/15, 9/19, 9/25 and 9/28.*
- *Discussed AQMD's new Rule 1466 with the contractor and the requirements on the Project for air monitoring.*
- *Found and removed additional Treated Wood Waste from the alignment.*

### **C0991 Southwestern Yard Design Build**

- Encountered contaminated soils on 8/18 at the Southwestern Yard. Soil was profiled on 8/21 and hauled off on 9/1 and 9/7.

## **CONSTRUCTION RELATIONS STATUS**

- *Working with WSCC on cleanliness issues along the entire alignment including removal and replacement of damaged signage, green screens and removal of overgrown weeds.*
- *Continued outreach on Metro's voluntary remediation plan for soil contamination at the Hi Tech Cleaners site.*
- *Participated in a meeting with Metro's Business Solutions Center to discuss businesses on Slauson Avenue impacted by construction.*
- *Coordinating logistical assistance for the Annual Taste of Soul Festival on October 21, 2017.*
- *Metro Construction Relations and Environmental are working with WSCC on noise complaints and issues associated with work in the UG3 cut and cover section.*

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

- *Continued to review and respond to RFI's.*
- *Facilitated coordination between artists and fabrication firms.*
- *Worked with artists to refine designs to submission to fabricators.*
- *Delivered original artwork designs to Design Builder for fabrication by specialized fabricators.*
- *Provided Metro Art Presents stage programming showcasing project area artists and youth at the Baldwin Hills Crenshaw 70<sup>th</sup> Anniversary celebration.*

## **SAFETY & SECURITY STATUS**

- Participated in weekly progress meetings with Construction Management Team to discuss safety/security/quality related issues.
- Attended WSCC's and Metro Progress Meeting to discuss safety concerns and the six week look ahead work schedule.
- Attended the WSCC's weekly Safety Tool-Box Meetings and Safety and Security Staffing Plan Meeting.
- Monitored construction activities on a daily basis including weekend safety "spot-checks" to ensure compliance with contract specifications.
- *Monitored underground stations and surveyed tunnel cross passages, installation of rail road tracks along the alignment, removal of de-stress struts between traveler sections 24 thru 26, steel erection at UG3 and canopy installation at Aviation and Century.*
- *Conducted Monthly All Hands Safety and Security Meeting on September 21, 2017 to review WSCC's Safety Staff Plan, Teamwork/Partnering, tours and UG.*
- Contract C0990 Metro Builders Advanced Utility Relocation completed 360,287 work hours with four recordable incidents. This contract is closed out.
- *Contract C0991 Hensel Phelps Project-to-Date completed 182,453 work hours. Hensel Phelps and their subcontractors completed 22,208 work hours and one recordable injury for the month of September 2017.*
- *Contract C0988 (WSCC) completed 135,067 work hours and C0991 Hensel Phelps completed 157,275 work hours with three recordable injuries for the month of September 2017.*
- *Total Project to Date work hours are 4,951,199 with a total of seventy recordable incidents. The Project Recordable Rate is 2.8. The Bureau of Labor Statistics average recordable rate per 200,000 work hours is 2.8.*

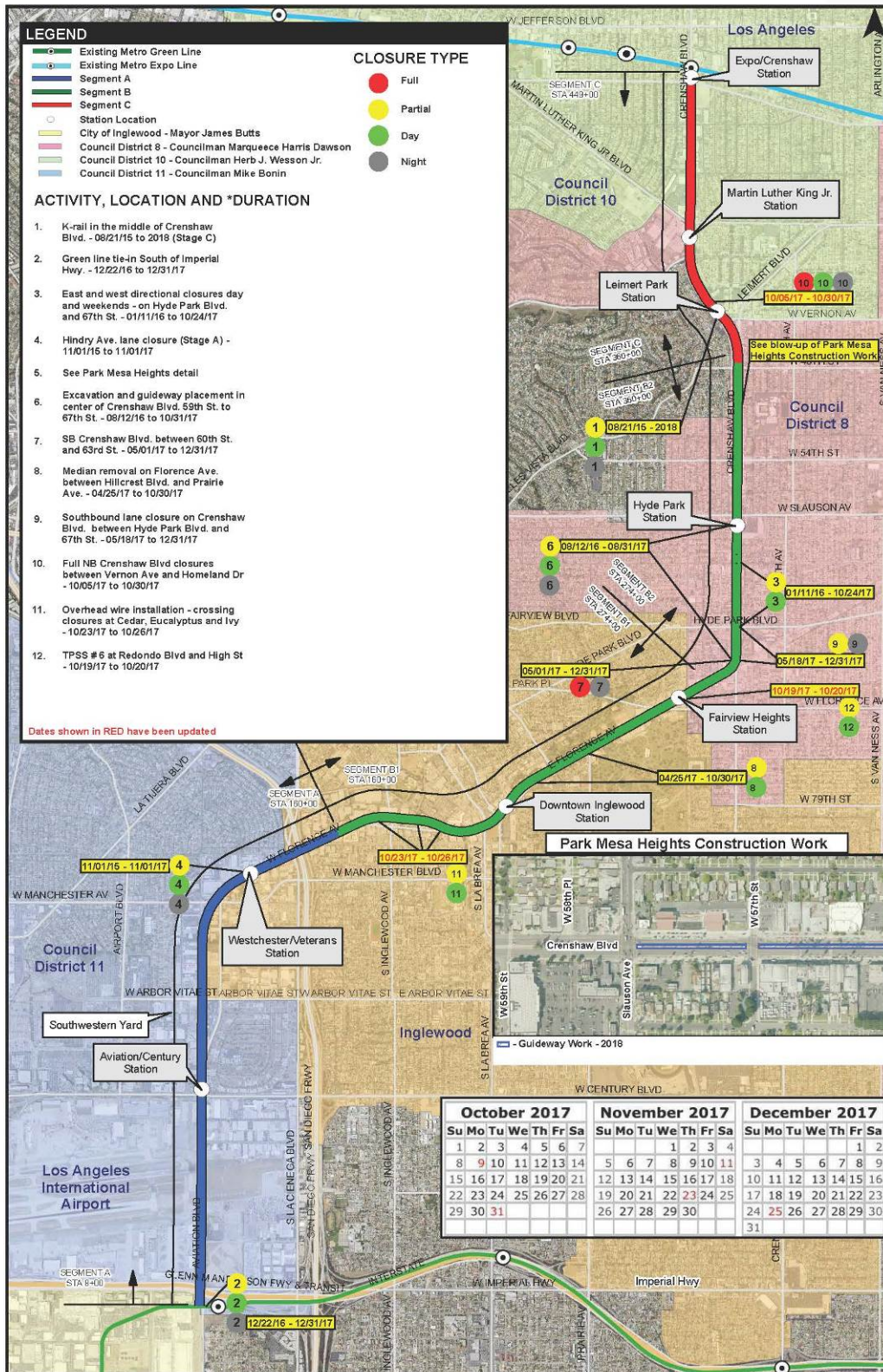
**THIRD PARTY AGREEMENT STATUS**

<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	8/16	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.

**CPUC CROSSING SUMMARY STATUS**

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

## Crenshaw/LAX Transit Corridor Project Traffic Closure Key Map - October - December 2017



Updated : 10/04/2017

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

## **CHRONOLOGY OF EVENTS**

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

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

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




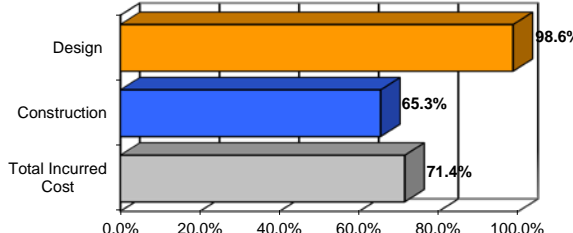
### **CHRONOLOGY OF EVENTS (Continued)**

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


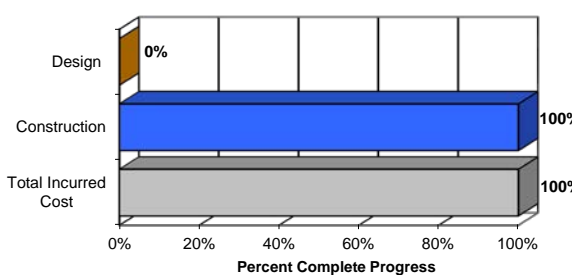
### **CHRONOLOGY OF EVENTS (Continued)**

May 28, 2015	The Board awarded Contract C0991 Division 16: Southwestern Yard to Hensel Phelps/Herzog JV. Also increased by \$22.0 million the Life of Project Budget for the Southwestern Yard Project to a new amount of \$307.2 million.
May 28, 2015	The Board approved Design Option 3 for the track alignment to accommodate the future Metro Connector Transit Station (96 <sup>th</sup> St. Station).
June 29, 2015	Issued Notice to Proceed to Hensel Phelps/Herzog JV, Contract C0991 Division 16: SouthwesternYard.
July 23, 2015	The Board approved the Official and Operational Names of the eight stations.
April 27, 2016	The Tunnel Boring Machine was launched and drilling from north to south of the alignment started.
May 7, 2016	Held Halfway There Community Celebration at Leimert Park marking the halfway point of the project.
May 27, 2016	Held Groundbreaking Ceremony for the Southwestern Yard (Division 16).
October 20,2016	The southbound tunnel boring machine completed mining with the hole thru at Leimert Park Station.
April 6, 2017	The northbound tunnel boring machine completed mining with the hole thru at Leimert Park Station.


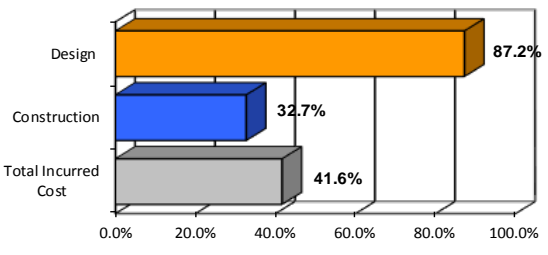
**CONTRACT C0988 STATUS**  
*Crenshaw/LAX Transit Corridor*

<b>PE Design Contractor: Hatch Mott (HM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Walsh Shea Corridor Constructors (WSCC)</b>		<b>Contract No.: C0988</b> <b>Status as of September 30, 2017</b> 																																								
<b>Progress/Work Completed:</b> <b>Construction</b> <ul style="list-style-type: none"> <li>Continued tunnel walkway concrete placement.</li> <li>Continued twin tunnel cross passage electrical and concrete work.</li> <li>Continued wall and concourse concrete placements at Expo, MLK Jr and Leimert Park stations.</li> <li>Continued wall and roof placements at underground structure #3 and wall placements at #4.</li> <li>Continued civil construction work within Park Mesa Heights area.</li> <li>Continued accommodations for future 96th Street Station.</li> <li>Continued finishing work for Green line tie-in structure.</li> </ul>		<b>Areas of Concern:</b> <ul style="list-style-type: none"> <li>Timely submittal of WSCC's design submittals and review by City of Los Angeles.</li> <li>WSCC's ability to mitigate potential schedule delay to their substantial completion milestone of May 1, 2019.</li> </ul>																																								
<b>Schedule Assessment:</b> <ul style="list-style-type: none"> <li>WSCC's September 2017 schedule update reflects a nineteen day delay to Milestone 1. WSCC is looking at several options to mitigate the forecast delay.</li> <li>Metro's assessment is that WSCC is responsible to mitigate the nineteen days.</li> </ul>		<b>Cost Assessment:</b> <ul style="list-style-type: none"> <li>The current construction contract cost forecast is \$1,384,170,686.22 and is within the Board authorized budget.</li> <li>The Contractor submitted their 50th payment application in the approved amount of \$18,481,939.06</li> </ul> <p>* Please note that not all executed modifications may have been included in the Contractor current payment application.</p>																																								
<b>Schedule Summary:</b> <table border="0"> <tr> <td>1. Date of Award:</td> <td>08/01/13</td> <td></td> </tr> <tr> <td>2. Notice to Proceed:</td> <td>09/10/13</td> <td></td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td>1824</td> <td></td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td>2059</td> <td></td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td>1481</td> <td>71.9%</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:	2059		5. Elapsed Time from NTP:	1481	71.9%	<b>Cost Summary:</b> <table border="0"> <tr> <td></td> <td style="text-align: right;"><b>\$ In millions</b></td> </tr> <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;">108.74</td> </tr> <tr> <td>3. Approved Change Orders:</td> <td style="text-align: right;">8.50</td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td style="text-align: right;">1,389.87</td> </tr> <tr> <td>5. Incurred Cost:</td> <td style="text-align: right;">988.32</td> </tr> </table>		<b>\$ In millions</b>	1. Award Value:	1,272.63	2. Executed Modifications:	108.74	3. Approved Change Orders:	8.50	4. Current Contract Value (1 + 2 + 3):	1,389.87	5. Incurred Cost:	988.32													
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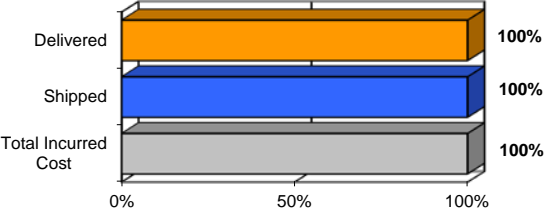
**CONTRACT C0990 STATUS**  
*Crenshaw/LAX Advanced Utility Relocations*

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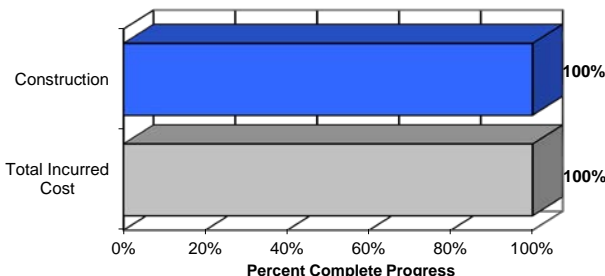
**CONTRACT C0991 STATUS**  
*Southwestern Yard*

<p><b>PE Design Contractor: Hatch Mott (HM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: - Hensel Phelps / Herzog JV</b></p>	<p><b>Contract No.: C0991</b></p> <p><b>Status as of September 30, 2017</b> </p>																									
<p><b>Progress/Work Completed:</b></p> <ul style="list-style-type: none"> <li>Continued main shop pits and SOG/Slab on deck construction following steel erection and deck installation.</li> <li>NTP/MOD was issued for LAWA-CIDH piles/columns on March 1, 2017, and piles were completed including column construction.</li> <li>Continued with electrical and communication signaling and TPSS, duct banks, dry wells, fire risers, storm drain, sewer and fire water lines.</li> <li>Completed material storage building placed slab on grade and installed the structural steel and started exterior skin framing installation.</li> <li>Continue car wash foundation construction and began car cleaning foundations.</li> <li>Delivered all the rail and completed flash welding operation.</li> <li>Continued with Main Shop CMU wall construction and exterior framing.</li> <li>Began construction of 66" storm drain over build.</li> </ul>	<p><b>Areas of Concern:</b></p> <ul style="list-style-type: none"> <li>There are no major areas of concern at this time.</li> </ul>																									
<p><b>Schedule Assessment:</b></p> <ul style="list-style-type: none"> <li>Interface coordination between HPH, WSCC, City, 3rd Parties are being managed proactively to address and to minimize any impact on the project cost and Schedule.</li> <li>Work is progressing ahead of schedule.</li> <li>All phase II access dates were achieved ahead of time.</li> <li>Coordination effort between HPH &amp; WSCC continuing.</li> <li>HPH has stated that there is a potential for them to complete early by 11/30/2018.</li> </ul>	<p><b>Cost Assessment:</b></p> <ul style="list-style-type: none"> <li>The current construction contract cost forecast is \$173,467,039.69 is within the Board authorized budget.</li> <li>The Contractor submitted their 26th payment application in the approved amount of \$7,535,506.16</li> <li>Please note that not all executed modifications may have been included in the Contractor current payment application.</li> </ul>																									
<p><b>Schedule Summary:</b></p> <table border="1"> <tr> <td>1. Date of Award:</td> <td>28-May-15</td> </tr> <tr> <td>2. Notice to Proceed:</td> <td>29-Jun-15</td> </tr> <tr> <td>3. Original Substantial Completion Duration:</td> <td>1,220</td> </tr> <tr> <td>4. Current Substantial Completion Duration:</td> <td>1,311</td> </tr> <tr> <td>5. Elapsed Time from NTP:</td> <td>824      62.9%</td> </tr> </table>	1. Date of Award:	28-May-15	2. Notice to Proceed:	29-Jun-15	3. Original Substantial Completion Duration:	1,220	4. Current Substantial Completion Duration:	1,311	5. Elapsed Time from NTP:	824      62.9%	<p><b>Cost Summary:</b> <span style="float: right;"><b>\$ In millions</b></span></p> <table border="1"> <tr> <td>1. Award Value:</td> <td>172.31</td> </tr> <tr> <td>2. Executed Modifications:</td> <td>0.98</td> </tr> <tr> <td>3. Approved Change Orders:</td> <td>0.17</td> </tr> <tr> <td>4. Current Contract Value (1 + 2 + 3):</td> <td>173.46</td> </tr> <tr> <td>5. Incurred Cost (thru August 2017):</td> <td>64.65</td> </tr> </table>	1. Award Value:	172.31	2. Executed Modifications:	0.98	3. Approved Change Orders:	0.17	4. Current Contract Value (1 + 2 + 3):	173.46	5. Incurred Cost (thru August 2017):	64.65					
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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 (HM)</b> <b>CM Consultant: Stantec</b> <b>Contractor: Rocla Concrete Tie Inc.</b></p>	<p><b>Contract No.: C0992</b></p>  <p><b>Status: Completed</b></p>																																								
<p><b>Progress/Work Completed:</b> - All 19,936 concrete ties have been received onsite by the design-builder (Contract C0988). - Contract is closed out.</p>	<p><b>Areas of Concern:</b></p>																																								
<p><b>Schedule Assessment:</b> All concrete ties were delivered to job site by August 15, 2014.</p>	<p><b>Cost Assessment:</b> The final contract cost is \$2.25 million and has been completely paid to contractor.</p>																																								
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**CONTRACT C0992A STATUS**  
*Running Rail and Bumping Posts*

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



**GREENLINE UNDERPASS** – Bridge superstructure complete including approach slabs and joint seals. Special track work underway.



**UG#1** - Concrete barrier formwork installation on the west U-Wall STA 50+00 to 50+38.



## CONSTRUCTION PHOTOGRAPHS (Continued)



**AVIATION/CENTURY BRIDGE** – Northbound emergency walkway duct bank on the bridge deck.



**ARBOR VITAE GRADE CROSSING** – Crews completed the Arbor Vitae grade crossing on 09.17.17.



## CONSTRUCTION PHOTOGRAPHS (Continued)



(AG-6) LA BREA BRIDGE - Bridge superstructure complete, DF track plinth in-place.



LA BREA AT GRADE STATION - Crews completed canopy outrigger welding and electrical and plumbing installations. Painting of structural steel and installation of canopy catwalks, gutters and glass panels to follow.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



**UG#3** - Installation of formwork for traveler section 47.



**UG#3** - SB tunnel section south of 60th St.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



**HYDE PARK STATION-** Installation of electrical components in the platform deck.



**PARK MESA –** Installing ballast wall drain between 52nd and 54th St.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



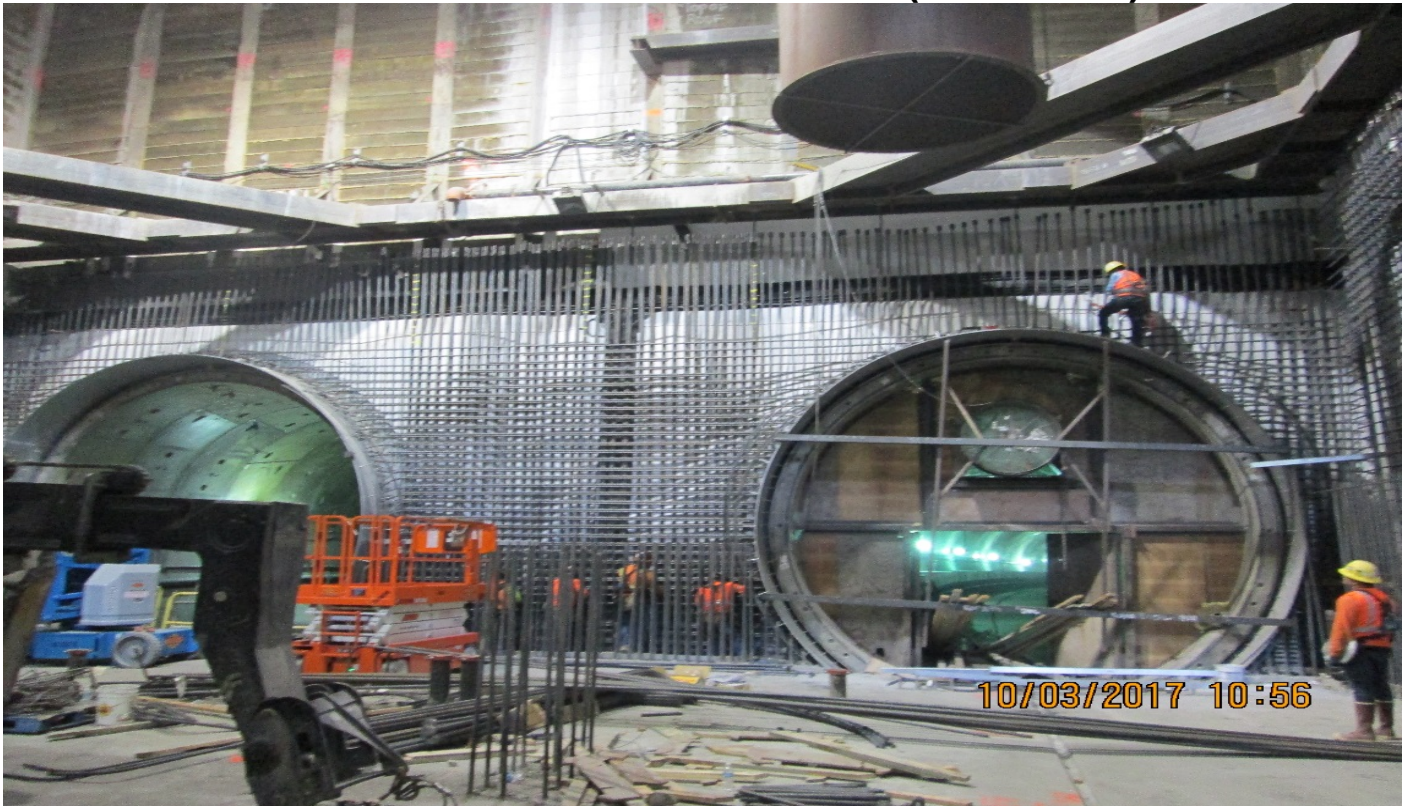
**UG4** – Installing false work for roof sections R-28 thru R-25, south of Vernon portal.



**LEIMERT PARK STATION** - Installing rebar along south concourse level walls.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



**LEIMERT PARK STATION** – Installing rebar for lower walls in the north hammerhead.



**MARTIN LUTHER KING JR. STATION** – Installing formwork for south emergency exit stair 1.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



**MARTIN LUTHER KING JR. STATION** Previously placed invert level columns C6.



**EXPOSITION/CRENSHAW STATION** – Excavating at side structure “Q”.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



**EXPOSITION/CRENSHAW STATION** – Installing rebar for Roof Slab Phase 1.



**TUNNELING** – Placement of NB Tunnel Walkway section 13a.



**CONSTRUCTION PHOTOGRAPHS (Continued)**



**TUNNELING** – Erecting arch section formwork at CP-5.



Aerial view of Southwestern Yard as of 10/1/2017.



## CONSTRUCTION PHOTOGRAPHS (Continued)



Southwestern Yard - Main shop building with control tower.



Southwestern Yard - Underground ductbank, vaults and material storage building.

### CONSTRUCTION PHOTOGRAPHS (Continued)



Southwestern Yard - Main shop interior electrical, plumbing and mechanical.

**APPENDIX**

**PROJECT COST STATUS – SOUTHWESTERN YARD**

SCC CODE	DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST VARIANCE
			PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	
10	GUIDEWAYS	0	0	0	0	0	0	0	0	0	0
20	STATIONS	0	0	0	0	0	0	0	0	0	0
30	SUPPORT FACILITIES (Y & S)	85,546,835	0	85,189,999	50,270	85,027,240	2,835,532	20,366,061	50,270	85,384,076	194,077
40	SITWORK/SPECIAL CONDITIONS	35,932,000	0	38,273,000	17,621	38,794,470	646,544	25,585,571	0	39,005,140	732,140
50	SYSTEMS	25,784,616	0	32,991,000	76,500	33,067,500	3,815,255	9,306,755	76,500	33,067,500	76,500
	(10-50) CONSTRUCTION	147,263,451	0	156,453,999	144,391	156,889,210	7,297,331	55,258,387	126,770	157,456,717	1,002,717
60	RIGHT-OF-WAY	99,910,000	0	100,000,000	0	102,474,206	0	102,418,610	0	102,420,624	2,420,623
70	VEHICLES	0	0	0	0	0	0	0	0	0	0
80	PROFESSIONAL SERVICES	35,601,095	0	33,639,631	306,272	32,922,399	541,807	25,263,159	(346,666)	35,697,700	2,058,070
90	PROJECT CONTINGENCY	13,659,732	0	17,106,370	0	0	0	0	219,896	11,624,959	(5,481,411)
<b>TOTAL</b>		<b>296,434,278</b>	<b>0</b>	<b>307,200,000</b>	<b>450,663</b>	<b>292,285,815</b>	<b>7,839,138</b>	<b>182,940,157</b>	<b>(0)</b>	<b>307,200,000</b>	<b>(0)</b>

C0991 PAINT & BODY SHOP PROJECT											
DESCRIPTION	ORIGINAL BUDGET	CURRENT BUDGET		COMMITMENTS		EXPENDITURES		CURRENT FORECAST		FORECAST VARIANCE	
		PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE		
861301 DIV 22 PAINT & BODY SHOP	11,000,000	0	11,000,000	36,684	9,673,194	47,915	2,991,764	0	11,000,000	0	

<b>GRAND TOTAL</b>	<b>307,434,278</b>	<b>0</b>	<b>318,200,000</b>	<b>487,348</b>	<b>301,959,009</b>	<b>7,887,053</b>	<b>185,931,920</b>	<b>(0)</b>	<b>318,200,000</b>	<b>(0)</b>
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NOTE: EXPENDITURES ARE CUMULATIVE THROUGH September 30, 2017.

**PROJECT COST ANALYSIS**

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

**Original Budget:**

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

**Current Budget:**

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

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

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

## **APPENDIX**

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

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

**Commitments:**

The commitments are cumulative through September 30, 2017.

Total commitments increased by \$0.49 million for this period due to the following:

- SCC-30
  - Hensel Phelps/Herzog JV expenditure increase by \$0.05 million.
- SCC-40
  - Hensel Phelps/Herzog JV expenditure increase by \$0.02 million.
- SCC-50
  - Hensel Phelps/Herzog JV expenditure increase by \$0.08 million.
- SCC-60
  - No change to report.
- SCC-80
  - Professional services such as legal, construction management, labor commitment and FIS adjustments increased by \$0.31 million.

The \$301.96 million in commitments to date represents 94.9% of the current budget.

**Expenditures:**

The expenditures are cumulative through September 30, 2017.

The total expenditures increased by \$7.89 million for this period due to the following:

- SCC-30
  - Hensel Phelps/Herzog JV expenditure increase by \$2.84 million.
- SCC-40
  - Hensel Phelps/Herzog JV expenditure increased by \$0.65 million.
- SCC-50
  - Hensel Phelps/Herzog JV expenditure increase by \$3.82 million.
- SCC-60
  - No change to Right-of-Way expenditure.
- SCC-80
  - Hensel Phelps/Herzog JV, agency expenditure and professional services expenditure increase by \$0.54 million.

The \$185.93 million in expenditures to date represents 58.4% of the current budget.

**COST AND BUDGET TERMINOLOGY**

**Project Cost Descriptions -**

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

**Cost Report by 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.