



Board Report

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Agenda Number: 27

CONSTRUCTION COMMITTEE JULY 20, 2017

**SUBJECT: ORAL REPORT OF THE PROGRAM MANAGEMENT
CHIEF OFFICER**

RECOMMENDATION

RECEIVE oral report by the Program Management Chief Officer.

DISCUSSION

- A. Update report covering the month of July 2017 by the Program Management Chief Officer; and
- B. At the January 2017 meeting, the Board authorized a one-year pilot program authorizing the CEO to negotiate and execute project-related agreements, including contract modification(s) up to the authorized Life of Project budget, to streamline project management of the four (4) major transit corridor projects (Crenshaw/LAX, Regional Connector, Westside Purple Line Extension Section 1 and 2 projects). In addition, staff was directed to provide monthly reports, that would include any pending project-related agreements, change orders/contract modifications and any significant changes to contingency.

Pursuant to the Board motion, staff has developed and begun reporting on cost contingency and contract change activity starting in the February 2017 Monthly Update to the Construction Committee. This new report includes a project cost contingency drawdown curve and allows the Board to see project-related and change activity. This report can be found in Attachment A.

At the conclusion of the one-year pilot program in January 2018, staff will report back to the Board on the time saved as result of this pilot program, and any lessons learned, and recommendations for the Board review and further direction.

- C. Program Management is continuously improving project delivery through innovation and application of best practices. Attachment A summarized the progress achieved in FY2017.

ATTACHMENTS

Attachment A - Program Management Chief Officer's Report - JULY 2017

Prepared by:

- **Crenshaw/LAX** - Charles Beauvoir, Deputy Executive Officer, Project Mgmt., (213) 299-3095
- **Regional Connector** - Gary Baker, Deputy Executive Officer, Project Mgmt., (213) 893-7191
- **Westside Purple Line Ext 1** - James Cohen, DEO Project Mgmt., (213) 922-7911
- **Westside Purple Line Ext 2** - Michael McKenna, EO Project Mgmt., (213) 312-3132
- **Patsaouras Plaza Busway Station** - Timothy Lindholm, EO Project Engr., (213) 922-7297
- **Willowbrook/Rosa Park Station** - Timothy Lindholm, EO Project Engr., (213) 922-7297
- **Blue Line Projects** - Androush Danielians, DEO Project Mgmt.(Interim)., (213) 922-7598
- **Presentation** - Yohana Jonathan, Departmental System Analyst, (213) 922-7592

Program Management Chief Officer's Report

Project Status Report

Presented By

Richard Clarke

Chief Program Management Officer













July 2017

Construction Committee

Los Angeles County Metropolitan Transportation Authority



PROJECT BUDGET & SCHEDULE STATUS SUMMARY CHART

Project	Cost Performance	Schedule Performance	Comments
Crenshaw/LAX			The remaining cost contingency is below the 3% of total project budget reserve (\$43 million in contingency remains). Contractor implementing schedule mitigations to maintain planned revenue service in October 2019.
Regional Connector			Project is proceeding consistent with schedule forecast and revised LOP budget as approved by the Board in January 2017.
Westside Purple Line Extension-Section 1			Project is 20% complete, no significant issues.
Westside Purple Line Extension-Section 2			Notice to Proceed for the Design/Build Contract C1120 was issued on April 26, 2017.
Patsaouras Plaza			Schedule negotiations in progress regarding revised substantial completion date of November 2018.
Willowbrook/Rosa Parks Station			Design activities progressing to 100% complete. Life of Project (LOP) budget approval scheduled for September Board meeting.

July 2017



On target



Possible problem



Major issue



Metro 2

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Los Angeles County Metropolitan Transportation Authority

CRENSHAW/LAX TRANSIT PROJECT

◇ BUDGET	Current	Forecast
TOTAL COST	\$2,058M	\$2,058M

◇ SCHEDULE	Current	Forecast
REVENUE OPERATION	Oct 2019	Oct 2019

- Overall project progress is 66% complete with contractor maintaining schedule by mitigating any potential schedule delays.
- Contractor continues trackwork installation along southern area of alignment.
- All below, at-grade and aerial structures are on schedule.
- Continuing critical street and utility work in Park Mesa Heights area.
- Southwestern Yard contractor on schedule with work continuing on main shop pits and foundation.



Completed deck concrete placement for I-405 bridge structure.



Installation of rebar for UG#4 south of Leimert Park Station.

July 2017



On target



Possible problem



Major issue



Metro 3

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REGIONAL CONNECTOR TRANSIT CORRIDOR



BUDGET

	Current	Forecast
TOTAL COST	\$1,810M	\$1,810M

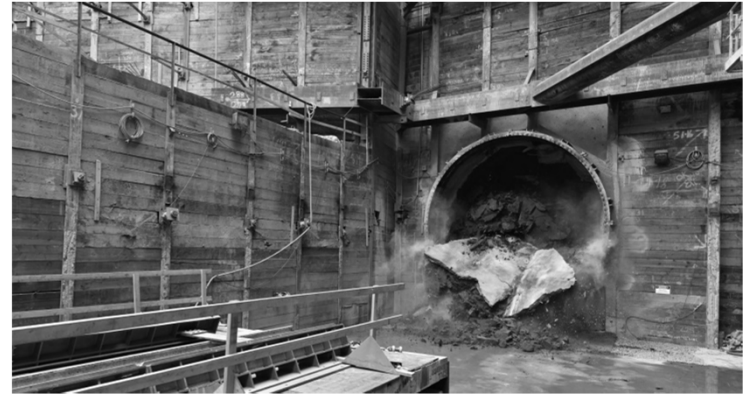
* Includes Board approved LOP plus Finance costs.



SCHEDULE

	Current Dec 2021	Forecast Dec 2021
REVENUE		
OPERATION		

- Overall Project Progress is 36%.
- TBM breakthrough at Grand Av Arts/Bunker Hill Station occurred June 1st.**
- TBM relaunched on June 14th to mine from Grand Av Arts/Bunker Hill Station toward the 4th/Flower TBM Retrieval Shaft.
- Successfully implemented temporary 6th Street Closure.
- Tie-back installation, station excavation, and utility hanging continue at Broadway Station.
- Preparation for LA County storm drain (Hobas) pipe installation continues at Broadway Station.
- Pile installation, excavation/lagging and utility hanging continue under Flower Street decking.
- Left tunnel eye installation at TBM Retrieval Shaft underway, in preparation to receive TBM.
- 6th/Flower power asset relocation designs advancing through collaborative efforts.



TBM breaking through Grand Av Arts/Bunker Hill Station



TBM in Grand Av Arts/Bunker Hill Station preparing for relaunch

July 2017



On target



Possible problem



Major issue

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Metro 4

WESTSIDE PURPLE LINE EXTENSION – SECTION 1

OK BUDGET

	Current	Forecast
TOTAL COST*	\$3,154M	\$3,154M

* Includes Board approved LOP plus Finance costs.

OK SCHEDULE

	Current	Forecast
REVENUE OPERATION	Oct 2024	Nov 2023
	FFGA	

- Overall Project Progress is 20% complete.
- Excavation for the Wilshire/La Brea Station commenced on October 12, 2016 and continues beneath the deck panels. First level walers and struts are complete and second level excavation, waler and strut installation is on going. Station excavation is scheduled to complete by December 2017.
- The Wilshire/Fairfax pile installation operation completed on February 8, 2017. Street decking commenced on the weekend of February 11, 2017, and completed on June 19, 2017. Steady-state traffic control is anticipated in mid-July 2017.
- The Wilshire/La Cienega Station piling operation, which commenced on March 20, 2017, continues. Stage 1 piling along the south side of Wilshire Boulevard is complete. The traffic switch to the north side of Wilshire Boulevard for Stage 2 piling occurred on June 24, 2017.
- The jet grouting operation along Wilshire Boulevard at the cross passages continues. This work along the tunnel section from Wilshire/La Brea to Wilshire/Western is scheduled to continue through October 2017.
- Tunnel Boring Machines (TBMs) are being fabricated for delivery at the end of 2017. Tunneling is planned to start in 2018.



Under Deck Excavation at Wilshire/La Brea Station



Decking Operation at Wilshire/Fairfax Station

July 2017



On target



Possible problem



Major issue

Construction Committee

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Metro 5

WESTSIDE PURPLE LINE EXTENSION – SECTION 2

OK BUDGET

	Current	Forecast
TOTAL COST*	\$2,530M	\$2,530M

* Includes Board approved LOP and Finance charges.

OK SCHEDULE

	Current	Forecast
REVENUE OPERATION	Dec 2026	Aug 2025
	FFGA	

- Contract C1120 Design Build Contractor began final design.
- Construction of the telecom joint trench is proceeding in Century City. Duct bank work planned completion is June 2017 and subsequent cable pulling/splicing is anticipated for completion in September 2017.
- Los Angeles Department of Water and Power utility relocations began at the Century City Constellation Station in May 2017 for both water and power.
- Negotiations with the City of Beverly Hills for a Memorandum of Agreement governing utility work began in March 2017 and is continuing.
- Beverly Hills City Council approval for the construction permit is anticipated in June 2017.
- Advanced utility relocations are anticipated to begin at the Wilshire/Rodeo Station in July 2017.



LADWP water relocation work in Century City

July 2017



On target



Possible problem



Major issue

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Metro 6

PATSAOURAS PLAZA BUSWAY STATION

OK BUDGET		
	Current	Forecast
TOTAL COST	\$39.7M	\$39.7M

◇ SCHEDULE		
	Current	Forecast
SUBSTANTIAL COMPLETION	Nov 2018	Nov 2018

- All drilled foundations will be completed in July 2017. Column construction is ongoing.
- False work on south side of bridge has started, north side will start July 2017
- Sanitary sewer relocation completed May 2017, storm drain relocation ongoing and will be complete July 2017.
- Ramirez Street closure was implemented June 2017. Vignes Street on/off-ramp will open Sept. 2017.
- Schedule negotiations in progress for revised substantial completion date due to delayed start from weather.



Aerial view of site



Completed bridge column



False work on south side

July 2017



On target



Possible problem



Major issue


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Metro 7

WILLOWBROOK/ROSA PARKS STATION

 BUDGET	Current	Forecast
TOTAL COST	N/A	\$92.4M

 SCHEDULE	Current	Forecast
SUBSTANTIAL COMPLETION	Dec 2020	Dec 2020

- Early Start Phase (Project E) in procurement – scheduled to break ground 11/17
- Phase A and C at 100% design completion. Phase A in review by County, Phase C with Caltrans
- Pedestrian grade crossing documents submitted to UP and PUC
- Phase B at 100% design completion and in early coordination for PEER review with CalTrans
- Consideration of proposed project LOP Budget planned for September 2017 board meeting



South Platform Improvements



Central Plaza & Bus Bays



Main Plaza

July 2017



On target



Possible problem



Major issue



Metro 8

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METRO BLUE LINE PROJECTS

<u>Project Name</u>	Budget	Percent Completed	Forecast Completion	Status
• Station Refurbishment	\$30.4M	100%	Completed	OK
• Pedestrian Gates	\$30.2M	85%	Oct 2017	OK
• City of Long Beach Fare Gates Design (PE)	\$7M*	85%(PE)	Aug 2017	OK
• Blue Line Rehabilitation (OCS, Signals, Div. 11)	\$119M*		Aug 2021**	
Total: \$186.6M				



*Budget Estimate **Project Closeout

July 2017



On target



Possible problem



Major issue



Metro

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Crenshaw/LAX Transit Project

Change Activity

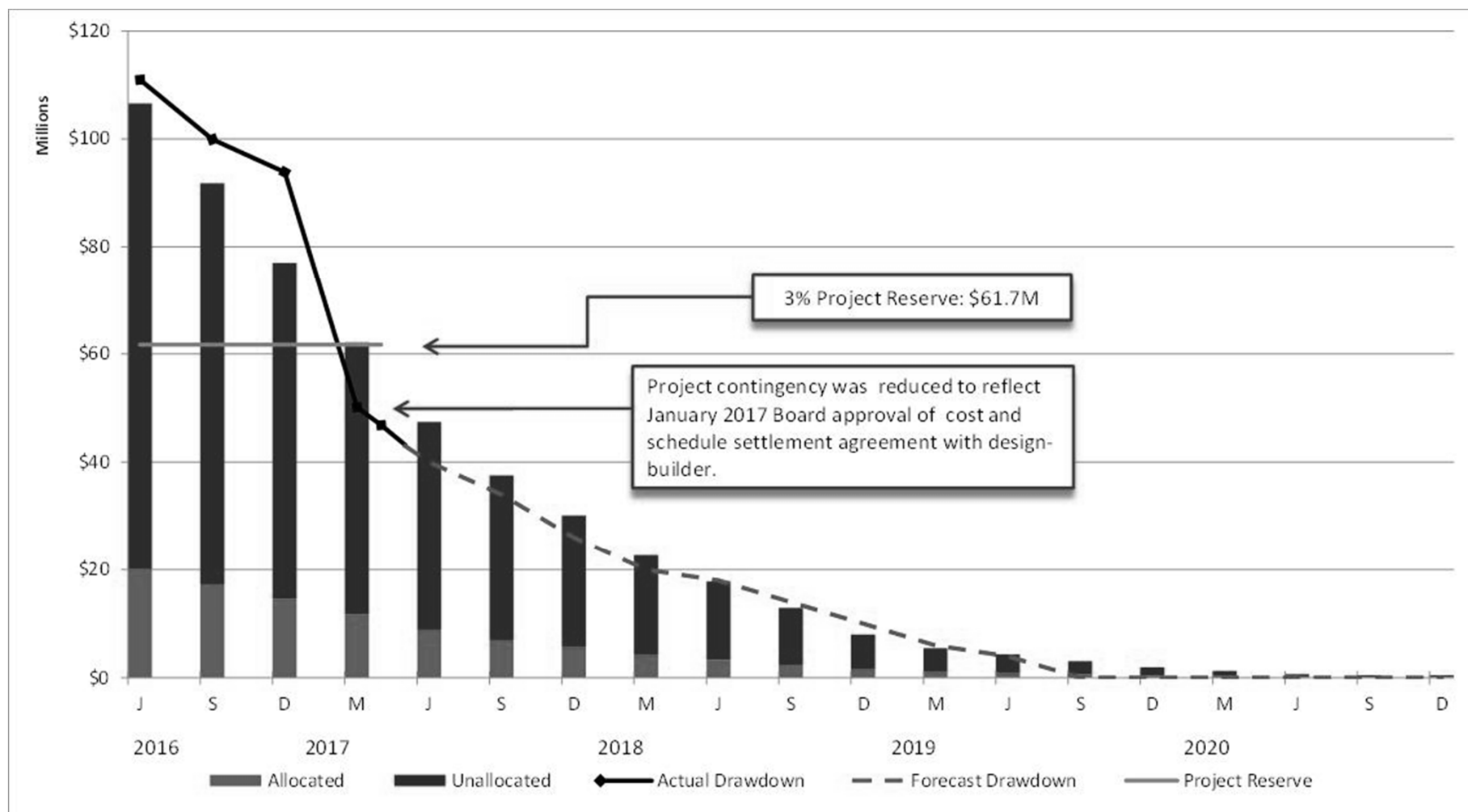
May 2017

Change Notice #	Description	Mod/ Change Orders	Cost Value
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS AND APPROVED CHANGE ORDERS		288	\$ 69,520,730.00
TOTAL PENDING MODIFICATIONS AND CHANGE ORDERS ROUGH ORDER OF MAGNITUDE COST		14	\$ 589,907.00
CONTRACT C0988			
MOD 00256	Black Diamond Vault 5436 Crenshaw Bl		Less than \$1 million
MOD 00271	Clarify Integration with MGL-Design		Less than \$1 million
MOD 00272	Expo Park and Ride Lot Deletion-Dsgn		Less than \$1 million
MOD 00276	TPSS #3 Redesign for SCE Power		Less than \$1 million
CO 00163	Added Crsovr N. Arbor Vitae-Spcl Track		Less than \$1 million
MOD 00234	LADOT Fiber Optic Cable Betterment		Less than \$1 million
MOD 00269	Remove Trees over MWD Easement		Less than \$1 million
MOD 00270	Unit Rates for Incidental Const Work		Less than \$1 million
CO 00129	Elimination Crosver Sta 56+57.50		Credit Less than \$1 million
CO 00136	Relocate Qwest Pullbox at Hindry Ave		Less than \$1 million
CO 00140	Disp Remove Contam. Soil STA 182+25		Less than \$1 million
CO 00164	DWPPS Power Feed to TPSS #8		Less than \$1 million
CO 00169	Unforeseen Concrete at 104th Bridge		Less than \$1 million
CO 00170	Update Sta Cstmr Signge Dir-CONSTR		Less than \$1 million
TOTAL MODIFICATIONS AND CHANGE ORDERS		302	\$ 70,110,637.00
PROFESSIONAL SERVICES CONTRACT			
CONTRACT E0117			
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS AND APPROVED CHANGE ORDERS		42	\$ 59,217,720.00
TOTAL PENDING MODIFICATIONS AND CHANGE ORDERS ROUGH ORDER OF MAGNITUDE COST		0	\$ -
Design Support Services During Construction			
TOTAL MODIFICATIONS AND CHANGE ORDERS		42	\$ 59,217,720.00
CONTRACT MC069			
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS AND APPROVED CHANGE ORDERS		16	\$ 53,350,394.00
TOTAL PENDING MODIFICATIONS AND CHANGE ORDERS ROUGH ORDER OF MAGNITUDE COST		0	\$ -
Construction Management Support Services			
TOTAL MODIFICATIONS AND CHANGE ORDERS		16	\$ 53,350,394.00

Crenshaw/LAX Transit Project

Project Cost Contingency Drawdown

May 2017

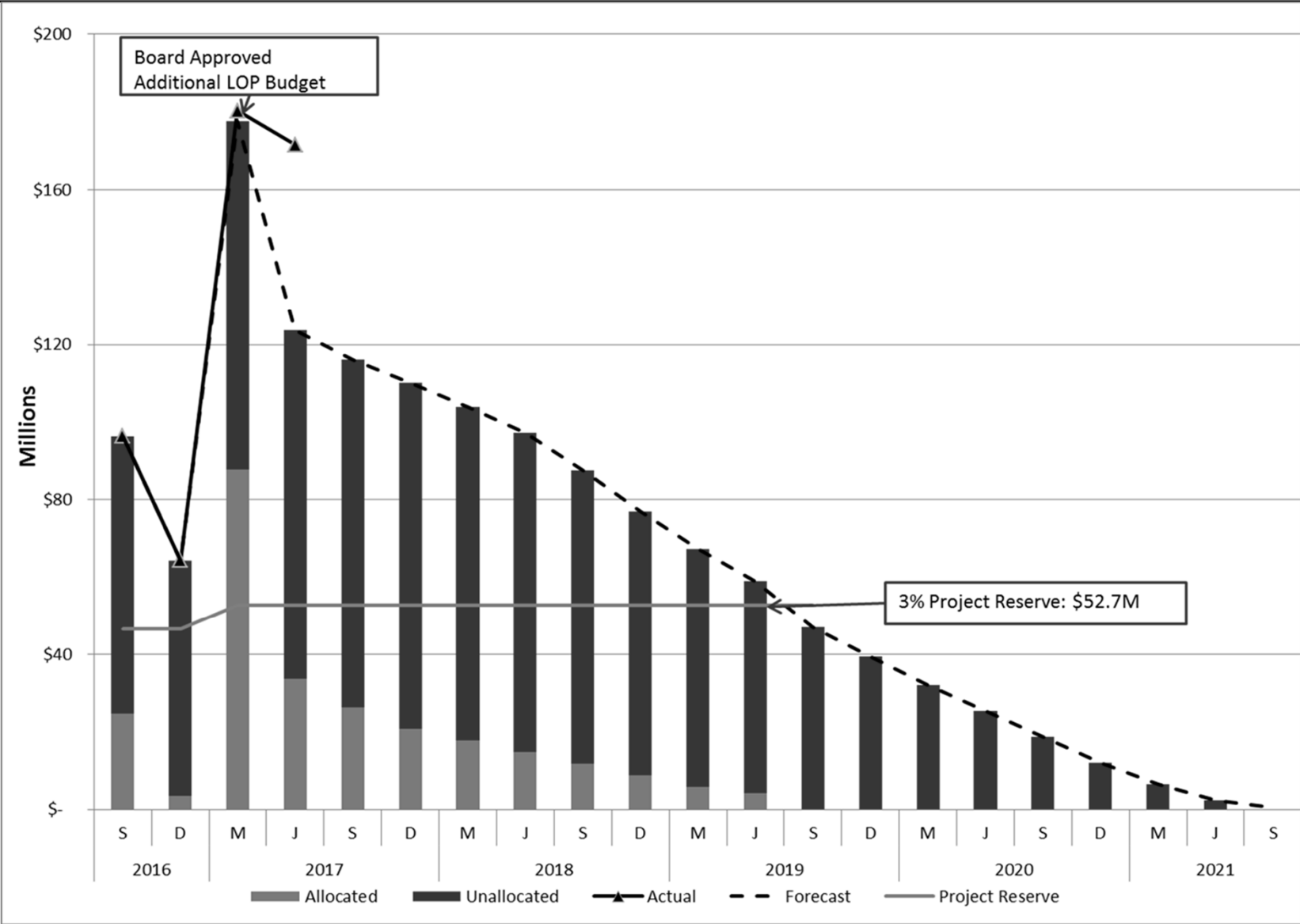


Regional Connector Change Activity

May 2017

Change Notice #	Description	Number of Mod/Change Orders	Cost Value
DESIGN BUILD CONTRACT			
TOTAL VALUE OF ALL EXECUTED CONTRACT MODIFICATIONS AND CHANGE ORDERS:		85	\$ 136,510,197
TOTAL PENDING MODIFICATIONS AND CHANGE ORDERS ROUGH ORDER OF MAGNITUDE COST:		30	\$ 75,216,784
	1st/Alameda Bumpout (Construction)		Less Than \$1 Million
TBD	Flower Street Modification: future 2-way Traffic /Bumpout/Ped Lighting (Construction Only)		Between \$1 and \$5 Million
TBD	Revise Metro Rail Station Signage and Incorporate Metro Underground Station Signage (Construction)		Less Than \$1 Million
TBD	Add Wye Junction Fan Plant - Construction		Between \$10 and \$15 Million
TBD	Fully Coupled Dynamic Analysis for SEM Cavern		Less Than \$1 Million
50.0	Revisions to TPIS Requirements -Construction		Less Than \$1 Million
66.0	Commonwealth Agreement Provisions		Less Than \$1 Million
68.0	Flower Street Zanja Additional Potholing		Less Than \$1 Million
78.0	ATT Ductbank Relocation @ Hewitt		Less Than \$1 Million
79.0	Deputy Grading Inspector 2nd/Broadway Station SOE		Less Than \$1 Million
86.0	Flower Maintenance of Traffic (MOT) West Piles		Less Than \$1 Million
87.0	Support Veolia 24" Chilled Water Pipes at 2nd/Hope Station		Less Than \$1 Million
99.0	Option 3 Pedestrian Bridge Revisions / Broad Coordination (Construction)		Between \$1 and \$5 Million
103.0	1st/Central Station HMI Units for Escalator Controllers		Less Than \$1 Million
TBD	Add One Add 1 VHF Radio Operational Channel - Construction		Less Than \$1 Million
105.0	Revise Flower SOE to Construct TBM Retrieval Pit (Construction)		Between \$1 and \$5 Million
106.0	Revisions to Metro Optical Network Switch		Less Than \$1 Million
TBD	Revise Communication Radio System SOW (Construction)		Less Than \$1 Million
TBD	Infrastructure for Insite Wireless in Tunnels		Less Than \$1 Million
TBD	Add Perforated Metal Dropped Ceiling at 2nd/Hope Station Plaza - Construction		Less Than \$1 Million
107.0	Delays and schedule mitigation measures, electrical and water utility relocation costs, add 1 fire life safety engineering and other design and construction changes		More than \$15 Million
111.0	Spray-on Acoustical Finishes Additional Quantities		Between \$1 and \$5 Million
113.00	Waterline Alignment Modifications on Flower		Less Than \$1 Million
TBD	Revised Emergency Walkways at Curves (30" to 35") - Construction		Less Than \$1 Million
119.0	Metro Board Adopted Station Names		Less Than \$1 Million
121.00	Utility Conflicts during Decking at 4th & Flower St		Less Than \$1 Million
122.00	Asbestos Abatement on Flower St thru May 2017		Less Than \$1 Million
124.00	Blue Light Stations		Less Than \$1 Million
125.00	2nd/Broadway & Mangrove Environmental Changes		Less Than \$1 Million
127.00	2nd Gantry Crane at Mangrove Yard		Less Than \$1 Million
TOTAL MODIFICATIONS AND CHANGE ORDERS		115	\$ 211,726,981
PROFESSIONAL SERVICES CONTRACT			
Design Support Services During Construction			
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS		11	\$ 44,629,810
TOTAL PENDING MODIFICATIONS ROUGH ORDER OF MAGNITUDE COST		1	\$ 0
28.0	No Cost - Period of Performance Extension thru 06/30/2018		\$ 0
TOTAL MODIFICATIONS		12	\$ 44,629,810
Construction Management Support Services			
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS		4	\$ 35,630,672
TOTAL PENDING MODIFICATIONS ROUGH ORDER OF MAGNITUDE COST		1	\$ 0
11.0	No Cost - Period of Performance Extension of CMSS thru 06/30/2018		\$ 0
TOTAL MODIFICATIONS		5	\$ 35,630,672

Regional Connector Project Cost Contingency Drawdown



Westside Purple Line Extension – Section 1

Change Activity

May 2017

Change Notice #	Description	Number of Mod/Change Orders	Cost Value
TOTAL VALUE OF ALL EXECUTED CONTRACT MODIFICATIONS AND CHANGE ORDERS:		137	\$ 11,884,245
TOTAL PENDING MODIFICATIONS AND CHANGE ORDERS ROUGH ORDER OF MAGNITUDE COST:		34	More than \$15M
DESIGN/BUILD CONTRACT C1045			
		23	
CN-25.2	Revisions to Transit Passenger Information System (TPIS) Requirements		Less Than \$1 Million
CN-26	Betterment City of Beverly Hills - Median Reconstruction at San Vicente Blvd		Less Than \$1 Million
CN-32	Pin Station (Identifier) Changes		Less Than \$1 Million
CN-37.2	Revisions to Metro Optical Network		Less Than \$1 Million
CN-39.1	Revision to Metro Station Signage		Less Than \$1 Million
CN-42.3	Radio Subsystem Redundancy		Less Than \$1 Million
CN-43.2	Isolate Track Circuits at Wilshire/Western		Less Than \$1 Million
CN-47.1	Stainless Steel Enclosure for TVM and PTEL		Less Than \$1 Million
CN-56	Implement City of Beverly Hills Memorandum of Agreement (MOA)		Between \$10M - \$15M
CN-57.1	Additional Geotech Monitoring at La Cienega (Support of Deviation Request)		Less Than \$1 Million
CN-63	La Brea- Additional Instrumentation Requested by BOE		Less Than \$1 Million
CN-64.1	Additional SOE Design Work - La Brea Station		Less Than \$1 Million
CN-65.1	Additional SOE Design Work for Fairfax Station Due to Deviation Request for Building Settlement		Less Than \$1 Million
CN-66	La Brea - Dewatering Changes		Less Than \$1 Million
CN-67	Tactile Guidance - Construction Effort and Material Change		Less Than \$1 Million
CN-68	Increased Ventilation of Station Ancillary Rooms		Less Than \$1 Million
CN-72	Stations - Art Related Changes		Less Than \$1 Million
CN-76	Additional SOE Design Work for La Cienega Station Due to Deviation Request for Building Settlement		Less Than \$1 Million
CN-77	Additional Interpretation for Building Settlement		Less Than \$1 Million
CN-78	Fairfax - DWP Ductbank Conflict with Deck Beams		Less Than \$1 Million
CN-79	Western - Property Status Change (FEE TO TCE) Impacts, Parcel W-0103		Less Than \$1 Million
CN-80	La Cienega - Emergency Generator Enclosure		Less Than \$1 Million
TBD	Fairfax - Piling Obstructions, Conflicts, Delays		Less Than \$1 Million
DESIGN/BUILD CONTRACT C1078			
		11	
CO5/CN-10	Revised Building Construction Impacts		Between \$1M - \$5M
CN-11	Schedule Impacts Due to Third Party		Less Than \$1 Million
CN-12	Betterment - Motorized Sliding Gate for the City of LA		Less Than \$1 Million
CN-8	Relocation of 8-inch Sanitary Sewer		Less Than \$1 Million
TBD	Betterment City of LA - Install Street Lights, Trees and Drip Irrigation		Less Than \$1 Million
TBD	Support of Building Art Work		Less Than \$1 Million
TBD	Betterment City of LA - 6th Street Viaduct - Site RE-gragind, Ornamental Fence, etc.		Less Than \$1 Million
TBD	Hazardous Materials - Chalmers Pan Handle		Less Than \$1 Million
TBD	Storm Drain - Differing Site Conditions		Less Than \$1 Million
CN-13	AST Leak Detection and Remote Lubrication Fill/Extract Station		Less Than \$1 Million
TBD	Building Improvements - Increased Foot Print, Larger Rooms		Less Than \$1 Million
TOTAL MODIFICATIONS AND CHANGE ORDERS		171	
PROFESSIONAL SERVICES CONTRACTS			
Design Support Services During Construction - CONTRACT PS43502000			
TOTAL VALUE OF ALL EXECUTED CONTRACT MODIFICATIONS:		21	\$ 80,391,662
TOTAL PENDING MODIFICATIONS		1	
CN-61	Continuation of Design Support During Construction		Between \$5M - \$10M
TOTAL MODIFICATIONS AND CHANGE ORDERS		22	
Construction Management Support Services - CONTRACT MC071			
TOTAL VALUE OF ALL EXECUTED CONTRACT MODIFICATIONS:		3	\$ 39,731,796
TOTAL PENDING MODIFICATIONS		1	
CN-5	Continuation of Construction Management Support Services		More Than \$15 Million
TOTAL MODIFICATIONS AND CHANGE ORDERS		4	

Westside Purple Line Extension Section 2 Project

Change Activity

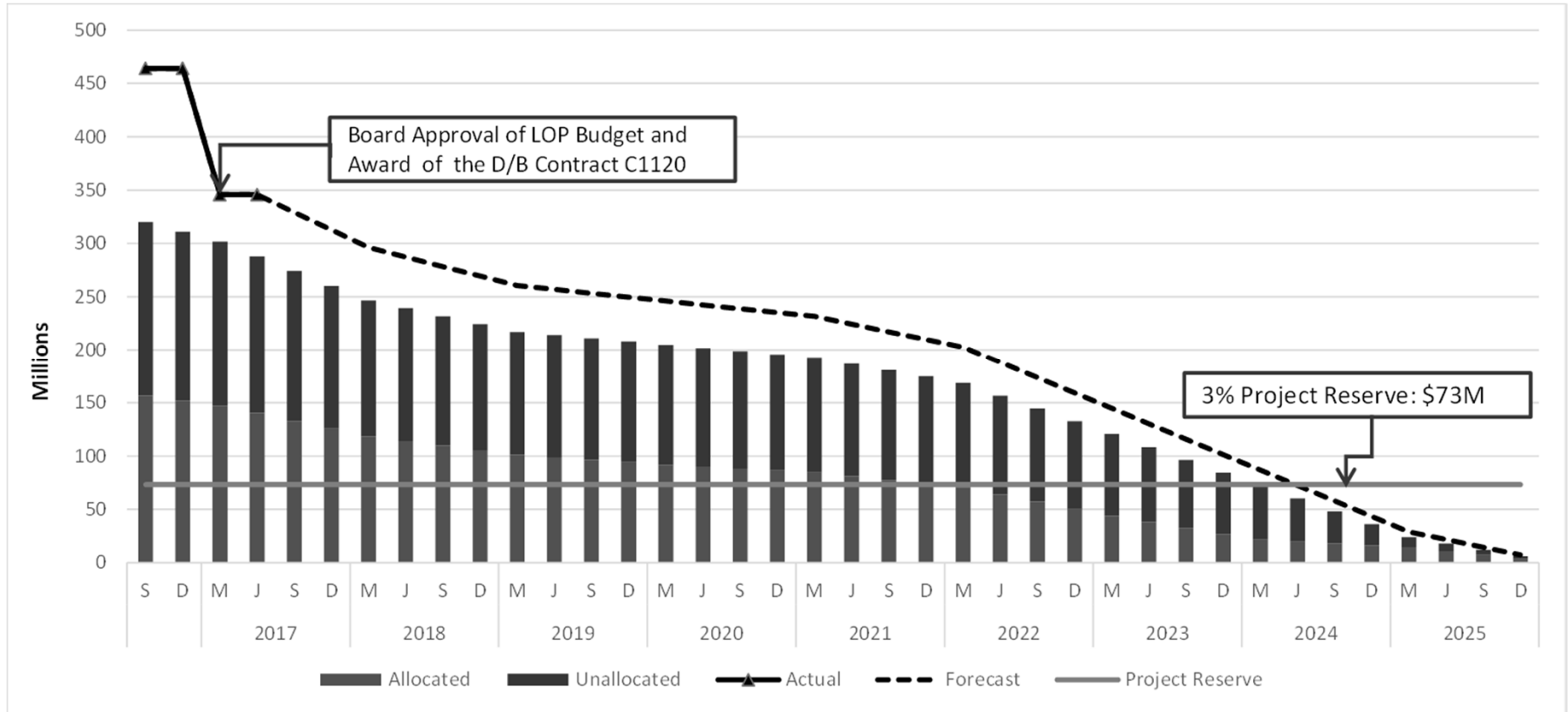
May 2017

Change Notice #	Description	Number of Mod/ Change Orders	Cost Value
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS AND APPROVED CHANGE ORDERS		0	\$ -
TOTAL PENDING MODIFICATIONS		5	\$ -
DESIGN/BUILD CONTRACT C1120			
CN-1.1	Century City Constellation Station West Ancillary & OPE Reconfiguration (Design)		Less Than \$1 Million
CN-2	Geotechnical and Environmental Investigation Program		Less Than \$1 Million
CN-3	Century City Constellation Station: Main Entrance (Design)		Less Than \$1 Million
CN-4	Third Party Utility Final Design		Less Than \$1 Million
CN-X	AT&T Building Demolition		Between \$1 and \$5 Million
TOTAL MODIFICATIONS AND CHANGE ORDERS		5	\$ -
PROFESSIONAL SERVICES CONTRACT			
Design Support Services During Construction			
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS		0	\$ -
TOTAL PENDING MODIFICATIONS		0	\$ -
TOTAL MODIFICATIONS AND CHANGE ORDERS		0	\$ -
Construction Management Support Services			
TOTAL VALUE OF EXECUTED CONTRACT MODIFICATIONS		0	\$ -
TOTAL PENDING MODIFICATIONS		0	\$ -
TOTAL MODIFICATIONS AND CHANGE ORDERS		0	\$ -

Westside Purple Line Extension – Section 2

Project Cost Contingency Drawdown

May 2017



IMPLEMENT BEST PRACTICES TO PROJECT DELIVERY

- Deliver the nation's largest transportation capital program
- OIG's Capital Project Construction Management Best Practices Study
- Implement strategies in the Program Management Plan approved by the Board
- Commit to achieving continuous improvement in project delivery through innovation, application of best practices and high standards

IMPLEMENT BEST PRACTICES TO PROJECT DELIVERY

Implement tools bringing improved planning, consistency, transparency, and discipline to project delivery:

- Establish more reliable Life-of-Project budgets
- Conduct Annual Program Evaluation (APE) of Metro's capital program
- Implement Board-approved Pilot LOP Budget Program on Major Transit Projects
- Engage a robust Program Management Support Services (PMSS) consulting team to support delivery of multiple large and complex projects on-time and within budget

IMPLEMENT BEST PRACTICES TO PROJECT DELIVERY

- Change Control Procedure
- Project Readiness Procedure
- Project Delivery Selection Procedure
- Program Management Leadership Institute
- Risk Management Program
- Lessons Learned Report and Program

July 2017

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IMPLEMENT BEST PRACTICES TO PROJECT DELIVERY

Lessons Learned:


- Contract Administration and Change Order Control
- Establishing and Managing Reliable Budget Baselines & Life-of-Projects
- Engage Third Parties Early
- Uniform Enforcement of Scheduling Specification
- Advancing Projects Beyond 30% Design Prior to Design-Build Procurement
- Claims Avoidance
- Estimate Preparation for Change Negotiations
- Right of Way Acquisition
- Use of Contractual Monetary Incentives
- Operations and Maintenance Requirements Coordination with Design Specifications
- Adequate Project Support Resources
- Standardizing Contract Languages

July 2017

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PROJECT MANAGEMENT

 One side of the triangle cannot be changed without affecting the other sides:

