

**Board Report**

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Agenda Number: 15.

FINANCE, BUDGET AND AUDIT COMMITTEE**SEPTEMBER 14, 2016****CONSTRUCTION COMMITTEE****SEPTEMBER 15, 2016**

SUBJECT: FISCAL YEAR 2017 PROGRAM MANAGEMENT ANNUAL PROGRAM EVALUATION (APE)

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE report on the first **Program Management Annual Program Evaluation (APE)**.

ISSUE

In the Chief Executive Officer's January 2016 State of the Agency address, the Annual Program Evaluation (APE) was introduced as a priority initiative to evaluate Metro's Capital Program. Given the challenges of managing a multi-billion dollar capital program, a comprehensive review of the risks associated with the cost and schedules of the program is to be conducted on an annual basis. This report summarizes the results of the first APE initiative performed by Program Management.

DISCUSSION**Introduction of APE**

The APE initiative is a comprehensive evaluation of Metro's Capital Program, including Transit, Highway, and Regional Rail projects. As part of the APE process, staff reviewed and updated project costs and schedule to current conditions and challenges. Any changes to project budgets/schedules and the reasons for the adjustments are to be reported to the Board annually for approval. In addition, APE serves as a project management tool bringing greater consistency, transparency, and discipline in project managers to better manage and deliver Board-approved projects. The APE is a dynamic tool, which is updated annually as projects move towards completion and any changes approved by the Board are incorporated.

FY2017 APE

For the FY2017 APE, Program Management focused on new and carry-over projects to FY2017 with project cost estimated at least \$5 million or greater. Program Management staff evaluated sixty-one

projects, including 29 Transit projects, 25 Highway projects, and 7 Regional Rail projects (see Attachment A for a complete project listing) which total approximately \$11 billion.

Since many of Metro Transit projects are in construction or near completion, the major focus is on managing the projects within the Board-approved life-of-project (LOP) budgets and schedules established for these projects.

A summary of the potential adjustments to the Metro's Capital Program in FY17 is reported in the FY2017 Program Management APE presentation (Attachment A; pgs. 39-40).

FINANCIAL IMPACT

The FY17 Program Management APE report does not have any specific budgetary or financial impacts. The APE report serves as an annual and early notice instrument to assess the scope, cost and schedule risk items affecting the respective projects under the oversight of Program Management. Risk items affecting scope, cost and schedule are identified on a project by project basis within the APE Presentation (Attachment A).

Should any of the potential project risks affecting scope, cost and schedule parameters be realized, the Chief Program Management Officer and affected project staff will return to the Board with separate board report recommendations to address the identified risks and adjust the project element (s) of the Board adopted project parameters.

NEXT STEPS

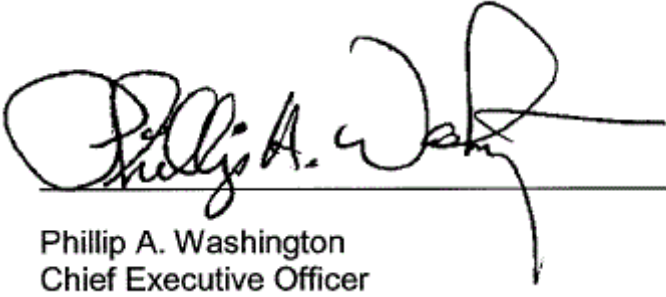
Staff will manage to deliver projects on-time and within the Board-approved budgets. Staff will continue to provide the Board with monthly updates on the project status throughout the year. The next FY2018 Program Management APE report will be presented to the Board in Spring 2017.

ATTACHMENTS

Attachment A - Fiscal Year 2017 Program Management Annual Program Evaluation (APE) presentation

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Phillip A. Washington
Chief Executive Officer



Fiscal Year 2017 Program Management Annual Program Evaluation (APE)



Presentation Overview

- APE Purpose and Process
- Metro Capital Program Status
- Metro Capital Program Cost
- Adjustments for FY2017 APE
- Summary
- Next Steps



APE Purpose

- Annual evaluation of Metro's capital program
- Reporting to the Board any project budget and schedule changes, and reasons for the changes
- A project management tool bringing greater consistency, transparency, and discipline
- Facilitates financial planning



APE Process

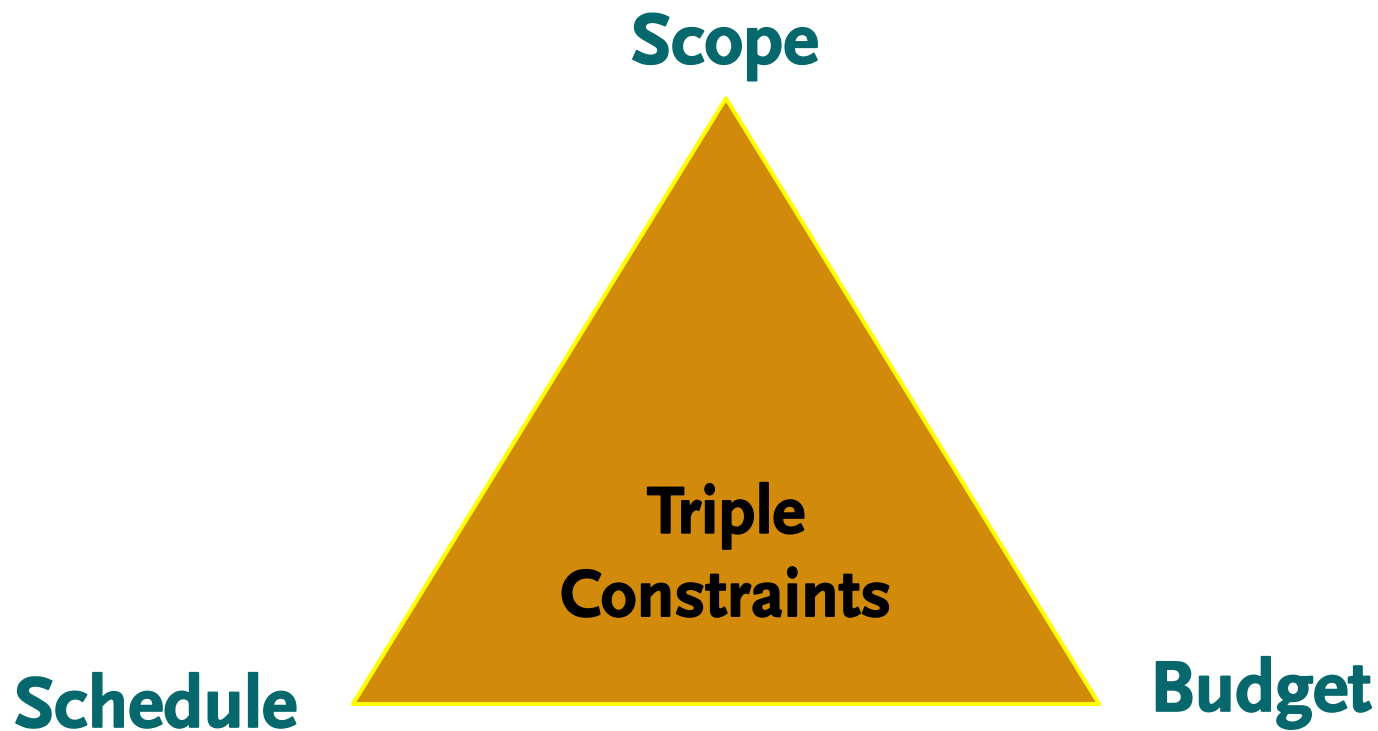
- A review of project costs and schedule
- Update project capital cost estimates to current conditions, including price trends and changes
- Focus on budget to complete current project phase/milestone
- Include APE results in future fiscal year annual budget review and adoption by the Board



Project Management



One side of the triangle cannot be changed without affecting the others:



FY17 APE Scope

- Focus on 61 capital projects with total project cost greater than \$5M being managed by Program Management:
 - Major Transit Construction Projects – 5 projects
 - Other Transit Capital Projects – 24 projects
 - Regional Rail Projects – 7 projects
 - Highway Program – 25 projects
- Project budgets in the APE focus on authorized funding project amount

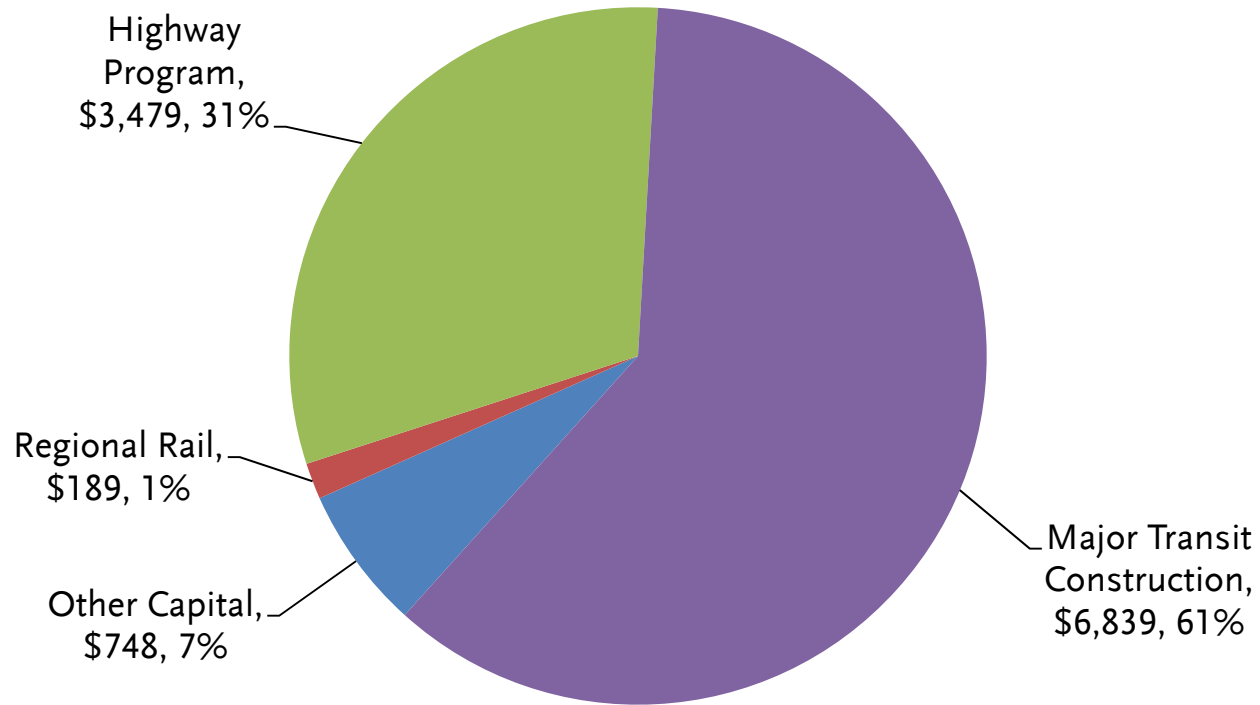


FY17 APE Scope

- In addition to the projects in APE, Program Management also manages/oversees an additional 100+ projects
- In total, Program Management manages a volume of 160+ projects with a total authorized value at approximately \$12B
- Approximately \$11B projects are included in the FY17 APE review



FY17 APE Current Program: \$11 B



Metro Transit Program



Metro Transit Capital Projects

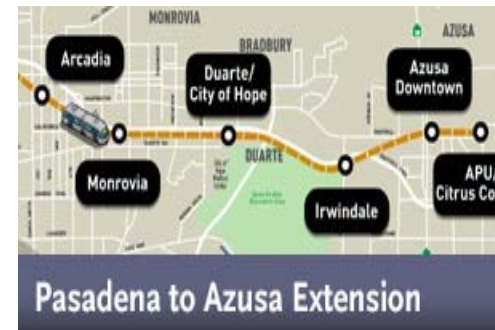
Type	Project Budget	# of Projects
Major Transit Construction	\$6,839	5
Other Transit Capital	\$748	24
Rail Facilities Improvements	\$229	6
Bus Facilities Improvements	\$218	10
Wayside System	\$124	2
Security/Safety	\$124	2
Misc. Capital Projects	\$53	4
Total Transit Capital Program	\$7,587	29



Metro Transit Capital Program Status

6 Projects Completed in FY2016

- Metro Blue Line Station Enhancements Project – December 2015
- Division 13 Bus Operation & Maintenance Facility – January 2016
- Metro Rail Security Kiosks – March 2016
- Metro Gold Line Foothill Extension – March 2016
- Metro Red Line Universal City Pedestrian Bridge – April 2016
- Exposition Blvd Light Rail Transit Phase 2 – May 2016



Metro Transit Capital Program Status Con't

4 Projects Planned to Be Completed in FY17

- Metro Red Line to Orange Line Underpass at North Hollywood Station – July 2016
- Division 3 Master Plan Phase II-IV – June 2017
- Fuel Storage Tank System Enhancements (FY15 - FY17) – June 2017
- Bus Facility Maintenance Improvements & Enhancements Phase I – June 2017



Crenshaw/LAX Transit Project



Crenshaw/LAX Transit Project

Project Budget: \$2,058M

Project Completion: October 2019

% Project Complete: 52%

Accomplishments:

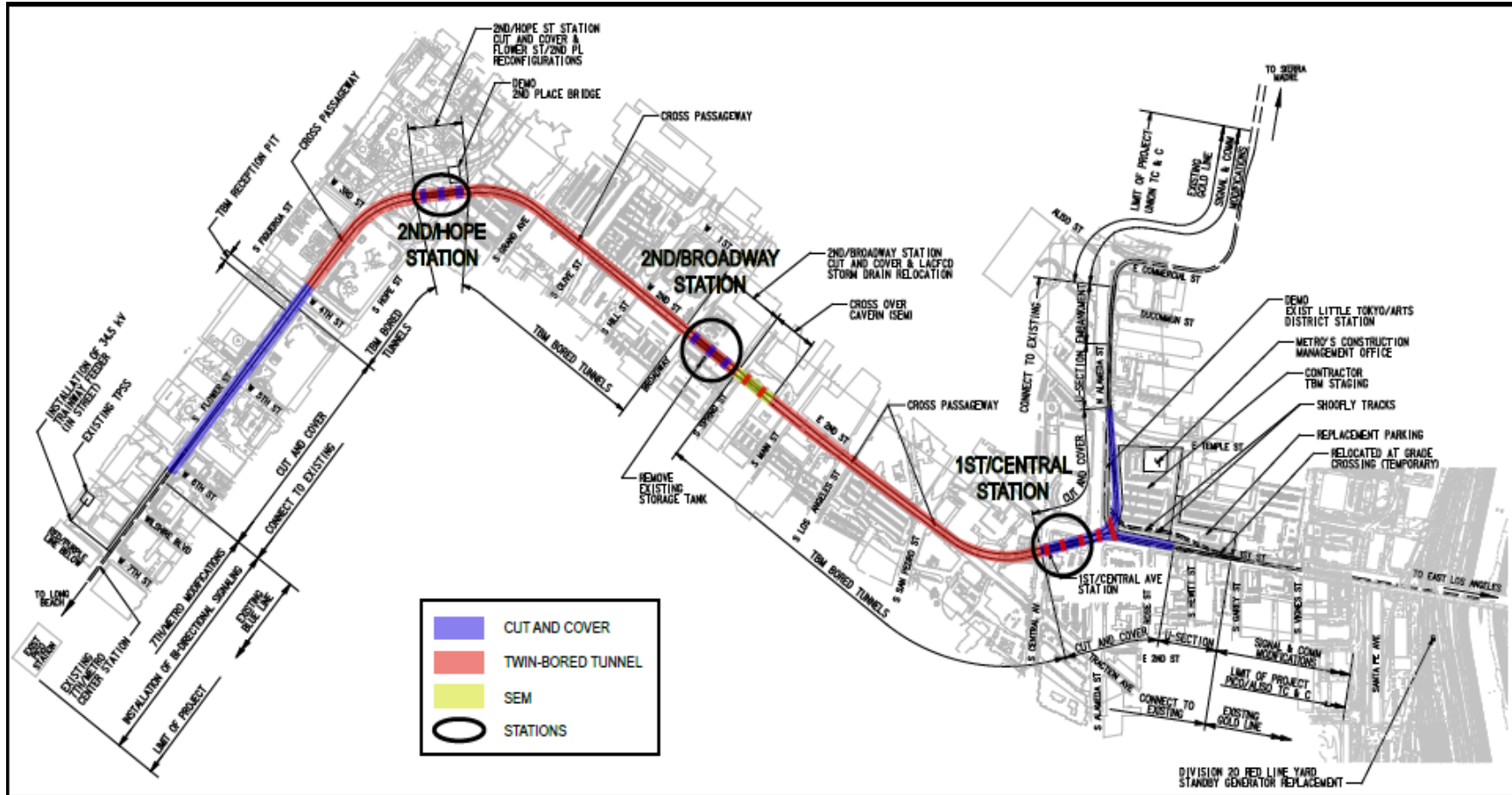
- Project at halfway mark
- Final design of base work is complete with only design continuing for change work
- Critical tunneling work commenced in late April and has entered the MLK Expo/Crenshaw Station site

Challenges / Risks:

- Track alignment changes to incorporate accommodations to not preclude a future LRT station at 96th Street results in changes to base scope, budget, and schedule
- Contractor's ability to meet the tunneling productivity level
- Timely resolution of merit and quantum for valid contractor claims
- Submittal and approval of a revised contractor's baseline schedule
- Resolution of potential betterments being considered by the City of LA
- Continuous efforts to meet community expectations



Regional Connector Transit Project



Regional Connector Transit Project

Project Budget: \$1,551.8 M

*Excludes planning and finance costs

Project Completion: July 2021

% Project Complete: 23%

Accomplishments:

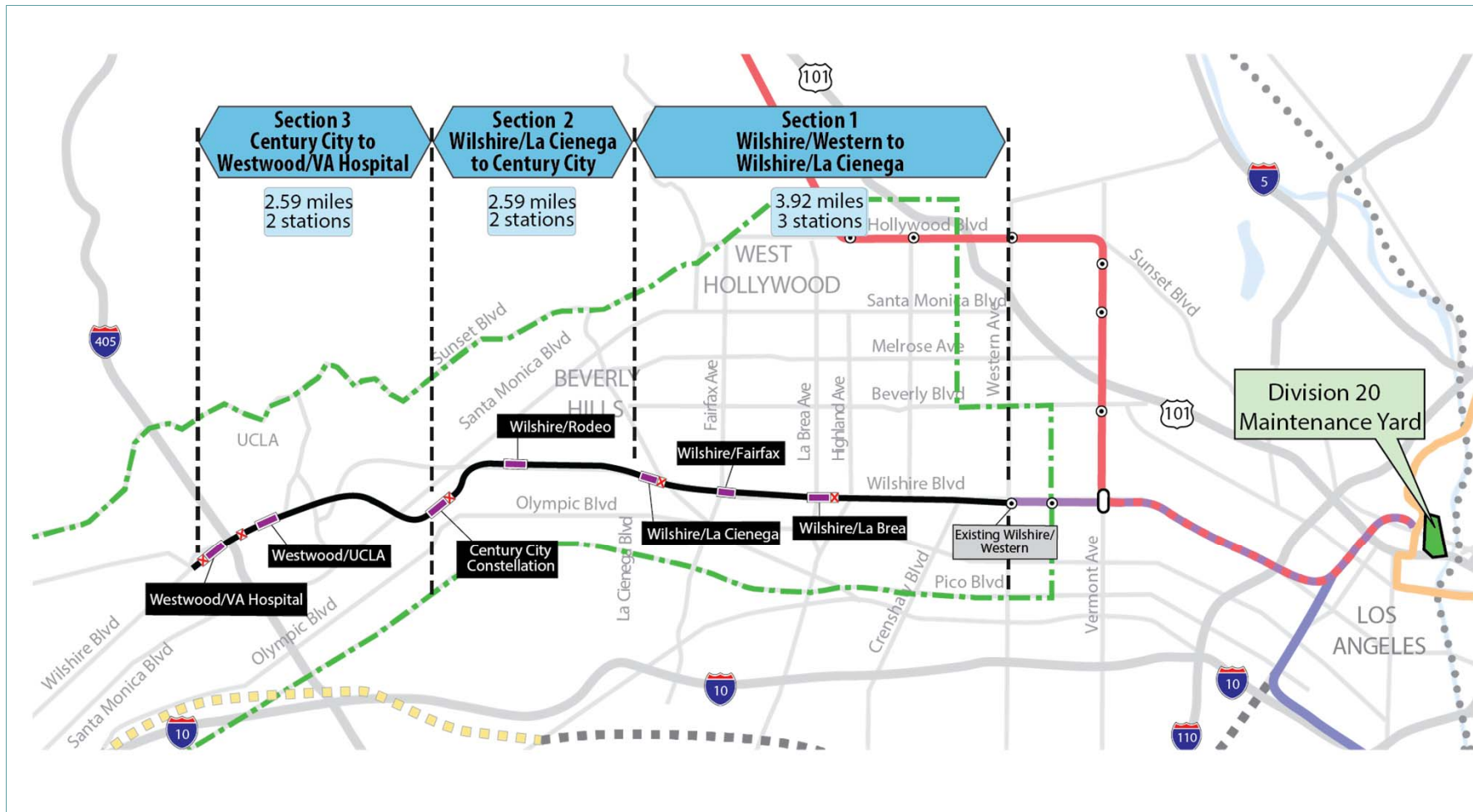
- 1st/Alameda Shoofly work completed on schedule
- 1st/Central Station Box fully excavated; permanent works now underway

Challenges/Risks:

- Obtaining continued City of LA support for, and approval of, the necessary traffic control and extended work hour permits to effectively work in a dense urban setting
- Continue to redefine schedule options to the extent possible as a result of early experienced delays due to utility relocation issues
- Conclusion of contractor negotiations on schedule recovery measures related to delayed utility relocations
- Safely prosecute underground construction across Alameda Street to facilitate placement, and launching of tunnel boring machine (TBM) and the timely excavation of the related TBM recovery shaft on Flower Street
- Defining current and projected cost trends into a revised cost at completion forecast; seek budget adjustments accordingly. This action is expected to be guided upon completion of FTA risk assessments



Westside Purple Line Extension Project



Westside Purple Line Extension Section 1

Project Budget: \$2,778.9M
(Excludes finance costs)

Project Completion: November 2023
% Project Complete: 12%

Accomplishments:

FY16

- Awarded and Issued NTP for Design-Build Contract of Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building 61S.
- AUR Contract Wilshire/Fairfax achieved substantial completion, ahead of schedule and within budget (second of three AUR contracts to have been completed).
- Completed all environmental property abatement/remediation along the Project alignment and gave access to all properties to the Tunnels, Stations, Trackwork, Systems and Testing Contractor.
- The planned 22-weekend closures began on June 10, 2016 for the installation of deck beams and concrete deck panels prior to the Wilshire/La Brea Station excavation under the temporary street decking.

FY17

- Complete final design on Division 20 Maintenance-of-Way and Non-Revenue Vehicle Building 61S and Westside Purple Line Extension Section 1 Design-Build contracts
- Wilshire/La Brea and Wilshire/Fairfax Stations installation of deck beams and concrete deck panels are planned to be completed. Wilshire/Fairfax Station excavation is planned to begin and Wilshire/La Brea Station excavation will near completion
- Site preparation work and construction mobilization activities have begun at the Wilshire/La Cienega Station. Installation of station piles are planned to begin and will near completion
- AUR Contract Wilshire/La Cienega is planned to achieve substantial completion, ahead of schedule and within budget (last of the three AUR contracts to complete)



Westside Purple Line Extension Section 2

Approved Budget through FY17: \$ 358.5 M

Project Completion: August 2025

Working Project Estimate: \$ 2,410.5 M

(Excludes planning and finance costs)

Accomplishments:

- Received Proposals for Contract Management Support Services (CMSS) contract in April 2016, currently under evaluation, award anticipated October 2016
- Received Proposals for Design-Build contract in June 2016, currently under evaluation, award anticipated January 2017
- Began design of advanced relocation of utilities
- Construction of the telecom joint trench at Century City Constellation has begun
- Real Estate certifications and acquisitions are underway
- In August 2016, U.S. District Court issued final remedy ruling in the NEPA lawsuits brought by Beverly Hills. The judge declined to vacate FTA's approval of the project; FTA can execute an FFGA with Metro for the project. The judge is requiring that FTA prepare a Supplemental Environmental Impact Statement (FFGA), which Metro is preparing with FTA's guidance for completion in Spring 2017

Challenges/Risks:

- Receive a FFGA and a Transportation Infrastructure Finance and Innovation Act (TIFIA) Loan



Westside Purple Line Extension Section 3

Projected Budget through FY17: \$51.5M
Working Project Estimate: TBD

Project Completion: TBD

Accomplishment:

- Advanced preliminary engineering and design of advanced relocation of utilities to advance the project delivery under Operation Shovel Ready Program of Projects

Challenge/Risk:

- Project funding commitment



Patsaouras Plaza Busway Station

Project Budget: \$ 39.7 M

Project Completion: December 2017

Accomplishments:

- Completed final design

Challenges/Risks:

- Maintain Third Party cooperation review/approval, including Caltrans, to be consistent with project schedule
- DWP vault and conduit relocation
- Utility relocation must be completed by August 2016 to avoid conflicts with foundation construction
- Budget impacts due to design changes or unforeseen underground conditions



Metro Blue Line Signal Rehabilitation Project

Project Budget: \$ 93.6 M Project Completion: August 2020

Accomplishments:

- Solicitation released in March 2016, design-build proposals due October 2016
- Secured additional funding from State Cap & Trade Transit and Intercity Rail Capital Program (TIRCP) for \$38.5 million

Challenges/Risks:

- Track allocations coordination with other projects/maintenance on Metro Blue Line
- Existing aged ductbank/conduits may require replacement
- Additional right-of-way needed for new Slauson Interlocking bungalow near 51st Street
- Meet December 2016 Cap & Trade deadline for funding
- Receiving technically acceptable competitive proposals



New train control



Project adds 6 Crossovers



Metro Red Line to Metro Orange Line North Hollywood Station West Entrance

Project Budget \$ 23M

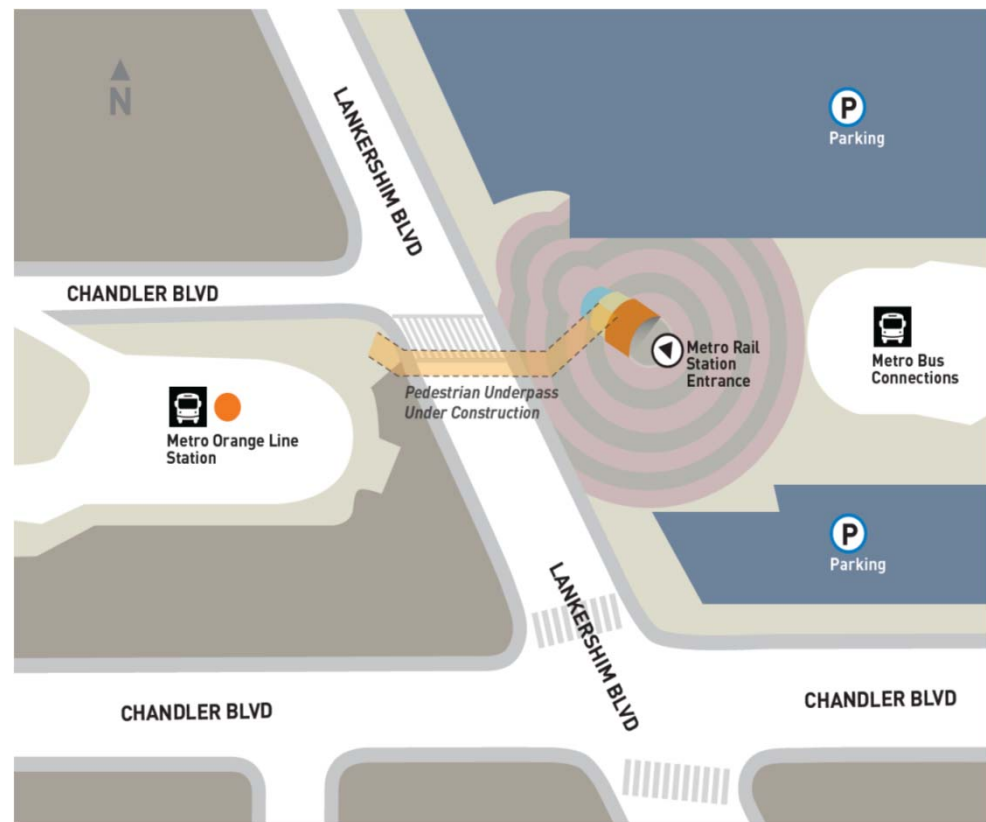
Project Completion: August 2016

Accomplishment:

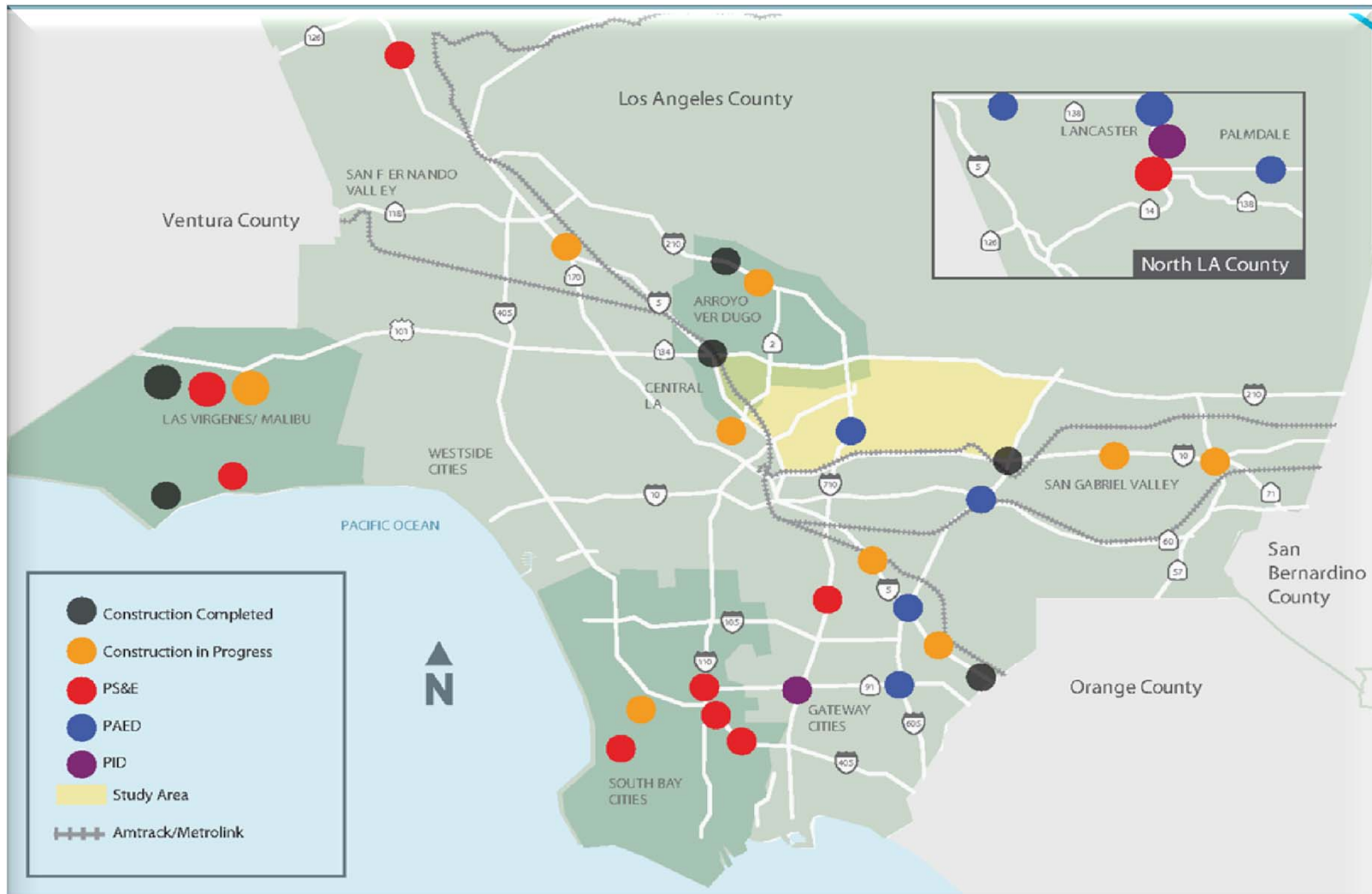
- Project substantial completion in August 2016

Challenge:

- Timely contract close-out



Highway Program





Highway Program Status Summary (Measure R Funded)

#	Project	Current Phase	Estimated Cost of Current Phase (\$mil.)	Phase Completion
1	I-5 South - Alondra	Construction	\$114.07	Completed
2	I-5 South – Valley View Interchange	Construction	\$631.12	Feb 2020
3	I-5 South – Shoemaker, Rosecrans, Bloomfield	Construction	\$188.22	Aug 2017
4	I-5 South – San Antonio, Imperial Hwy and Orr Day	Construction	\$323.29	May 2018
5	I-5 South – Florence	Construction	\$211.67	Sep 2019
6	I-5 South - Carmenita Interchange	Construction	\$419.88	Dec 2018
7	I-5 North - HOV from SR 118 to SR 170	Construction	\$219.49	Completed
8	I-5 North - HOV from SR 170 to North of Buena Vista	Construction	\$94.72	Completed
9	I-5 North – North of Buena Vista to South of Magnolia Blvd	Construction	\$402.38	Jan 2020
10	I-5 North - Magnolia Blvd to SR 134	Construction	\$137.37	Dec 2018



Highway Program Status Summary (Measure R Funded)

#	Project	Current Phase	Estimated Cost of Current Phase (\$mil.)	Phase Completion
11	I-5 North HOV Project SR 14 to Parker Road	Plan, Specification & Estimate (PS&E)	\$31.0	Jul 2018
12	Interstate 605 Corridor Hot Spots – I-605/I-5 Interchange Improvement	Project Approval / Environmental Document (PAED)	\$20.84	Mar 2019
13	Interstate 605 Corridor Hot Spots – I-605/SR 60 Interchange Improvement	PAED	\$30.0	Feb 2020
14	Interstate 605 Corridor Hot Spots – I-605/SR 91 Interchange Improvement	PAED	\$7.8	May 2019
15	Interstate 605 Corridor Hot Spots – I-710/SR 91 Interchange Improvement	Project Study Report / Project Development Support (PSR/PDS)	\$2.6	June 2017
16	Interstate 405 Crenshaw Blvd On and Off Ramp Improvements	PS&E	\$10.3	Aug 2016
17	Interstate 405 and I-110 Aux Lane from SR 91 to Torrance Blvd	PS&E	\$9.0	Jul 2017
18	SR 138 I-5 to SR 14	PAED	\$25.0	Apr 2017
19	I-710 South	PAED	\$91.0	Sep 2018
20	I-710 South Early Action Projects - Soundwall Projects (3 locations)	PS&E	\$12.7	Nov 2017
Subtotal Measure R Highway Project			\$2,982.45	



Highway Program Status Summary (Non-Measure R Funded)

#	Project	Current Phase	Estimated Cost of Current Phase (\$mil.)	Phase Completion
21	I-10 HOV from Citrus Avenue to SR 57	Construction	\$264.4	Nov 2021
22	I-10 HOV from Puente Avenue to Citrus Avenue	Construction	\$195.6	Apr 2019
23	SR 57 and SR 60 Mixed Flow Interchange ** (Eastbound and Westbound flyover off-ramp to Grand Ave, Eastbound on-ramp SR-60)	PS&E	\$13.0*	Dec 2019
24	SR 71: Interstate 10 to Mission Blvd **	PS&E	\$11.0*	Nov 2026
25	SR 71: Mission Blvd to Rio Rancho Road **	PS&E	\$13.0*	Dec 2019
Subtotal Non-Measure R Funded Highway Projects			\$497	
Total Highway Program			\$3,479.45	

* Initial Budget Estimate is through completion of Design

** These are projects with completed PAED and in Approved 2009 LRTP and 2014 SRTP



I-605 “Hot Spots”

Approved budget: \$61.24 M

Estimated Cost to Complete Phase: \$61.24 M

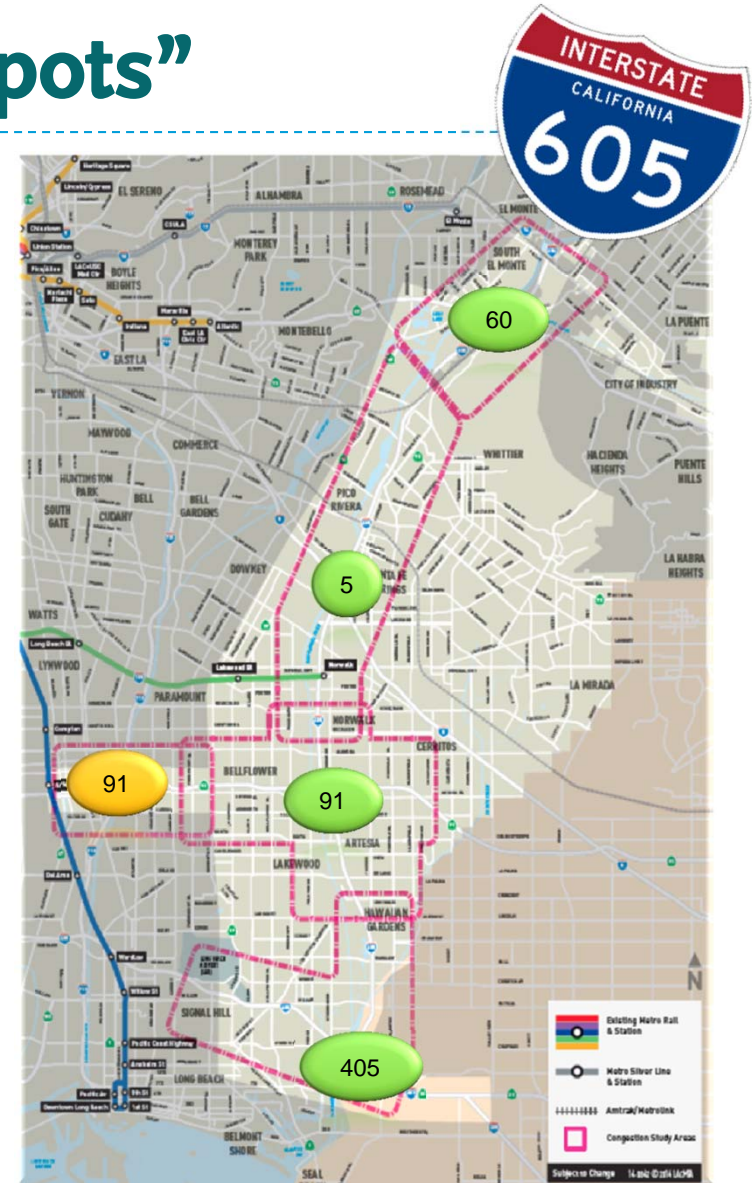
Accomplishments:

- Aggressive contract starts:
 - 605/5 PAED awarded December 2015
 - 710/91 PSR-PDS awarded December 2015
 - 605/91 PAED awarded May 2016
 - 605/60 PAED awarded June 2016
- Effective coordination of all contracts

Challenges/Risks:

- Funding to advance projects to design and construction
- Strategy to resolve: Considering breaking down the mega projects to smaller fundable projects with independent utility and sustainability

Note: Project costs, schedules, milestones, and delivery plans are on project-by-project basis.



I-710 South

Approved Budget: \$91.0 million

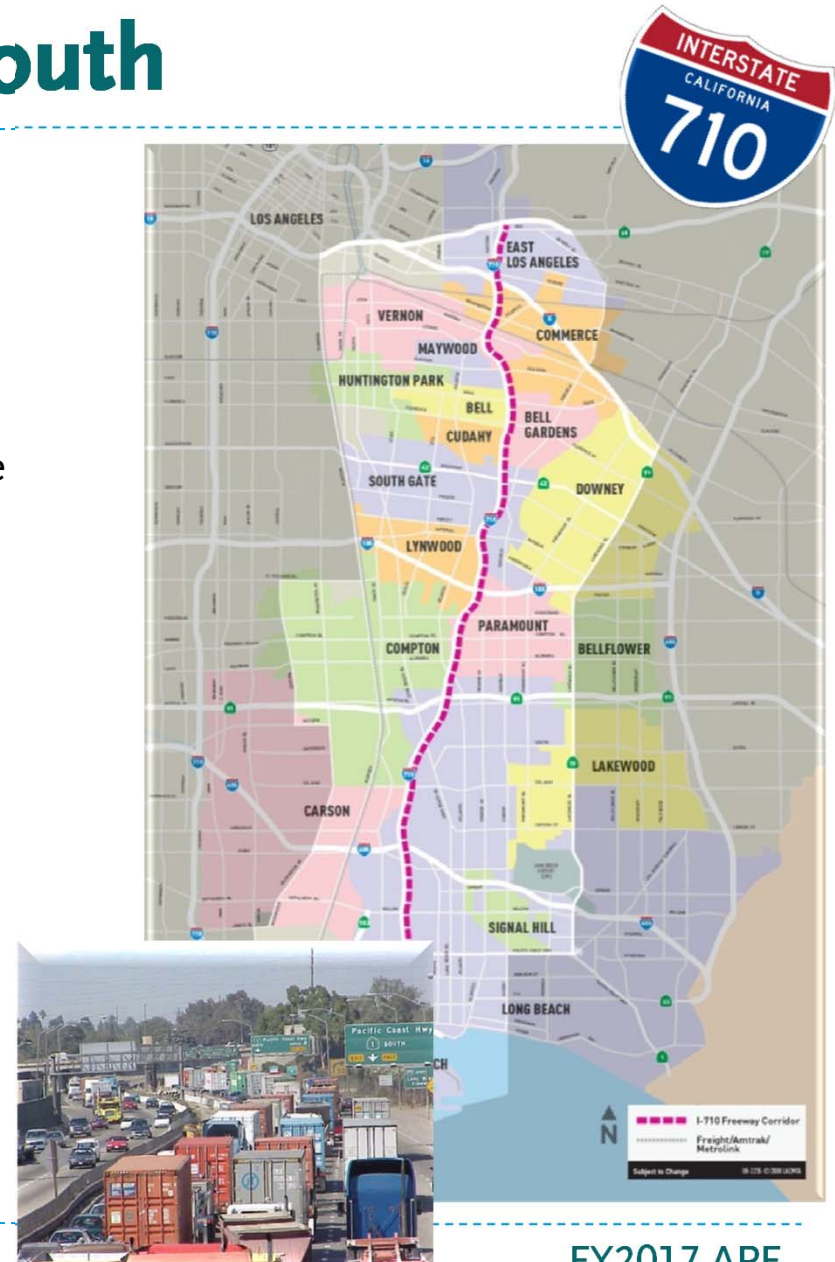
Estimated Cost to Complete Phase: \$91.0 mil

Accomplishments:

- On schedule
- Conducting additional studies as directed by the Board
- Strong collaborative work with the local agencies, communities, and Metro Board members in addressing community concerns
- Pursuing early action projects during the development of the corridor environmental documents

Challenges/Risks:

- Funding to pursue design and construction of the proposed improvements
- Strategy to resolve: Pursuing implementation of early action projects with independent utility and sustainability.



I-5 North HOV: SR 14 to Parker Road



Approved Budget: \$31.4 M
Estimated Cost to Complete Design: \$31 M

Accomplishments:

- Award of consultant services contract in May 2016 to complete final design
- Agreement with the consultant to complete final design in 30 months

Challenges/Risks:

- Funding for construction
- Coordination with Caltrans pavement rehabilitation project.



I-5 Corridor
Construction
Projects Managed
by Caltrans





I-5 South: Orange County Line to I-605



Project Managed by Caltrans :

- Approved budget: \$1,888.25 M
- Estimated Cost to Complete Construction: TBD

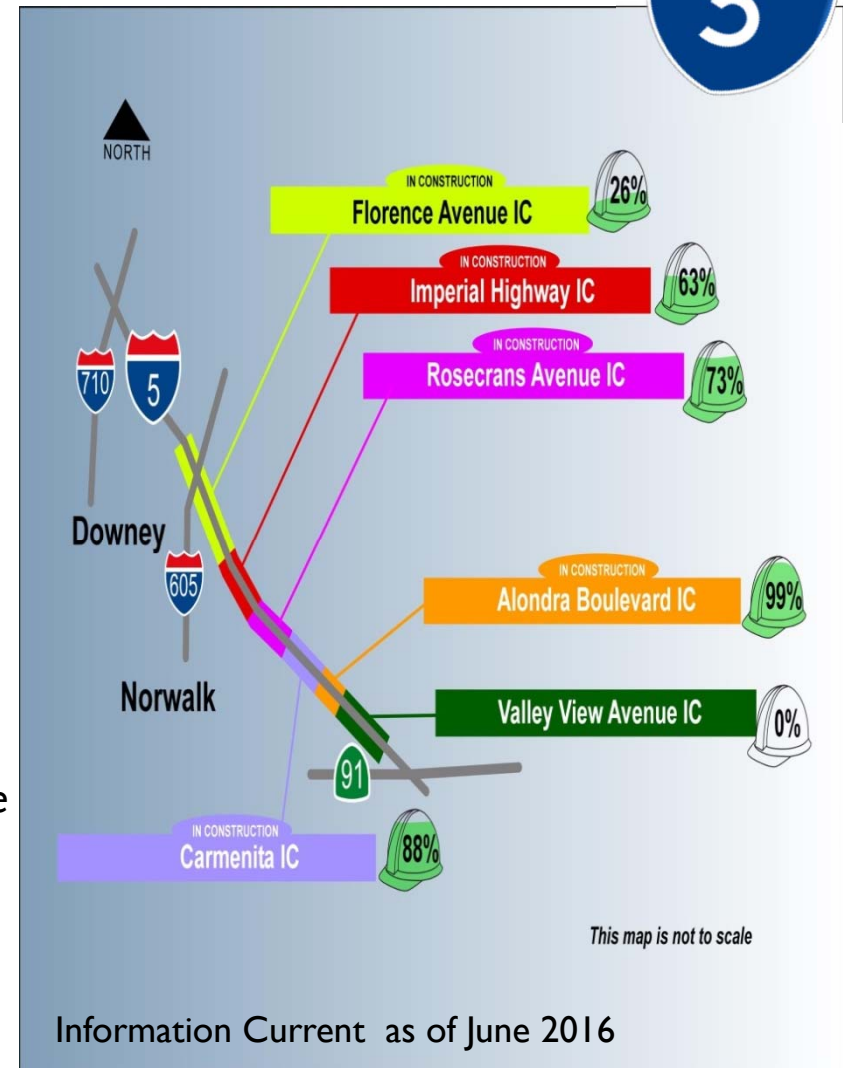
Accomplishments:

Effective coordination of all contracts:

- Alondra Blvd – Completed and Open to traffic
- Valley View Avenue – Construction begin summer 2016
- Rosecrans Avenue – Construction in progress
- Imperial Highway – Construction in progress
- Florence Avenue – Construction in progress
- Carmenita Interchange – Construction in progress

Challenges/Risks:

- Extensive utility and ROW relocation
- Different soil condition encountered on site for the piles
- Railroad work
- Working proactively with Caltrans to manage contingency



Information Current as of June 2016





I-5 North: SR 118 to SR 134



Project Managed by Caltrans :

- Approved budget: \$853.96 M
- Estimated Cost to Complete Construction: TBD

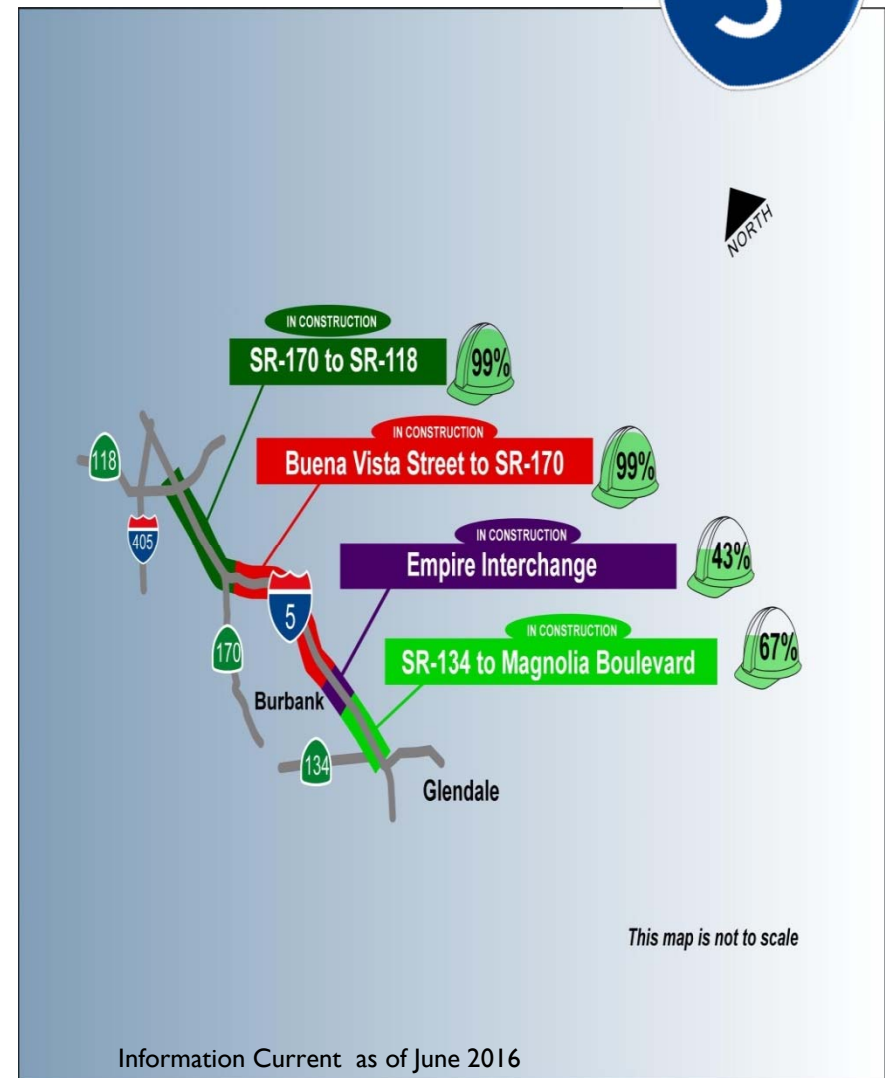
Accomplishments:

Effective coordination of all contracts

- SR118 to SR170 – Completed and Open to traffic
- SR170 to North of Buena Vista – Completed and Open to traffic
- North of Buena Vista to Magnolia Blvd including Empire Blvd Interchange – Construction in progress
- Magnolia Blvd to SR 134 – Construction in progress

Challenges/Risks:

- Girder manufacturing delay (Segment 4)
- Utility relocation/ Railroad work changes (Seg. 3)
- Survey work related to roadway and structures (Seg.4)
- LA River Bridge construction requires significant changes to avoid working on the River bed. (Seg. 4)
- Working proactively with Caltrans to manage contingency



Regional Rail Program



Regional Rail Program Summary

#	Project	Current Phase	Estimated Cost of Current Phase (\$mil.)	Phase Completion
1	LINK Union Station (Southern California Regional Interconnector Project)	Environmental & PE	\$55	March 2018
2	Bob Hope Airport Metrolink Station Pedestrian Bridge Project	Environmental & 90% Design	\$4	June 2017
3	Bob Hope Airport/Hollywood Way Metrolink Station Project	Construction	\$15	Anticipated Construction to begin Nov 2016
4	Doran Street and Broadway/Brazil Safety and Access Project	Environmental/100% PE Design	\$10	December 2018
5	Brighton to Roxford Double Track Project	Environmental; Plan, Specification & Estimate	\$15	October 2018
6	Rosecrans/Marquardt Grade Separation Project	Environmental; Plan, Specification & Estimate; Real Estate Acquisition	\$85	June 2019
7	Lone Hill to CP White Double Track Project	Environmental & 30% PE	\$5	June 2017
Total Regional Rail Program			\$189	

Bob Hope Airport/ Hollywood Way Metrolink Station

Project Budget: \$15M

Project Schedule: Anticipate Construction
to begin November 2016

Accomplishments:

- 100% design complete
- Airport committed to providing courtesy shuttle service between Station and Airport
- Invitation for bids for construction was issued in August 2016

Challenges/Risks:

- To arrange short term, long term parking solution with the City of Burbank
- To establish Operating & Maintenance (O&M) Plan with the Bob Hope Airport, City of Burbank, and City of Los Angeles
- City of Burbank requested design revisions to accomplish a more cost-effective O&M
- Potential closure of Sun Valley Station (within 2 miles of Bob Hope Station) to be determined



Rosecrans/Marquardt Grade Separation Project

Estimated Cost: \$85 M

- Environmental/PS&E: \$12M
- Real Estate Acquisition, Third Party: \$73M
- Construction: TBD

Phase Completion: June 2019

Accomplishments:

- Alternative #2 Offset overpass with connector roads was approved by Santa Fe Springs City Council and the Metro Board
- Environmental documentation obtained CEQA clearance
- Completed 35% Design

Challenges/Risks:

- Multi-agencies cooperation and approval process
- Minimize traffic impacts during construction
- Constraints at Coyote Creek
- Diagonal rail crossing at a busy intersection may be a potential risk
- Securing multi-agency funding for construction



Link Union Station (US)

Estimated Cost to Complete Environmental/PE:

\$55M

Environmental/PE Completion Date:

March 2018

Accomplishments:

- Commitment of \$15M California High Speed Rail funding
- Environmental Design accommodated High Speed Rail and integrated passenger concourse

Challenges/Risks:

- Securing funding for construction
- Interface with High Speed Rail



FY17 APE Summary

- New Project with Planned Adoption of Life-of-Project Budget
 - Westside Purple Line Extension Section 2 Project (separate board action)
- Existing Project with Planned Adjustments to Approved Budget
 - Div. 20 Portal Widening and Turnback Facility Design (separate board action)
- Existing Projects with Potential Adjustments to LOP Budget
 - Regional Connector Transit Project
 - Crenshaw/LAX Transit Project
 - ~~▪ I-5 South: Orange County Line to I-605~~
 - ~~▪ I-5 North: SR 118 to SR 134~~



Next Steps

- Project Managers to manage project scope, budget, and schedule for quality, on-time and within budget delivery
- To present project-specific LOP budget for Board review/adoption
- Seek additional revenue sources needed to fulfill funding commitment required to build and deliver projects
- Begin FY18 Program Management APE process in Fall 2016 and report to the Board in Spring 2017



Appendix: Project Listing by Type

TRANSIT CAPITAL PROJECTS WITH TOTAL PROJECT COSTS > \$5 M		TYPE	LOP BUDGET (\$ MIL.)
1	BRT Freeway Station Sound Enclosure	Bus Facilities Improvements	\$5.8
2	Fuel Storage Tank System Enhancements (FY15 - FY17)	Bus Facilities Improvements	\$6.5
3	Metro Silver Line Improvements & Upgrades	Bus Facilities Improvements	\$7.8
4	Division 3 Master Plan Phases II-IV	Bus Facilities Improvements	\$13.2
5	Division 1 Improvements	Bus Facilities Improvements	\$20.9
6	Bus Facility Maintenance Improvements & Enhancements Phase II	Bus Facilities Improvements	\$20.9
7	Bus Facility Maintenance Improvements & Enhancements Phase I	Bus Facilities Improvements	\$21.2
8	Bus Facilities Maintenance & Improvement - Phase III	Bus Facilities Improvements	\$21.7
9	Patsaouras Plaza Bus Station Construction	Bus Facilities Improvements	\$39.8
10	El Monte Busway & Transit Center Expansion	Bus Facilities Improvements	\$60.1
		Bus Facilities Improvements Total	\$217.8
11	Westside Purple Line Extension Section 1 Project	Major Construction	\$2,778.9
12	Westside Purple Line Extension Section 2 Project	Major Construction	\$395.3*
13	Westside Purple Line Extension Section 3 Project	Major Construction	\$55.5**
14	Regional Connector: Construction	Major Construction	\$1,551.8
15	Crenshaw/LAX Light Rail Transit: Construction	Major Construction	\$2,058.0
		Major Construction Total	\$6,839.5
16	Patsaouras Bus Plaza Paver Retrofit	Misc. Capital Projects	\$9.1
17	Division 20 Portal Widening Turnback Facility Design	Misc. Capital Projects	\$3.5***
18	Division 22 Paint And Body Shop	Misc. Capital Projects	\$11.0
19	Metro Red Line University City Pedestrian Bridge	Misc. Capital Projects	\$29.6
		Misc. Capital Projects Total	\$53.2
20	Southwestern Maintenance Yard	Rail Facilities Improvements	\$157.0
21	Systemwide Elevator Installations (Vertical Systems)	Rail Facilities Improvements	\$8.0
22	LRT Freeway Stations Sound Enclosures	Rail Facilities Improvements	\$8.6
23	Metro Red Line Civic Center Station Escalator/Elevator Modernization	Rail Facilities Improvements	\$12.0
24	Metro Red Line Escalator Replacement/Modernization	Rail Facilities Improvements	\$20.8
25	Metro Red Line to Orange Line North Hollywood Station West Entrance	Rail Facilities Improvements	\$23.1
		Rail Facilities Improvements Total	\$229.5
26	Metro Gold Line I-210 Barrier Replacement Phase I	Security/Safety	\$11.1****
27	Metro Emergency Security Operations Center	Security/Safety	\$112.7
		Security/Safety Total	\$123.8
28	Metro Blue Line Pedestrian Safety Enhancement at Grade Crossings	Wayside Systems	\$30.2
29	Metro Blue Line Signal System Rehabilitation	Wayside Systems	\$93.6
		Wayside Systems Total	\$123.8
		TRANSIT CAPITAL TOTAL	\$7,587

* Based on FY17 approved budget, LOP to be established

** Based on projected budget through FY17 non-accelerated schedule

*** This is the approved budget to complete preliminary engineering. A separate report to the Board later this calendar year is planned to request budget adjustment.

**** Design LOP budget approved for risk assessment study, environmental clearance and final design

Appendix: Project Listing by Type

	HIGHWAY	TYPE	CURRENT ESTIMATE (\$ MIL.)
1	I-5 South – Alondra	Measure R Highway Capital Project	\$114.1
2	I-5 South – Valley View Interchange	Measure R Highway Capital Project	\$631.1
3	I-5 South – Shoemaker, Rosecrans, Bloomfield	Measure R Highway Capital Project	\$188.2
4	I-5 South – San Antonio, Imperial Hwy and Orr Day	Measure R Highway Capital Project	\$323.3
5	I-5 South – Florence	Measure R Highway Capital Project	\$211.7
6	I-5 South – Carmenita Interchange	Measure R Highway Capital Project	\$419.9
7	I-5 North – HOV from SR 118 to SR 170	Measure R Highway Capital Project	\$219.5
8	I-5 North – HOV from SR 170 to North of Buena Vista	Measure R Highway Capital Project	\$94.7
9	I-5 North – North of Buena Vista to South of Magnolia Blvd	Measure R Highway Capital Project	\$402.4
10	I-5 North – Magnolia Blvd to SR 134	Measure R Highway Capital Project	\$137.4
11	I-5 North HOV Project	Measure R Highway Capital Project	\$31.0
12	Interstate 605 Corridor Hot Spots – I-605/I-5 Interchange Improvement	Measure R Highway Capital Project	\$20.8
13	Interstate 605 Corridor Hot Spots – I-605/SR 60 Interchange Improvement	Measure R Highway Capital Project	\$30.0
14	Interstate 605 Corridor Hot Spots – I-605/SR 91 Interchange Improvement	Measure R Highway Capital Project	\$7.8
15	Interstate 605 Corridor Hot Spots – I-710/SR 91 Interchange Improvement	Measure R Highway Capital Project	\$2.6
16	Interstate 405 Crenshaw Blvd On and Off Ramp Improvements	Measure R Highway Capital Project	\$10.3
17	Interstate 405 and I-110 Aux Lane from SR 91 to Torrance Blvd	Measure R Highway Capital Project	\$9.0
18	SR 138 I-5 to SR 14	Measure R Highway Capital Project	\$25.0
19	I-710 South	Measure R Highway Capital Project	\$91.0
20	I-710 South Early Action Projects - Soundwall Projects (3 locations)	Measure R Highway Capital Project	\$12.7
		Measure R Highway Total	\$2,982.5
21	I-10 HOV from Citrus Avenue to SR 57	Other Highway Projects	\$264.4
22	I-10 HOV from Puente Avenue to Citrus Avenue	Other Highway Projects	\$195.6
23	SR 57 and SR 60 Mixed Flow Interchange	Other Highway Projects	\$13.0
24	SR 71: Interstate 10 to Mission Blvd	Other Highway Projects	\$11.0
25	SR 71: Mission Blvd to Rio Rancho Road	Other Highway Projects	\$13.0
		Other Highway Total	\$497.0
		HIGHWAY PROGRAM TOTAL	\$3,479.4
	REGIONAL RAIL	TYPE	CURRENT ESTIMATE (\$ MIL.)
1	Link Union Station	Regional Rail	\$55
2	Bob Hope Airport Metrolink Station	Regional Rail	\$15
3	Bob Hope Airport Pedestrian Bridge	Regional Rail	\$4
4	Brighton to Roxford Double Track	Regional Rail	\$15
5	Doran St Grade Separation	Regional Rail	\$10
6	Lone Hill to White - Env & 30 % Design	Regional Rail	\$5
7	Rosecrans Marquardt Grade Separation	Regional Rail	\$85
		REGIONAL RAIL PROGRAM TOTAL	\$189