



Board Report

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Agenda Number: 21.

CONSTRUCTION COMMITTEE MAY 21, 2020

**SUBJECT: FISCAL YEAR 2021 PROGRAM MANAGEMENT
ANNUAL PROGRAM EVALUATION**

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE report on FY21 Program Management Annual Program Evaluation.

ISSUE

The Annual Program Evaluation (APE) is a priority initiative created to evaluate Metro's capital program annually. Given the challenges of managing a multi-billion-dollar capital program, a comprehensive review of the risks associated with the costs and schedules of the program is conducted on an annual basis. This report summarizes the results of the FY21 APE review performed by Program Management.

BACKGROUND

The APE initiative is a comprehensive evaluation of Metro's capital program, including Transit, Highway, and Regional Rail projects. As part of the process, staff reviewed and updated project costs and schedules to current conditions, challenges, and risks. 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 to better manage and deliver Board-approved projects. The APE is a dynamic tool, which is updated annually as projects move toward completion and any changes approved by the Board are incorporated.

DISCUSSION

FY21 Results

For the FY21 APE, Program Management focused on new projects, and projects that will carry-over through FY21, with project costs estimated at \$5 million or greater. Program Management staff evaluated 59 projects, including nine Major Transit Construction projects, 20 Other Transit Capital projects, 25 Highway projects, and five Regional Rail projects (see Attachment A presentation for a complete project listing), which total approximately \$20.1 billion. The program size has increased 9%

from \$18.3 billion in FY19 to \$20.2 billion in FY20.

The major focus remains 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 requiring future Board approval to Metro's capital program in FY21 is reported in the FY21 Program Management APE presentation.

Challenges

With the significant number and size of Program Management projects and the accelerated implementation schedule for delivering Metro's capital program, Metro is currently undertaking the largest transportation capital program in the nation. Metro's capability and capacity to deliver multiple complex projects on-time and within budget creates unprecedented challenges to project delivery.

Efforts to improve, innovate, and increase our capabilities to deliver projects are essential. Program challenges include:

- Deliver multiple large and complex projects on-time within budget
- Collaborate with stakeholders to meet community expectations
- Commitment of efficient third-party review/approval by various external jurisdictions
- Encourage competitive and qualified pool of contractors, small businesses, and workforce on Metro projects
- Manage cost risks impacted by shortage of skilled workers, good Contractors, and utility resources in a growing construction market
- Maintain sufficient resources and staffing needed to manage and support project delivery
- Address Contractor claims in a fair and equitable manner
- Achieve continuous improvement in project delivery through innovation and application of best practices and lessons learned

Strategic Initiatives

Program Management continues to implement various strategic initiatives to bring improved planning, consistency, transparency, and discipline to project delivery. These initiatives include:

- Conduct Annual Program Evaluation of Metro's capital program
- Establish reliable Life-of-Project budgets
- Continue use of robust management and support services consulting teams to augment technical expertise and resources
- Enhance Construction Claims Management Program
- Improved Best Practices/Lessons Learned Program
- Conduct readiness reviews before projects are released
- Utilize project delivery method selection process

FINANCIAL IMPACT

The FY21 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.

Should any of the potential project risks affecting scope, cost and schedule parameters be realized, the Chief Program Management Officer will return to the Board with separate recommendations to address the identified risks and adjust the project cost and/or schedule accordingly.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

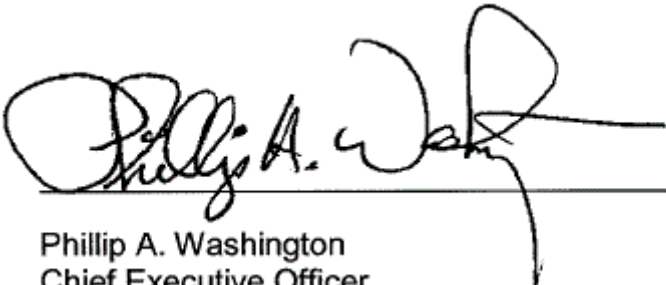
Recommendation supports Strategic Plan Goal #1 - Provide high-quality mobility options that enable people to spend less time traveling. This will be accomplished by planning and delivering multiple capital projects on time and on budget while increasing opportunities for small business development and innovation.

NEXT STEPS

Program Management will request the resources required for project delivery success through the FY21 Budget process for Board approval. Project managers will work to deliver projects safely, 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 FY22 Program Management APE report will be presented to the Board in Spring 2021.

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Phillip A. Washington
Chief Executive Officer

Fiscal Year 2021
Program Management
Annual Program Evaluation

Presentation Overview

- Purpose and Process
- Capital Program Status
- Capital Program Costs and Schedules
- Adjustments for FY21
- Summary
- Next Steps



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
- Reduces the number of requests to the Board for budget adjustments



Process

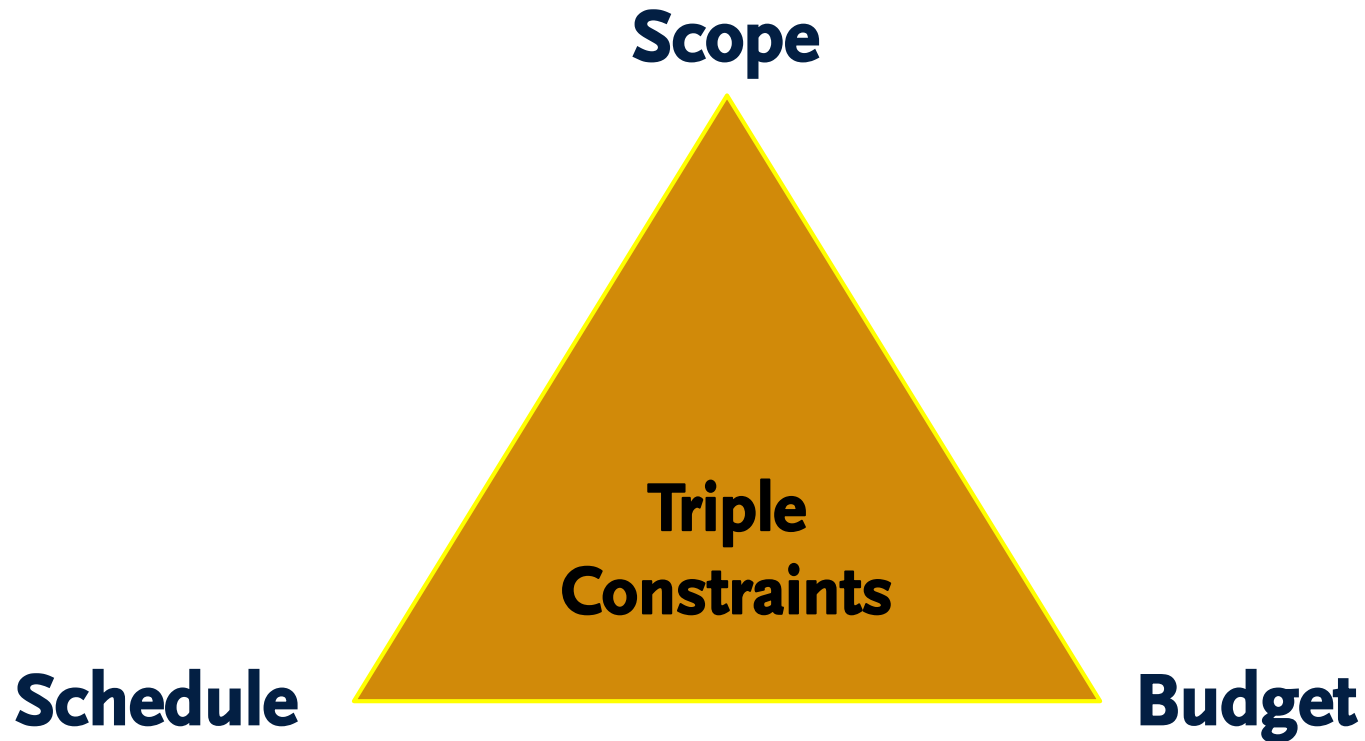
- A detailed review of project costs and schedules
- Update project capital cost estimates to current conditions, including price trends and changes
- Focus on budget to complete current project phase/milestone
- Include APE results in the FY21 Budget review and adoption by the Board



Project Management



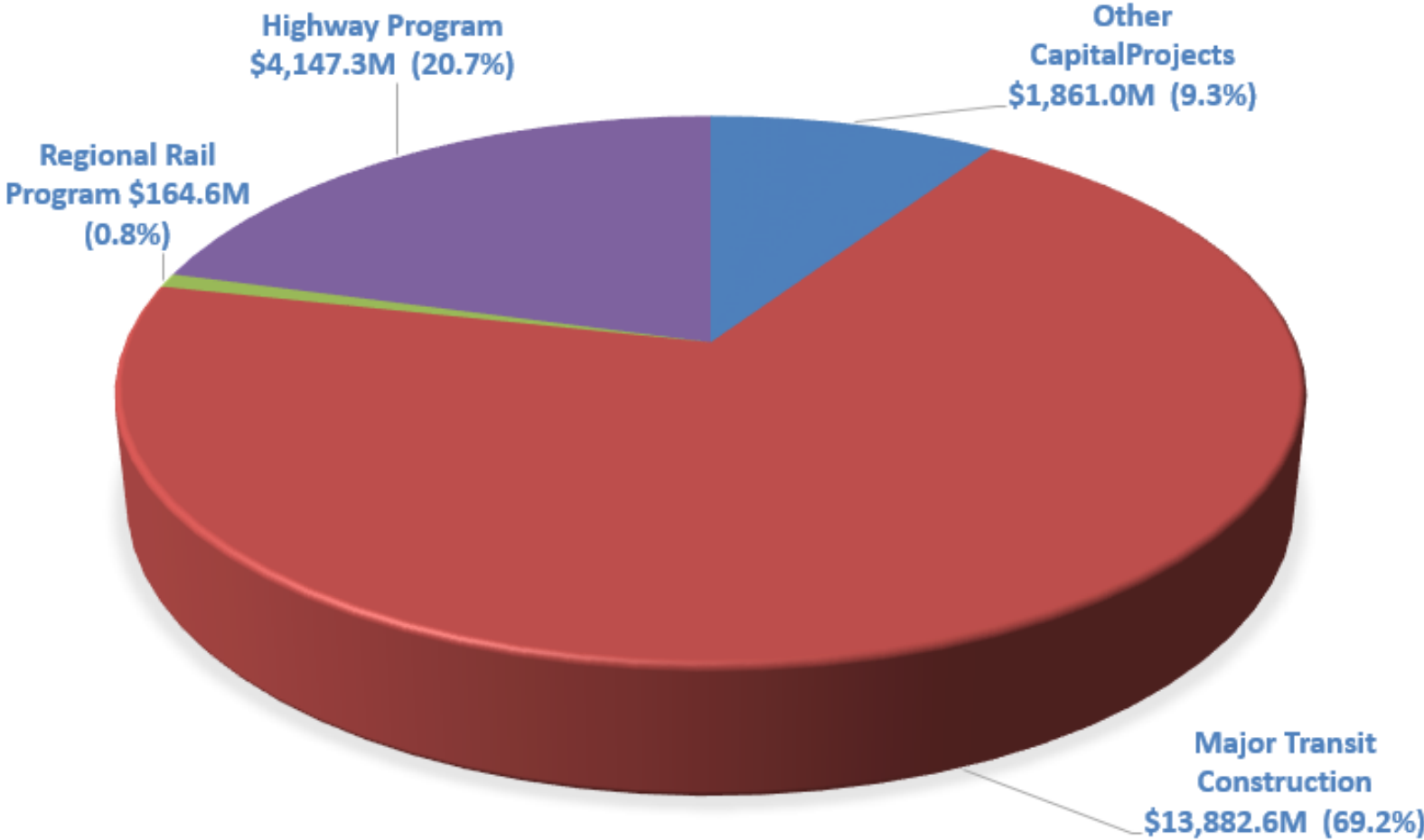
One side of the triangle cannot be changed without affecting the other sides:



FY20 Scope

- APE focuses only on those capital projects, managed by Program Management, with a total project cost greater than \$5M:
 - Major Transit Construction Projects – 9 projects
 - Other Transit Capital Projects – 20 projects
 - Regional Rail Projects – 5 projects
 - Highway Program – 25 projects
- There are 59 projects and approximately \$20.1 billion of approved project budgets included in the FY21 APE review which is an increase of 9.9% from \$18.1 billion in FY20.
- Project budgets in the APE focus on authorized funding amounts.
- Project funding amounts remain within the annual budget limit approved by the Board.

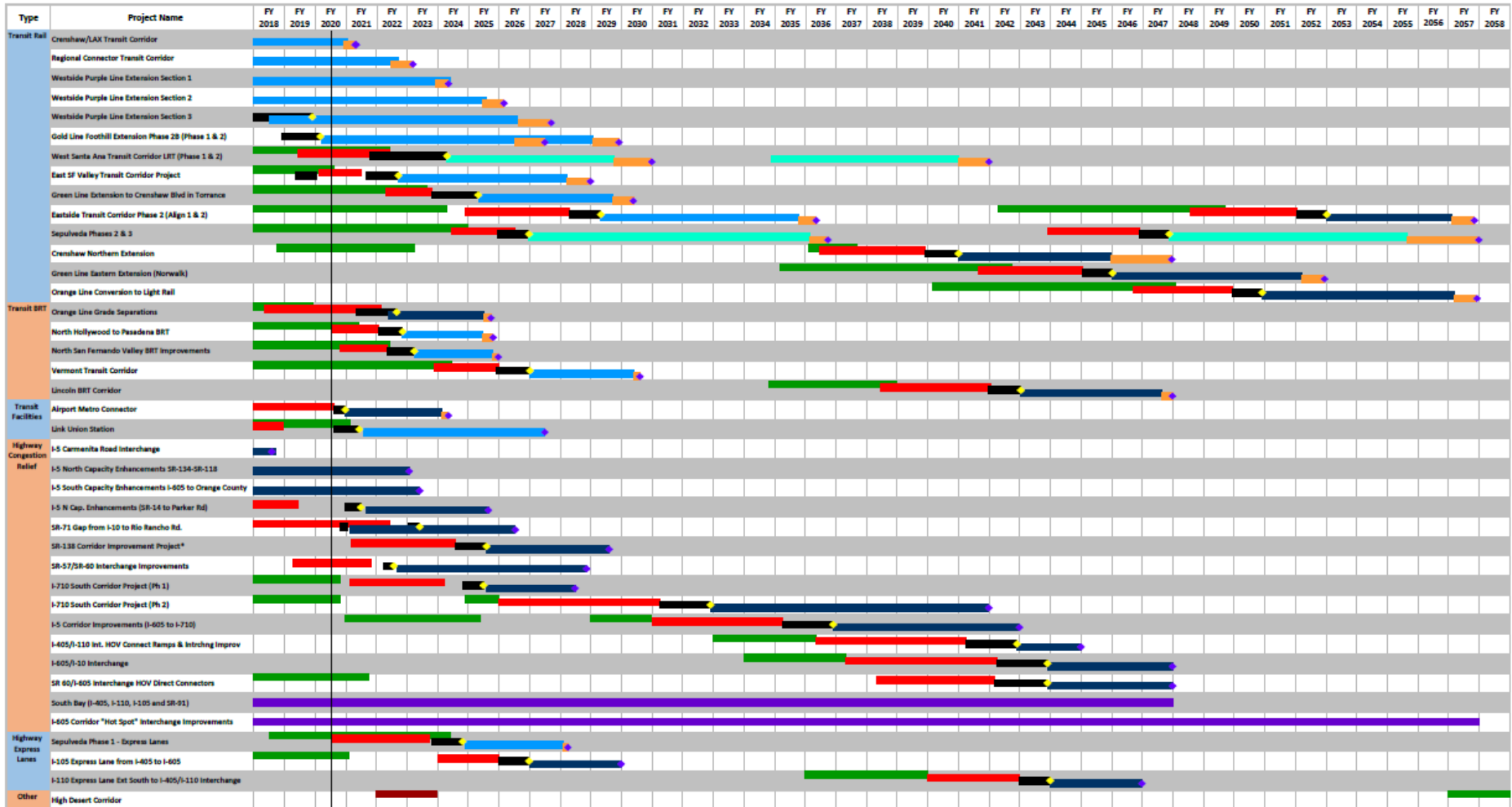
FY21 Current Program: \$20.1B



Program Highlights

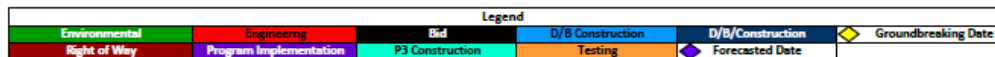
- In addition to the projects in APE, Program Management manages/oversees 40+ projects less than \$5M.
- Including projects within the APE, there are over 100 projects being managed by Program Management.
- **Overall Program dollars increased 9.4% from \$18.3 billion in FY20 to \$20.2 billion in FY21.**
- **Over 80% of projects included in the APE are within budget and on schedule.**
- Metro's capital program will continue to grow with continued implementation of Measure M.

Metro Program Management Master Schedule



*Project Development TBD

This document is a working draft meant for discussion purposes only and may contain preliminary conclusions not necessarily reflected in the final decision.



*Non-financially constrained plan.

Program Challenges

- Deliver multiple large and complex projects on-time within budget
- Collaborate with stakeholders to meet community expectations
- Commitment of efficient third party review/approval by various external jurisdictions
- Encourage competitive and qualified pool of contractors, small businesses, and workforce on Metro projects
- Manage cost risks impacted by shortage of skilled workers, good Contractors, and utility resources in a growing construction market
- Maintain sufficient resources and staffing needed to manage and support project delivery
- Address Contractor claims in a fair and equitable manner consistent with contractual requirements
- Achieve continuous improvement in project delivery through innovation and application of best practices and lessons learned

Unique Challenges of Mega Projects

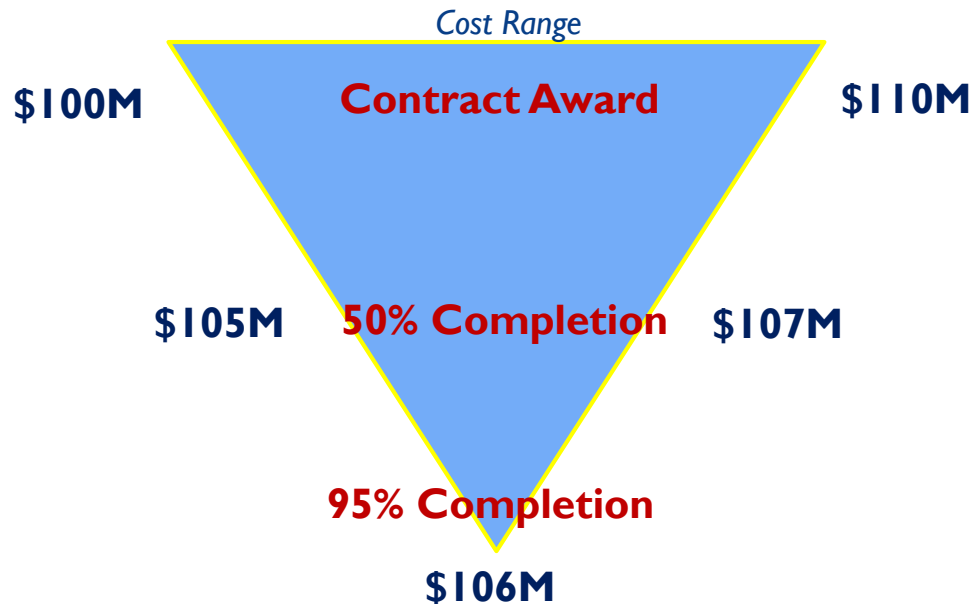
- Mega project durations are longer than in the past and contractors have experienced issues not considered at bid time.
- It is more difficult to assess risks adequately for long-term projects.
- Third party and regulatory requirements may change during the life of the project.
- Staff turnover is more likely to occur on long term projects.
- There are a limited number of contractors that have the capacity to bid mega projects.
- Once a contractor(s) secures a mega project, they are less likely to have bonding capacity to bid on other mega projects.
- As many bids on mega projects are from international firms, there are potential issues regarding knowledge of local requirements.

Mega Project Budget and Schedule Three Stage Approach

Metro is proposing a three-stage approach for Mega Project budgets estimated to be over \$500M and have a duration of 5+ years:

1. Determine an initial Budget (LOP) and Schedule at Contract award.
2. Assess Budget and Schedule at 50% completion of the Project including performance risk assessment.
3. Assess Budget and Schedule at 95% completion of the Project.

Example:



COVID-19 Impacts

Challenges

- Economy is in a recession with the potential to fall into a depression.
- Disruptions, delays, and productivity decrease because of canceled deliveries, lack of inspection approvals, and absent workers.
- Financial struggles for small business contractors.
- Cutbacks in public agency capital budgets.

Opportunities

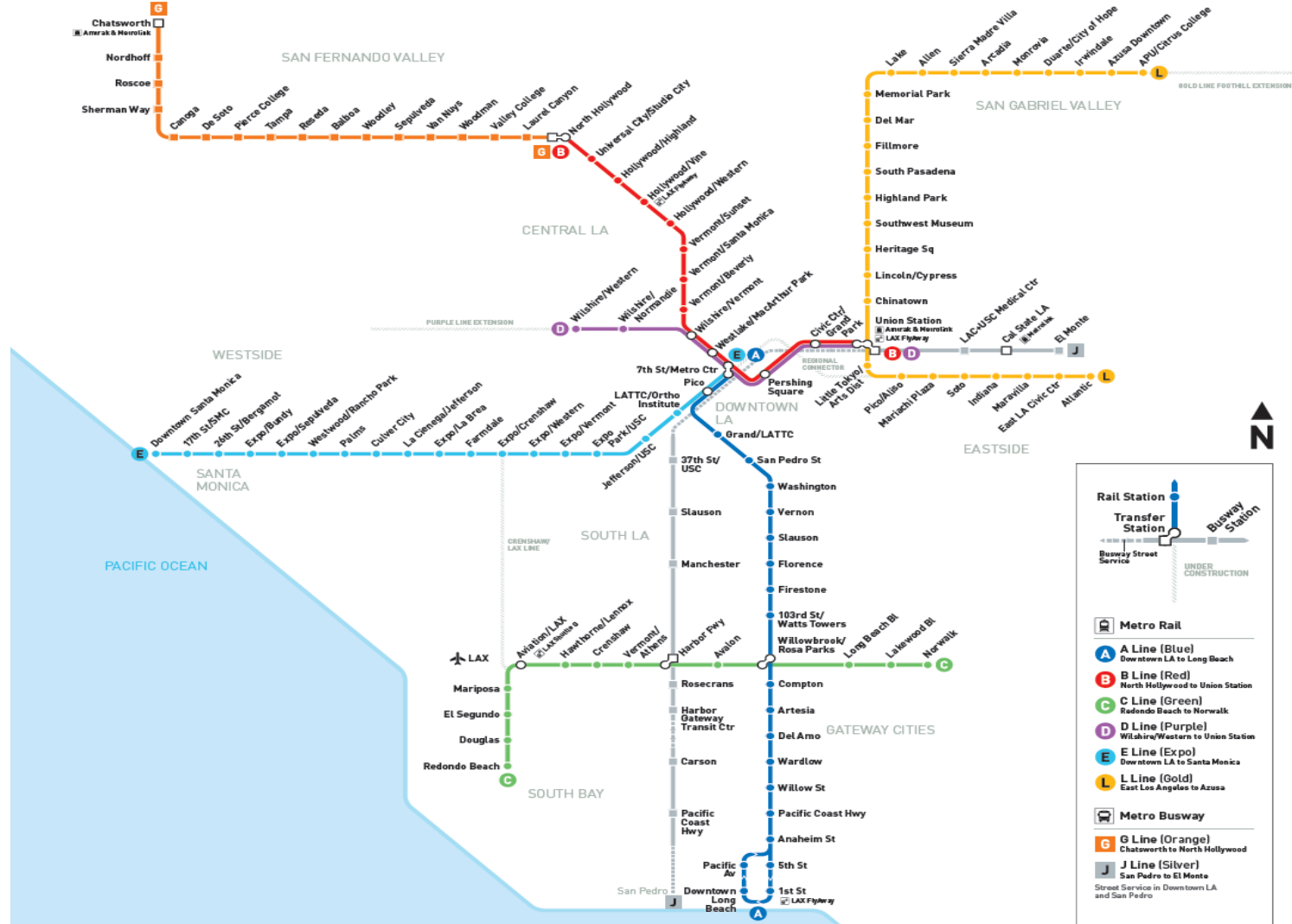
- Federal funding from stimulus packages.
- Substantial price reductions on fuel and other commodities.
- Dramatic increase in the labor pool available for construction projects due to a high number of unemployment claims.
- Accelerate certain project activities during this period of light traffic.
- A positive bidding environment is expected for funded projects.

Strategic Initiatives

Continue to implement strategic initiatives to bring improved planning, consistency, transparency, and discipline to project delivery:

- Conduct Annual Program Evaluation of Metro's capital program
- Establish reliable Life-of-Project budgets
- Continue use of robust management and support services consulting teams to augment technical expertise and resources
- Enhance Construction Claims Management Program
- Improved Best Practices/Lessons Learned Program
- Conduct readiness reviews before projects are released
- Utilize project delivery method selection process
- Strengthen risk assessment program

Metro Transit Program



Metro Transit Capital Projects

Type	Project Budget (in millions)	# of Projects
Major Transit Construction	\$13,882.6	9
Other Transit Capital	\$1,861.0	20
Misc. Capital	\$1,068.8	5
Security/Safety	\$252.5	3
Rail Facilities	\$156.9	4
Wayside Systems	\$252.7	3
Bus Facilities	\$130.0	5
Total Transit Capital Program	\$15,743.6	29

Metro Transit Capital Program Summary

Project Completion in FY20:

- Southwestern Maintenance Yard
- Division 22 Paint and Body Shop
- Bus Rapid Transit Freeway Station Sound Enclosure
- Metro Silver Line Improvements
- Bus Facility Maintenance Improvement Phase II
- Mainline New Blue Projects



Project Completion Planned in FY21:

- Crenshaw/LAX Project
- New Blue Projects (Yard Signaling)
- Blue Line Rehabilitation/Willowbrook Station
- Fuel Storage Tank Program (FY17-FY19)
- Metro Blue Line Pedestrian Safety Enhancements at Grade Crossing

Metro Transit Capital Program Summary

Projects Transitioned from Planning to Program Management in FY20:

- Rail Operations Center and Bus Operations Center (ROC/BOC)

Planned Transition to Program Management in FY21:

- East San Fernando Valley Transit Corridor Project
- West Santa Ana Branch Transit Project
- North Hollywood to Pasadena Bus Rapid Transit Project
- North San Fernando Valley BRT Project

Crenshaw/LAX Transit Project



Crenshaw/LAX Transit Project

Project Budget: \$2,058.0 M

Project Completion: Spring 2021

Projected Budget: \$2,148.0M

Project Complete: 95%

Accomplishments:

- Contractor enhanced and strengthened project management team.
- Contractor initiated start of systems integration testing at south end of Project.
- Blocked or damaged conduits and systems pathways in tunnels rework is completed; focus now on remaining required repairs in underground stations.

Challenges/Risks:

- Contractor rework and delayed start of testing impacting contractor's progress to be less than planned.
- Remaining complex electric and systems tests must be successfully completed.
- Pending claims from the contractor.

Regional Connector Transit Project



Regional Connector Transit Project

Project Budget: \$1,755.8 M

Project Completion: 2022

Project Complete: 64%

Accomplishments:

- Successfully completed invert and exterior wall concrete pours of the SEM Cavern on-schedule.
- Completed Flower St. cut-and-cover excavation; concrete operations from 4th St. to 7th/Metro now underway.
- Finalized designs for foundation construction interfaces of the Historic Broadway Station to the planned building tower to be constructed over the station entrance.
- Completed excavation of 1st Street cut-and-cover to the extent accessible before initiating the Gold Line Bus Bridge; concrete operations are now underway.
- Initiated placement of precast floating slabs designed to attenuate noise and vibration from south end of Grand Ave Arts/Bunker Hill Station to just west of Historic Broadway Station.
- Through January 2020, over 4.5M work hours performed with 20 recordable injuries and zero lost work days.

Challenges/Risks:

- Maintain pace with scheduled concrete operations at three stations and two cut-and-cover areas.
- Secure and retain sufficient technical and craft labor resources to safely, and efficiently prosecute the work.
- Effectively identify and manage risks to protect schedule and cost performance.
- Effective management of systems cut-overs integrating four operating lines at three locations; extensive analyses of specific individual requirements are underway to identify challenges of design and as-built systems in-place.
- Board approved service plan by June 2020.

Westside Purple Line Extension Project



Westside Purple Line Extension Section 1

Project Budget: \$2,778.9 M

Forecast Completion: 2023

Project Complete: 58%

Accomplishments:

- Will complete the Reach 2 tunnel drive from Wilshire/La Brea Station to Wilshire/Fairfax Station and will begin the Reach 3 tunnel drive from Wilshire/Fairfax Station to Wilshire/La Cienega Station this fiscal year.
- Commenced Reach 1 tunnel cross-passage construction.
- Commenced concourse and roof concrete operations at Wilshire/La Brea Station.
- Completed invert slab and level 1 wall concrete placement at Wilshire/Fairfax Station in support of TBM arrival.
- Commenced excavation of Wilshire/Fairfax Station entrance structure.
- Completed excavation and invert slab, and began level 1 walls at Wilshire/La Cienega Station in support of TBM arrival.
- The rail welding site at Division 20 Site was delivered to the C1045 contractor. Contractor began delivery of running rail to the site.

Challenges/Risks:

- Differing site conditions – dewatering, gas, etc.
- Third party requirements impacting the project budget.
- Contractor claims.

Westside Purple Line Extension Section 2

Project Budget: \$ 2,440.9 M

Forecast Completion: 2025

Project Complete: 28%

Accomplishments:

- Completed third party advanced utility relocations at the Century City Constellation Station.
- Started assembly of Tunnel Boring Machines (TBMs) in Century City in support of beginning tunneling operations this fiscal year.
- Obtained Board of Public Works approval for an additional seven-month full street closure of Constellation Blvd. (in the vicinity of the TBM Launch Box).
- Obtained Right of Entry from Beverly Hills Unified School District (BHUSD) to support investigation into magnetic anomalies discovered under BHUSD property.
- Completed investigation of the three magnetic anomalies encountered on BHUSD property.
- Completed pile installation on the north side of Wilshire/Rodeo Station.
- Obtained approval from the City of Beverly Hills City Council for a temporary full street closure of Wilshire Blvd. (between Beverly and Crescent) for the duration of the stay at home orders due to the COVID-19 Pandemic.

Challenges/Risks:

- Differing site conditions.
- Third party issues.

Westside Purple Line Extension Section 3

Project Budget: \$3,223.6 M

Forecast Completion: 2027

Project Complete: 8%

Accomplishments:

- Full Funding Grant Agreement was executed for the Project.
- SCE duct bank installation is proceeding under the C1151 Tunnel Contract.
- Continue 3rd parties (joint trench) utility relocations.
- C1151 Tunnel Contractor received VA Hospital site and has begun preparation work at the Tail Track Exit Shaft site.
- Contract Notice to Proceed was issued for Contract C1152 Stations, Trackwork, Systems, and Testing. Final design is underway.
- Geotechnical investigations and survey activities have been completed at the two station sites and the Caltrans Yard.
- Closeout of C1153 Advanced Utility Relocations Contract to complete this fiscal year.

Challenges/Risks:

- Recover the time delay to the Project schedule due to moving the Tail Track Exit Shaft from the Army Reserve site to VA Hospital site, and late property access to the VA Hospital site for the C1151 Tunnel Contract.

Gold Line Foothill Extension Phase 2B



-  Gold Line Rail Corridor (shared with freight)
-  Metrolink Rail Corridor
-  Gold Line Station
-  Gold Line Station and Metrolink Station (not shared)
-  Planned Grade Separation for Gold Line Trains Only

Gold Line Foothill Extension Phase 2B

Project Budget: \$1,532.9 M

Forecast Completion: 2026 (2028 to MCL)
Project Complete: 6%

Accomplishments:

- Pole line elimination and advanced utility relocations contracts completed in 2018-2019 period.
- CPUC has approved 94% (42 of 49) grade crossings to date.
- Construction Authority Project Management Staff moved into field office.
- Radio equipment installed at Johnstone Peak to support the extension.

Challenges/Risks:

- Major Construction starts August 2020.
- Due to unfavorable economic conditions affecting bid prices, the alignment contract was restructured to terminate in Pomona with a two-year option to extend to Montclair.
- Securing \$450 million for remaining initial proposed alignment to Claremont.

Orange Line Bus Rapid Transit Improvements



Orange Line Bus Rapid Transit Improvements

Current Authorized Project Budget : \$22.0 M

Forecast Completion: 2024

Project Complete: 5%

Accomplishments:

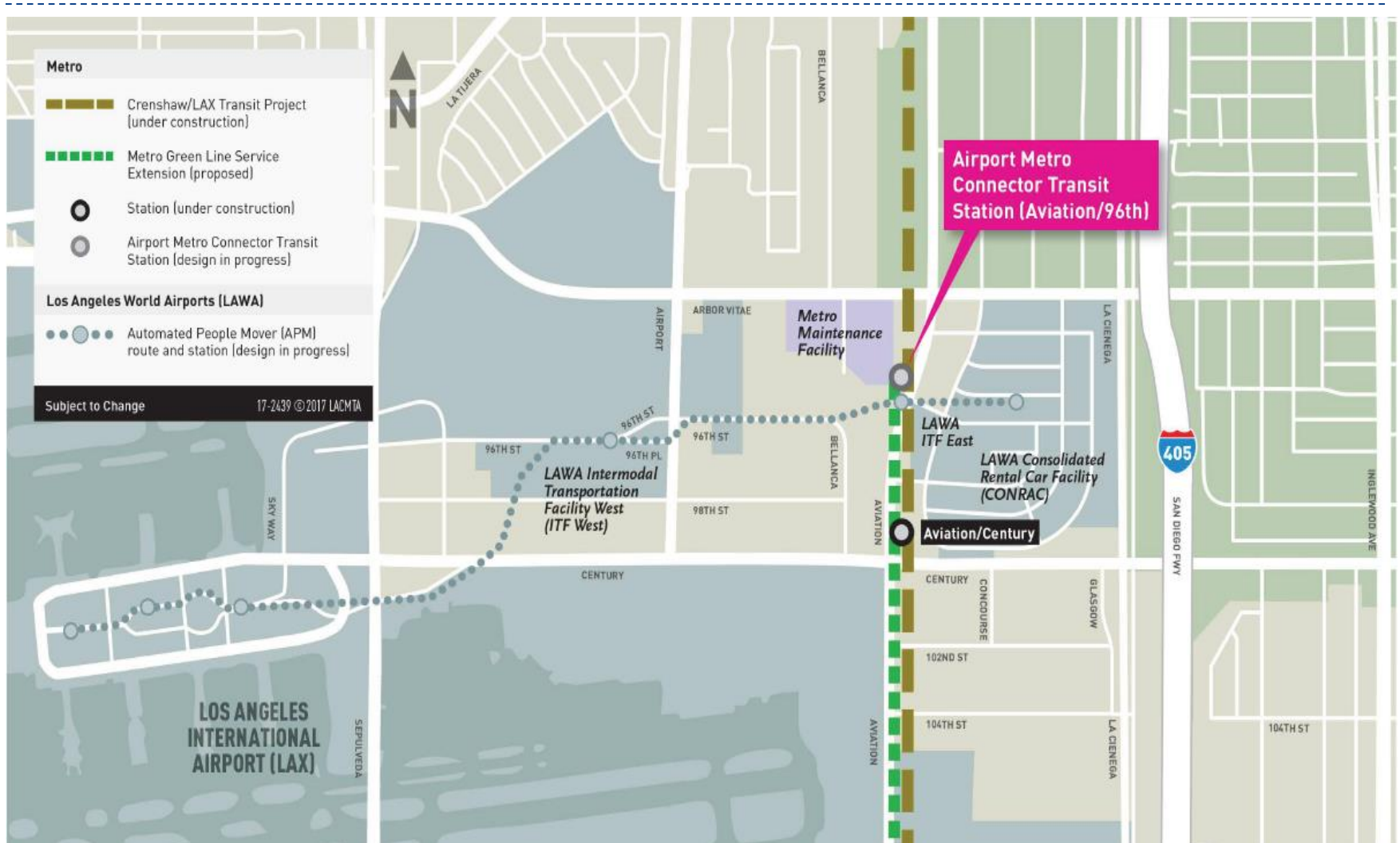
- Completed Basis of Design, 30% Design and Value Engineering of Grade Separation, and 100% design of DWP underground relocation for Sepulveda GS. Completed 30% design of Gates.
- Completed Traffic Analysis and Pilot Gate design (to be modified for new location), Project Management Plan, and Sepulveda Grade Separation Value Engineering.
- DWP started construction of underground utility work at Sepulveda Blvd.

Challenges/Risks:

- Gate activation/platooning for bus transit does not exist in US; new technology to be developed; future PUC regs requires approval for gates with bus operations. Traffic impacts/mitigation due to gates.
- ROW acquisitions and major utility relocations.
- Integration with Sepulveda and ESFV Transit Corridor projects.
- Maintaining existing bus operation during construction.
- Sepulveda Transit Corridor project may affect OL Grade Separation at Sepulveda.
- City Agency review and approval time may delay project schedule.



Airport Metro Connector



Airport Metro Connector

Current Authorized Project Budget : \$180.7 M

Forecast Completion: 2024

Project Complete: 23%

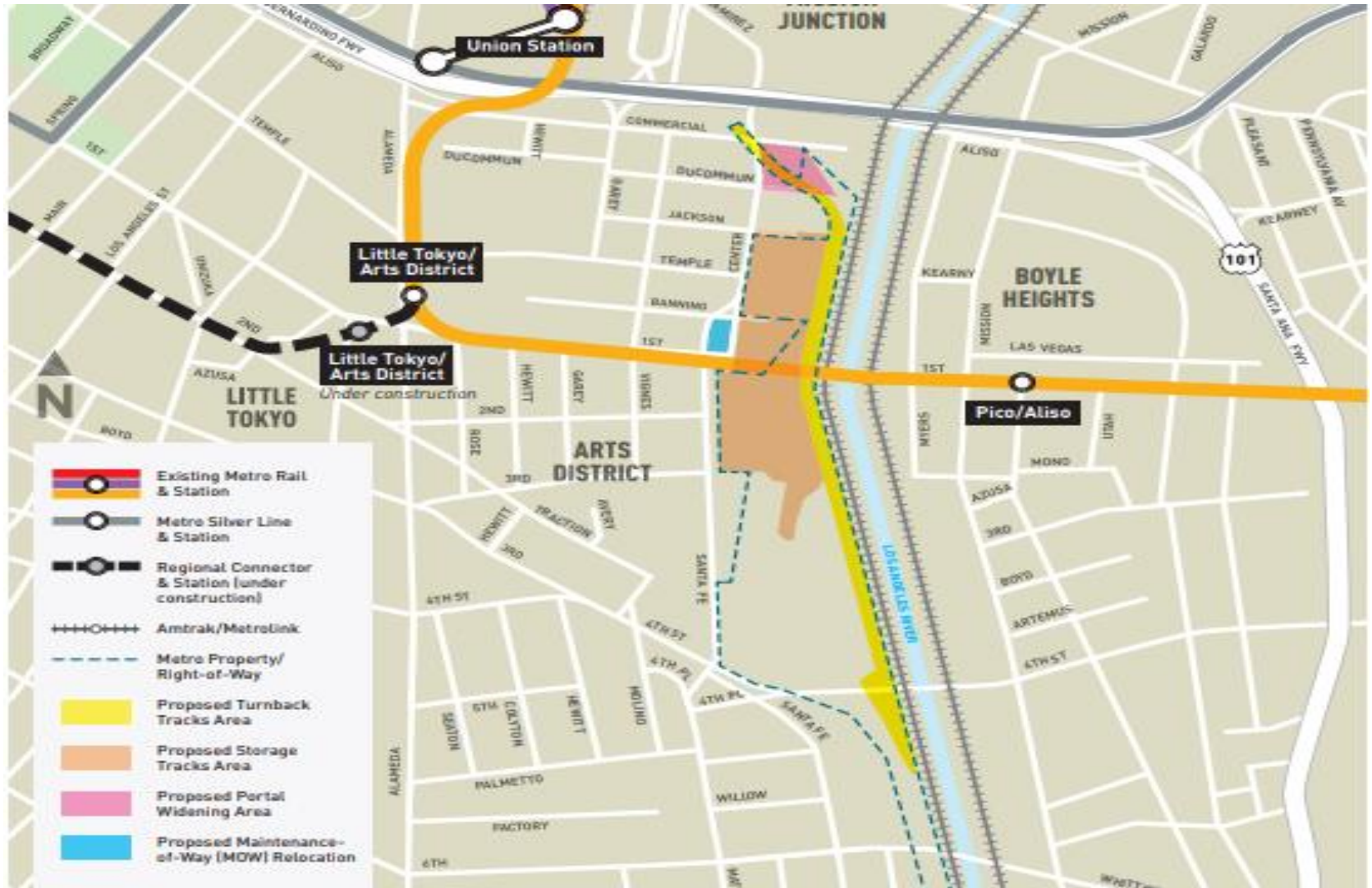
Accomplishments:

- Engineering completed 100% design and Early Works Package design.
- Preliminary Site work completed.
- Los Angeles World Airport (LAWA) Interface and coordination continues.
- Ardent and Honeywell Monitoring decommissioned for the duration of the construction.
- Complete Phase II Environmental Site Assessment.
- So. Cal. Gas completed Utility relocation design and potholing for Gas Lines transmission.
- Awarded professional services contract for construction support services.
- Previous tenant (Hertz) has ceased operations and has completely moved off site. Real Estate is in the process of finalizing the acquisition of Hertz property and is anticipating finalized sale and ownership by end of FY20.

Challenges/Risks:

- Real Estate Real/eminent domain costs for acquisition and relocation, advance utility relocation, schedule integration with LAWA's Automated People Mover project.
- Constructing project under full Metro operations of the Crenshaw and Green Lines.
- Potential schedule impacts related to the coordination of the Crenshaw Line opening and LAWA LAMP interface and contractors.

Division 20 Portal Widening Turnback



Division 20 Portal Widening Turnback

Current Authorized Project Budget : \$801.7M

Forecast Completion: 2023

Project Complete: 5%

Accomplishments:

- Real Estate Acquisitions & C1180 Early Demolition: Major demolition of the ADCO, Viertel and Pickle Works Sites complete.
- Procurement of TPSS Station and Emergency Power Generator: Contract awarded; in the Submittal Process/Shop Drawings.
- Installation of Ductbanks and Demolition of Building 61A: Advancing several lines, and completed demolition of Building 61A.
- Portal Widening and Turnback: Contract awarded, Notice to Proceed April 2020
- Board Approved LOP.

Challenges/Risks:

- Coordination with Active Rail Yard - Rail Operations must remain active.
- Multiple Cutovers throughout Project.
- Adjacent Projects Coordination (ESOC, Link US, RCC, PLE Rail Welding Yard, Center Street).
- Choke Point at Portal - Operations, Maintenance, other Projects need access to Main Line at Portal.
- Unknown Conditions (Differing Site Conditions - DSCs - includes unknowns and utilities).
- DWP – Power Response Time.
- Procurement of Long Lead Items: Very Large power substation, 60+ turnouts, Continuous Welded Rail, Signal Materials, and Bridge Materials.

Patsaouras Plaza Busway Station

Project Budget: \$50.9 M

Project Completion: 2020

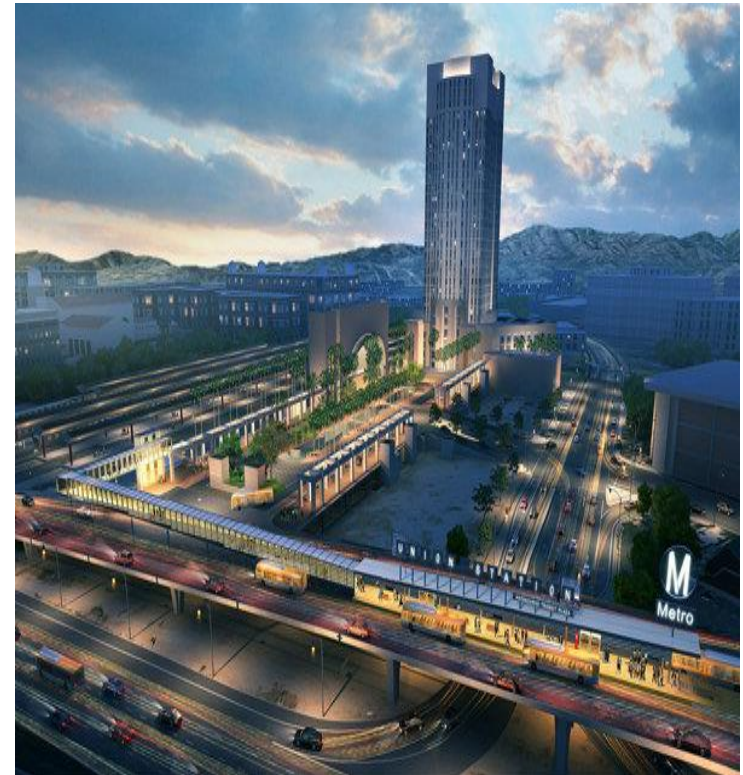
Project Complete: 85%

Accomplishments:

- Completed the PBPS pedestrian bridge, overcrossing and elevator enclosure
- Initiated work on stainless steel panels, including public art component
- Working with FTA to resolve expansion of the Area of Potential Effect and complete Caltrans storm drain connection

Challenges/Risks:

- Numerous Third party delays.
- Additional monitoring due to the requirements set forth in the Programmatic Plan.
- Additional costs for CMSS and DEOD labor compliance consultants due to extending the schedule
- Finding additional items of archeological or paleontological concern



Metro Blue Line Signal Rehabilitation Project

Project Budget: \$119.0 M

Project Completion: 2021

Project Complete: 90%

Accomplishments:

- MBL Resignalling contract (Mass Electric) – issued NTP FY18.
- A Line (formerly Metro Blue Line) trains began running November 1, 2019.
- Remaining work:
 - Work at Rail Yard remains
 - Negotiating outstanding requests for changes and Change Orders; contract closeout by FY21.

Challenges/Risks:

- Acceleration costs and schedule delays associated with Rail Yard work.
- Negotiation of outstanding requests for change.



New train control



Project adds 4 Crossovers

Willowbrook/Rosa Parks Station Project

Project Budget: \$128.3 M

Project Completion: 2020
Project Complete: 75%

Accomplishments:

- Completed relocation of utilities and improvements to the Non-Revenue rail crossing.
- Construction of the Customer Service building and Bike Hub is complete.
- Renovation of A Line platform and mezzanine to C line 80% complete.



Challenges/Risks:

- Incurred cost increases due to real estate and contractor cost escalation.
- Installation of new grade crossing by Union Pacific.
- Further cost escalation and labor impacts due to COVID crisis.



Metro Center Street Project

Project Budget: \$206.0M Project Completion: Phase 1 in 2023

Accomplishments:

- Completed evaluation of the DB proposals.
- Board award of DB contract and LOP increase is anticipated in April 2020
- Completed Early Demolition in February 2020
- Issued the RFP for Construction Support Services in November 2019, and completed proposals review and negotiations.
- Staff will go to the Board in May 2020 to award the CSS contract.

Challenges/Risks:

- Competitive market caused cost proposals to be higher than estimated which resulted in increase the LOP from 112.7M to 206M
- Need to expend State funds of \$38 million by March 2021
- Currently on hold due to COVID-19 financial impacts



Rail & Bus Operations Center (ROC/BOC)

Project Budget: \$ 24.0M Project Completion: 2021 (PE Design)

Accomplishments:

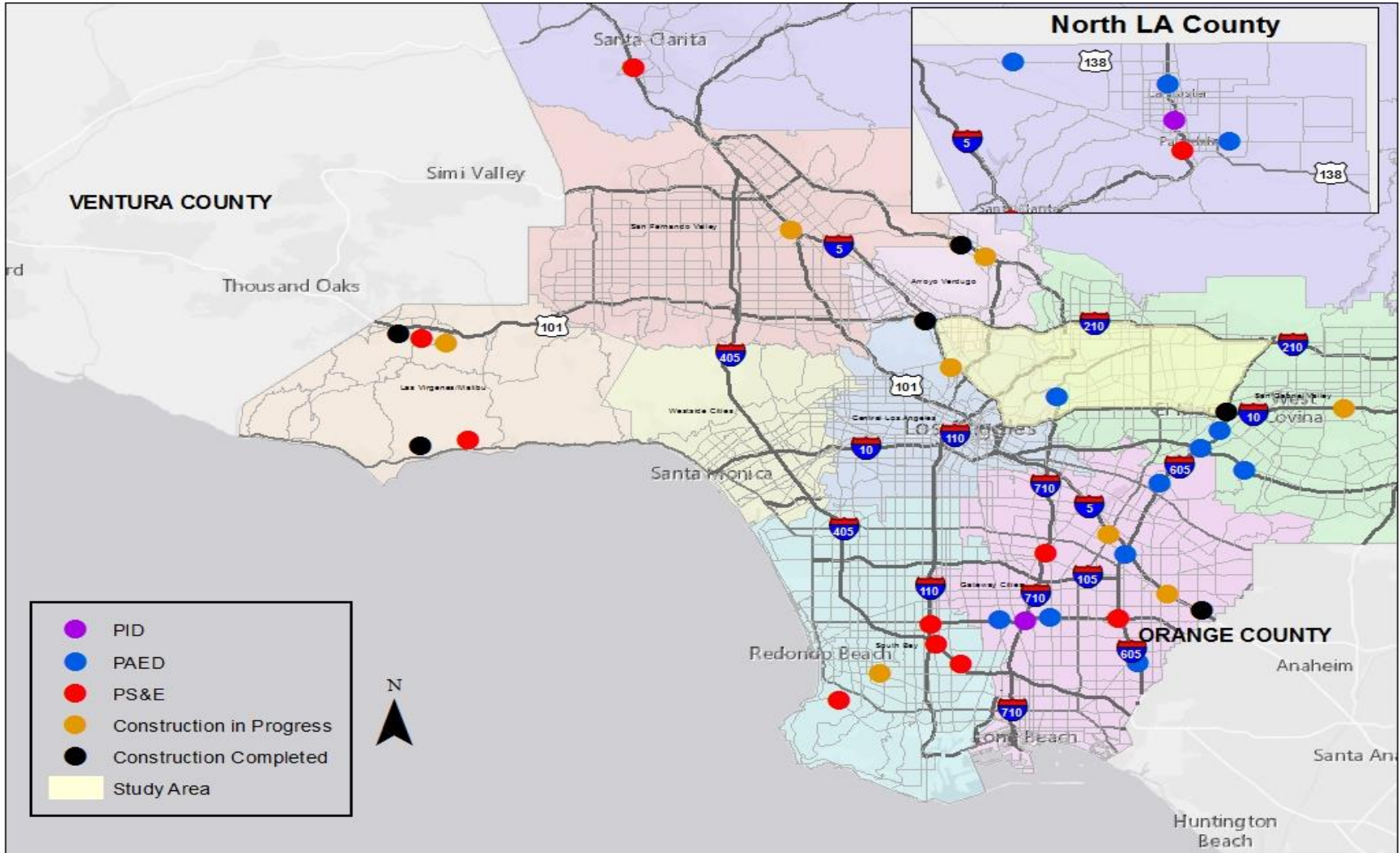
- Board approved LOP for PE Design in February 2020
- Task Order will be issued to SECO Trans to initiate PE Design in April 2020.

Challenges/Risks:

- Funding for Final design and construction is not yet identified.
- Currently on hold due to COVID 19 financial impacts.



Highway Program



Highway Program Status Summary (Measure R-Funded)

#	Lead	Project	Current Phase	Estimated Cost through Current Phase (\$mil)	Scheduled Completion
1	Caltrans	I-5 North – North of Buena Vista to South of Magnolia Blvd	Construction	\$397.0	2021
2	Caltrans	I-5 North - Magnolia Blvd to SR 134	Construction	\$168.2	2020
3	Caltrans	I-5 South – Florence Ave Interchange	Construction	\$211.7	2020
4	Caltrans	I-5 South - San Antonio, Imperial Hwy and Orr Day	Construction	\$323.3	2020
5	Caltrans	I-5 South Valley View Interchange	Construction	\$631.1	2021
6	Caltrans	I-405 Crenshaw Blvd On and Off Ramp Improvements	PS&E	\$24.4	2020
7	Metro	I-405 Auxiliary Lanes – I-105 to Artesia Blvd	PAED	\$4.1	2020

PAED – Project Approval and Environmental Document

PS&E – Plans, Specifications and Estimates

Highway Program Status Summary (Measure R-Funded)

#	Lead	Project	Current Phase	Estimated Cost through Current Phase (\$mil)	Scheduled Completion
8	Metro	I-605 Corridor Hot Spots – I-605/I-5 Interchange Improvements	PAED	\$28.7	2021
9	Metro	I-605 Corridor Hot Spots – I-605/SR 60 Interchange Improvements	PAED	\$41.2	2021
10	Metro	I-605 Corridor Hot Spots – I-605 Beverly Interchange Improvements	PAED & PS&E	\$3.7	2021
11	Metro	I-605/Valley Boulevard Interchange Improvements	PAED & PS&E	\$2.2	2021
12	Metro	SR-60/7th Avenue Interchange Improvements	PAED & PS&E	\$2.3	2021
13	Metro	SR-91 (EB) Atlantic Avenue to Cherry Avenue Auxiliary Lane Improvements	PAED & PS&E	\$7.4	2021
14	Metro	SR-91 Acacia Court to Central Avenue	PAED	5.0	2021
15	Metro	SR-91 (WB) Shoemaker to Alondra Improvements	PS&E	\$41.7	2021
16	Metro	I-710 (South) Corridor Improvement Projects	PAED & PS&E	\$141.0	2020
17	Metro	I-710 (South) Early Action Projects Soundwalls (Bell Gardens, Commerce, Compton, East Los Angeles, Long Beach)	PS&E & ROW	\$10.1	2020

PAED – Project Approval and Environmental Document

PS&E – Plans, Specifications and Estimates

ROW – Right of Way

Highway Program Status Summary (Measure R-Funded)

#	Lead	Project	Current Phase	Estimated Cost through Current Phase (\$mil)	Scheduled Completion
18	Various	SR-710 (North) Mobility Improvement Projects	PAED/PS&E/Construction	\$1,026.5	Varies
19	Caltrans	Soundwall Package 10	PS&E/ROW	\$11.7	2020
20	Metro	Soundwall Package 11	Construction	\$89.2	2021
			Subtotal Measure R Highway Projects:	\$3,170.5 M	

PAED – Project Approval and Environmental Document

PS&E – Plans, Specifications and Estimates

ROW – Right of Way

Highway Program Status Summary (Measure M-Funded)

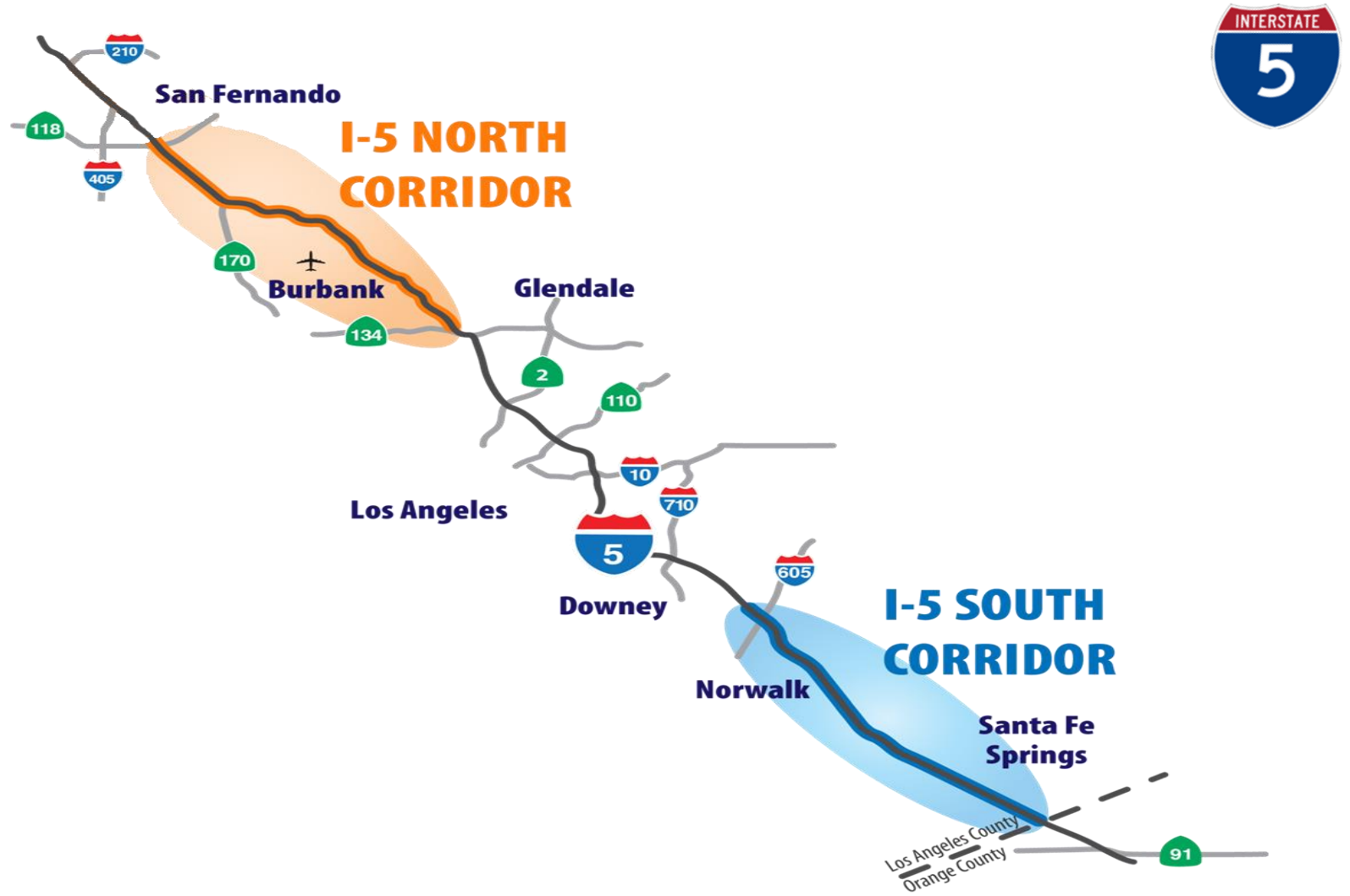
#	Lead	Project	Current Phase	Estimated Cost through Current Phase (\$mill)	Scheduled Completion
21	Metro	SR-57/SR-60 Interchange Improvements	PS&E & ROW	\$58.4	2021
22	Caltrans	SR 71: Interstate 10 to Mission Blvd (North)	PS&E & ROW	\$40.4	2022
23	Caltrans	SR 71: Mission Blvd to SR-60 (South)	Construction	\$175.5	2023
			Subtotal Non-Measure R &M Funded Highway Projects:	\$274.3	

PS&E – Plans, Specifications and Estimates
ROW – Right of Way

Highway Program Status Summary (Projects Moving to Construction by Metro)

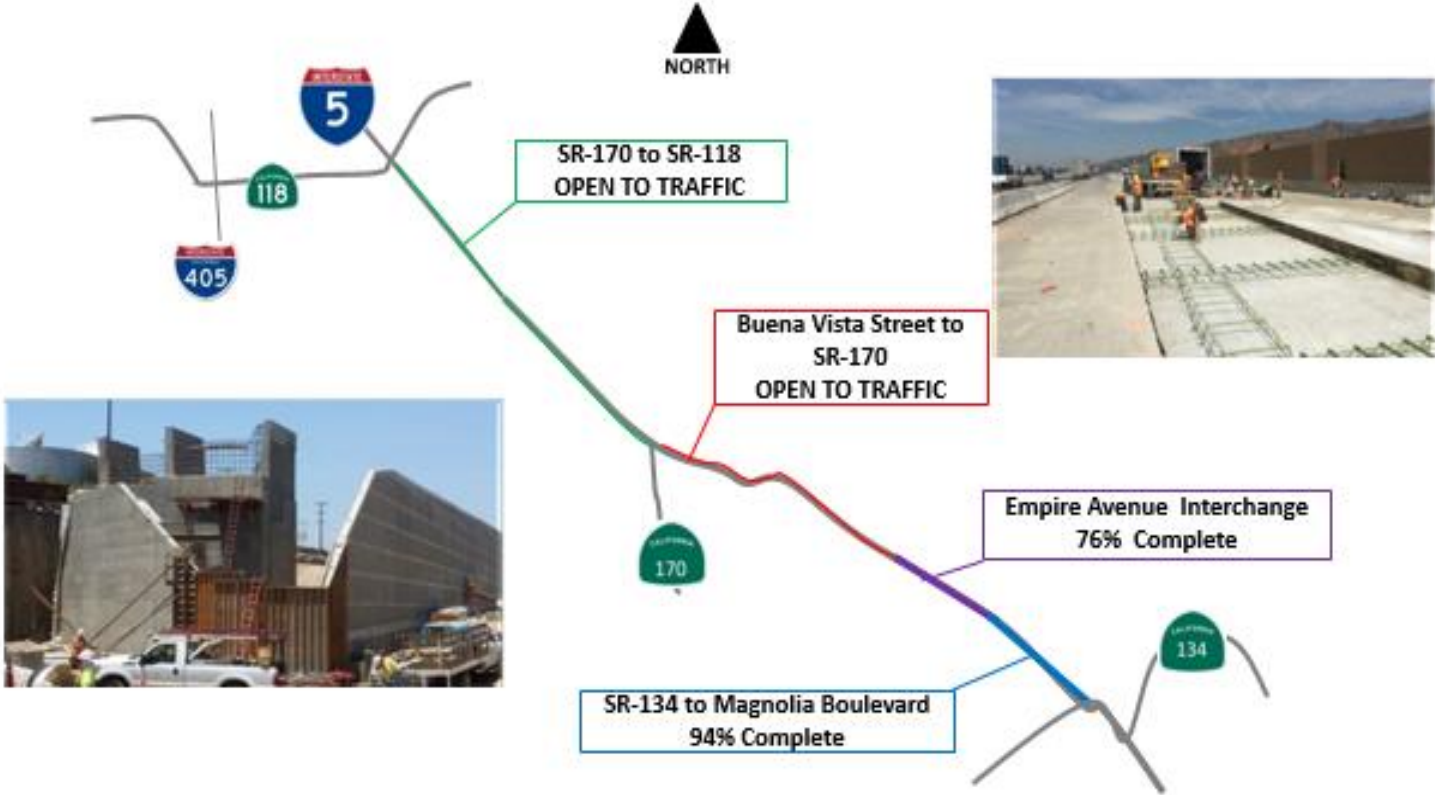
#	Lead	Project	Next Phase	Estimated Cost (\$mill)	Scheduled Completion
24	Metro	I-5 North HOV Project SR 14 to Parker Road	Construction	\$679.40	2025
25	Metro	I-605 from SR-91 to South Street Improvements	Construction	\$23.10	2021
			Subtotal Highway Construction:	\$702.50	
			TOTAL HIGHWAY PROGRAM:	\$4,147.30	

I-5 Construction Projects (By Caltrans)



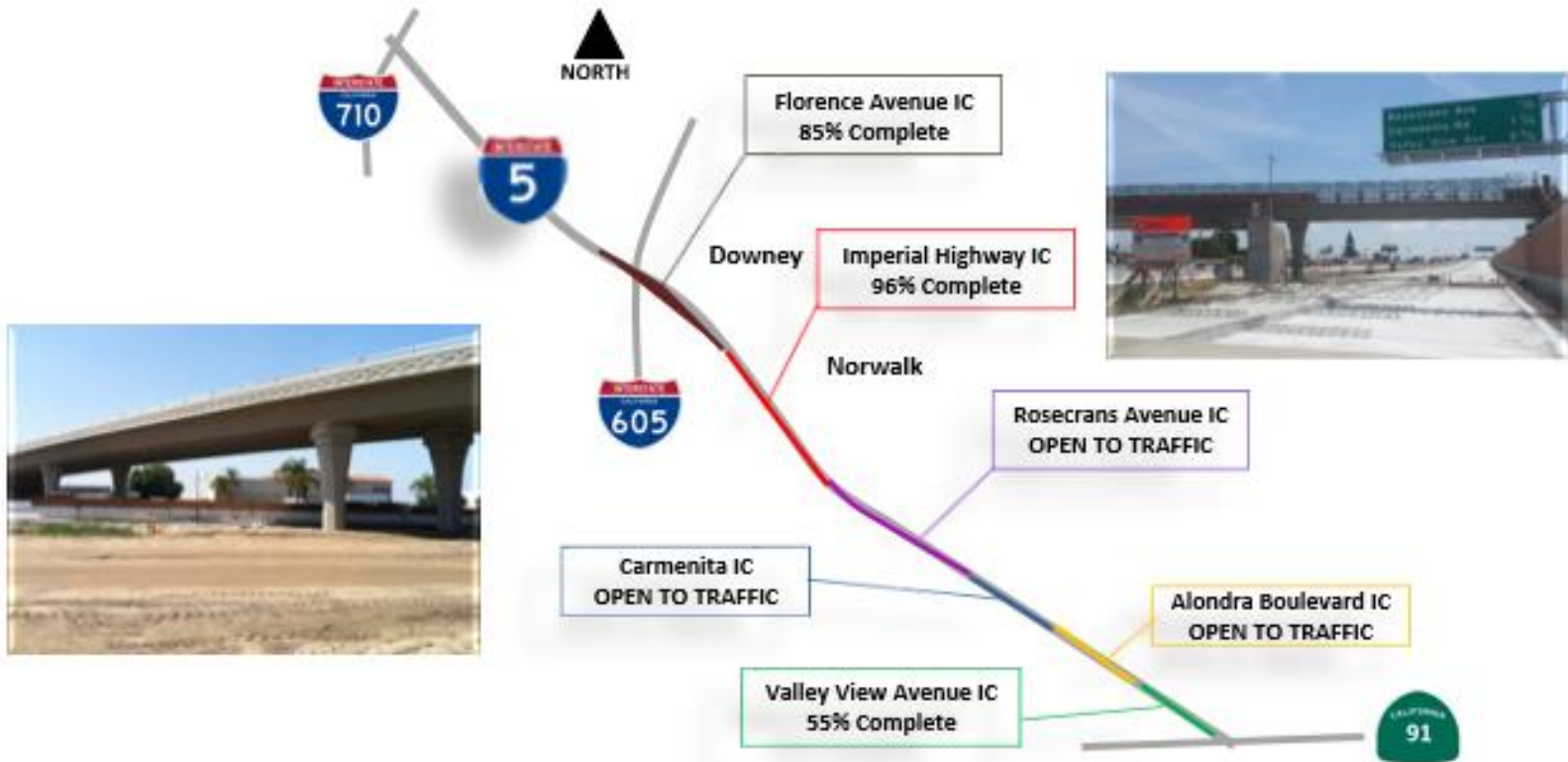
I-5 North: SR-118 to SR-134

Project Budget	Current	Forecast	ANTICIPATED OPEN TO TRAFFIC: Summer 2021
	\$880.9M	\$912.8M	



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

Project Budget	Current \$1.888B	Forecast \$1.888B	ANTICIPATED OPEN TO TRAFFIC: Fall 2021
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I-5 North Capacity Enhancements-Construction (SR14 to Parker Road)

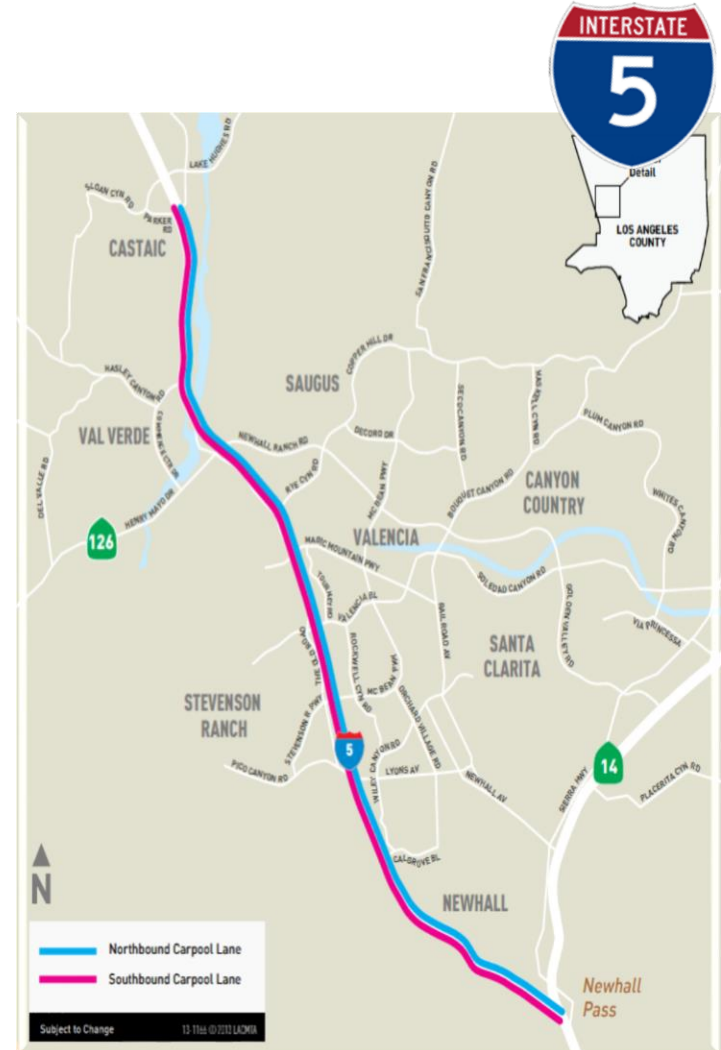
PHASE: Moving to Construction
Approved Budget: \$679.4M

Accomplishments:

- Secured \$47M in INFRA - Federal Funding
\$247M in TCEP - SB1 State Funding
- Released RFP for Construction Support Services in January 2020
- Anticipating to enter Construction phase in February 2021.

Challenges/Risks:

- Modification of Metro IFB Contract to incorporate Caltrans requirements.
- Coordination and community engagement.



I-605 Freeway “Hot Spots”

PHASE: Various

Approved Budget : \$132.2M

Estimated Cost to Complete Current Project Phases: \$132.2 M



Accomplishments:

- Pursuing early action projects parallel to the development of the I-605 corridor environmental document.
- Initiated PAED and PS&E for multiple Early Action Interchange projects now in progress, with estimated completions through 2022.
- Continuing strong collaborative work with local agencies and communities in developing new projects to relieve congestion in the corridor.

Challenges/Risks:

- Continue to break down corridor mega projects into smaller, fundable projects with independent utility and cumulative benefits.



I-710 (South) Corridor Improvement Projects

PHASE: PAED

Approved Budget : \$141.0M

Estimated Cost to Complete Phase: \$91.0M

Subsequent phases include specific freeway and interchange improvements, arterial and local crossing projects

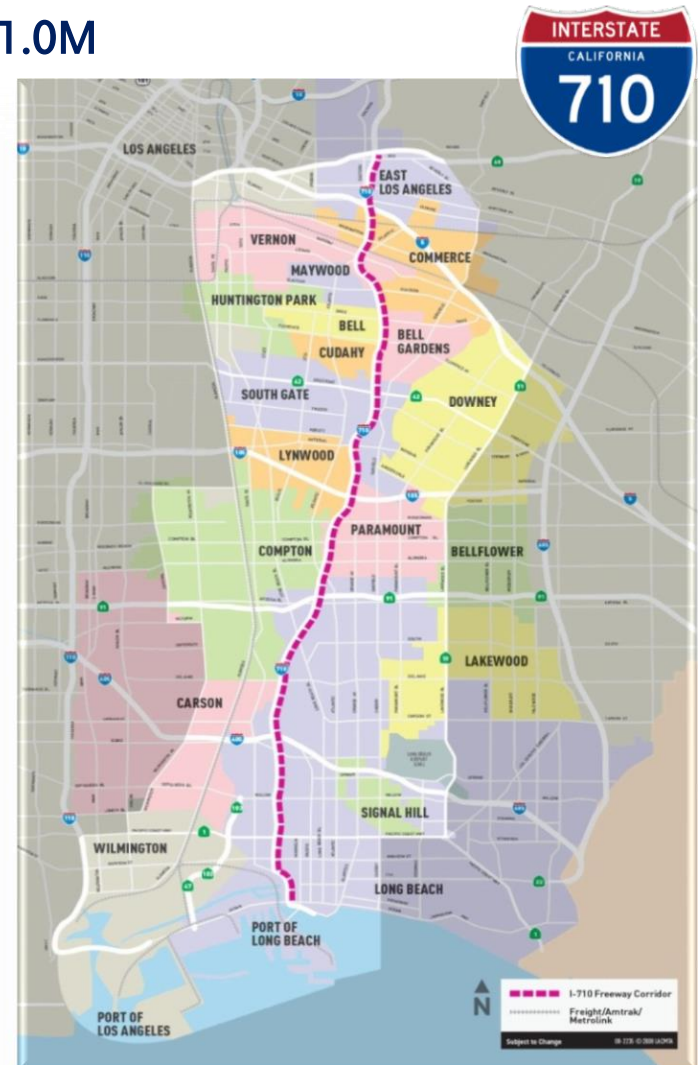
- Metro Board adopted Locally Preferred Alternative in March 2018.

Next Steps:

- Environmental phase is expected to be completed by Summer 2020 contingent upon EPA and Caltrans approvals of the document.
- Pursuing early action arterial projects during the development of the corridor environmental documents.
- Project funding \$50M clean truck initiative.

Challenges/Risks:

- Funding to pursue design and construction of all potential early action projects.



SR-710 (North) Mobility Improvement Projects

PHASE: Various

Approved Budget : \$1,026.5 M

Estimated Cost to Complete Projects: \$1,026.5M

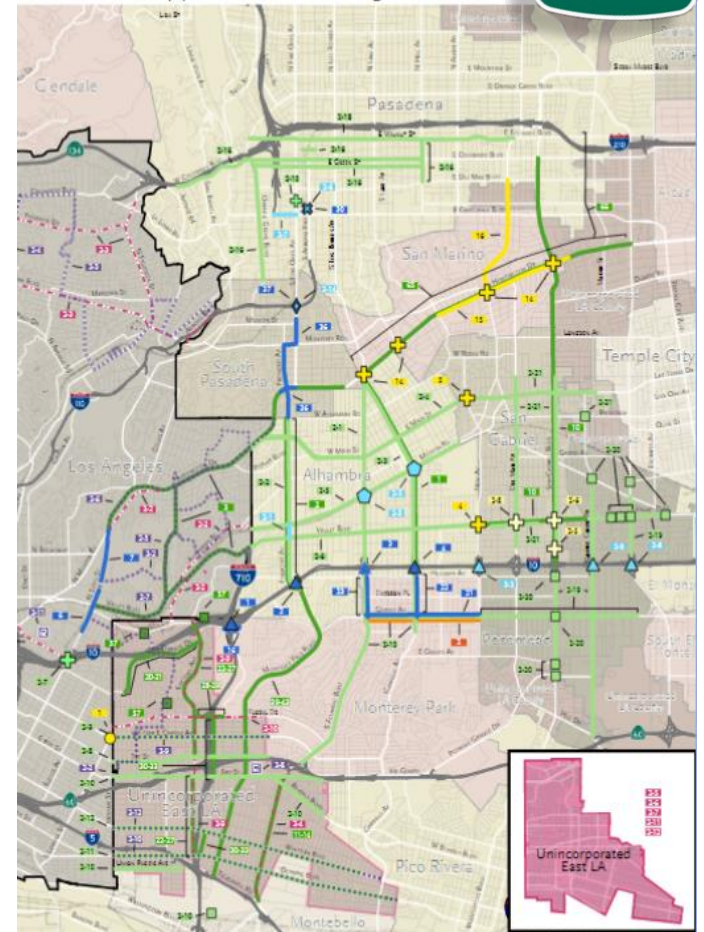


Accomplishments:

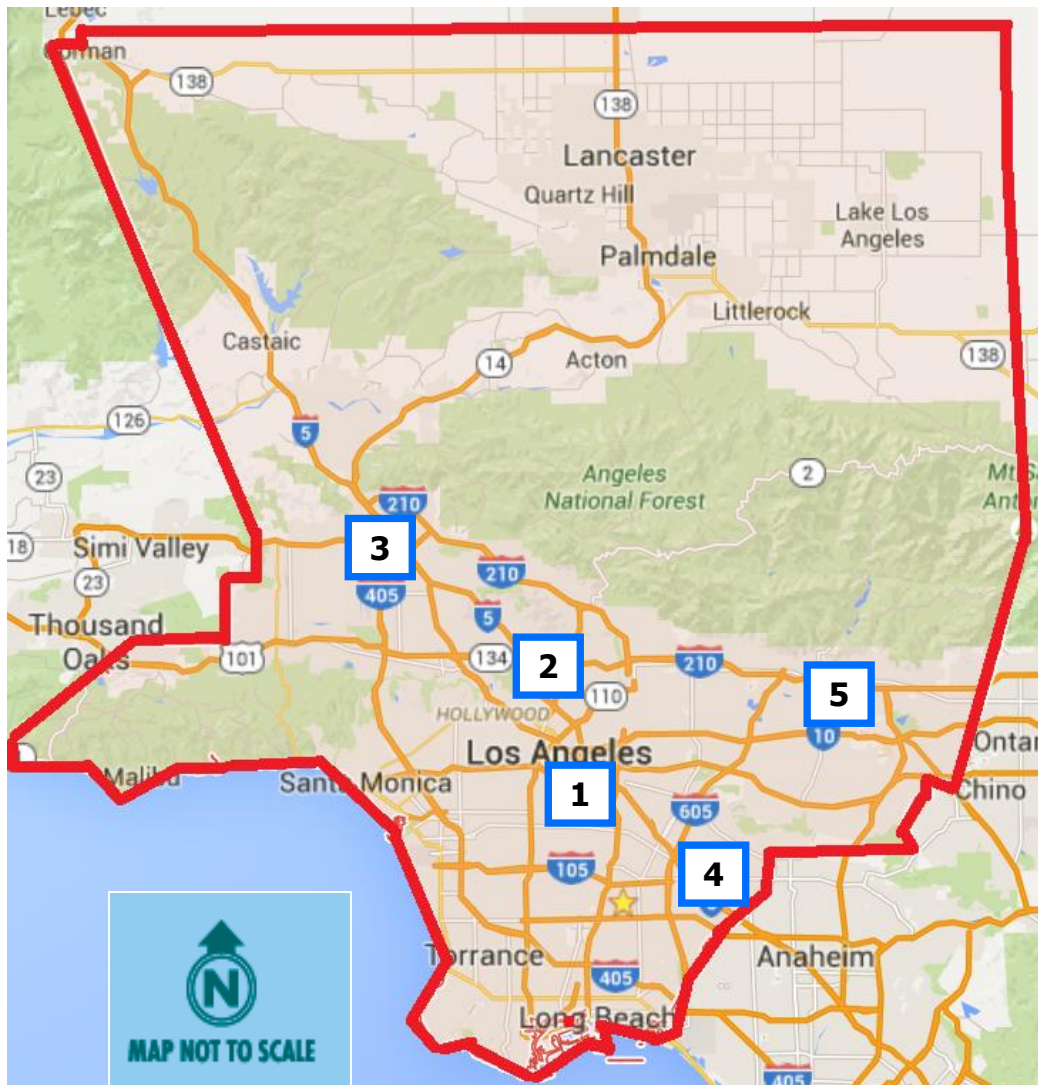
- Over 80 projects are planned for the Cities of Alhambra, Monterey Park, Pasadena, Rosemead, San Gabriel, San Marino, South Pasadena, and City and County of Los Angeles
- The Mobility Improvement Projects Include:
 - Local street/corridor improvements
 - Freeway/local interchange and ramp improvements
 - Local street intersection improvements
 - Intelligent transportation system improvements
- Most projects planned to be completed in the next 10 years delivering regional and local benefits

Next Steps:

- Next Step - Coordinate and execute funding agreements for projects already approved by the board
- Facilitate project delivery for local jurisdictions with limited resources



Regional Rail Program (LA County)



1. LINK Union Station
2. Doran Street and Broadway/Brazil Grade Separation Project
3. Brighton to Roxford Double Track Project
4. Rosecrans/Marquardt Grade Separation Project
5. Lone Hill to CP White Double Track Project

Los Angeles County:



Regional Rail Program Summary

#	Project	Current Phase	Estimated Costs through Current Phase (\$mil)	Current Phase Completion
1	LINK Union Station Project	Environmental & PE	\$99.8	2019
2	Doran Street and Broadway/ Brazil Grade Separation Project	Environmental/PE	\$11.6	2020
3	Brighton to Roxford Double Track Project	Environmental/ Final Design	\$16.7	2020
4	Rosecrans/Marquardt Grade Separation Project	Environmental; Plan, Specification & Estimate Final Design, Real Estate Acq.	\$26.5	2021
5	Lone Hill to White Double Track Project	Environmental & Final Design	\$10.0	2020
Total Regional Rail Program			\$164.6	

Link Union Station (LINK US)

Estimated Cost to Complete Environmental/PE: \$99.8 M

Current Phase Completion Date: 2021

Accomplishments:

- Phase A of the project is funded with a total of \$950.4 million. Received concurrence from funding partners on the project scope for Phase A with 9 run-through tracks structure.
- CEQA EIR was completed in July 2019 and 35% PE Design for Phase A was completed in December 2019.
- CMGC Project Delivery Method was approved by the Board in December 2019 for Link US Phase A.
- CHSRA Board approved \$423.335 million for the project



Challenges/Risks:

- In July 2019, CHSRA received approval for NEPA assignment on HSR improvements in California. Therefore, the Link US EIS Environmental has restarted with CHSRA as the lead agency and is anticipated to be completed in Spring 2021.
- The funding partners modified the scope of work to include partial relocation of the BNSF tracks on the West Bank. Staff is processing a CEQA Amendment for the partial relocation of the BNSF storage tracks.

Doran Street and Broadway/ Brazil Grade Separation Project

Est. Cost to Complete Environ./Design: \$11.6 M

Current Phase Completion Date: 2020

Accomplishments:

- CPUC approval to modify the one-way interim at-grade improvements at Doran Street crossing to two-way configuration at quiet zone ready improvements on 1/10/19.
- Received CTC staff recommendation on 12/28/2018, under ATP cycle 4, for \$16.3M for the \$22M needed for design/construction of both structures.
- Completed construction of Broadway/Brazil Traffic Signal Improvements.
- Metro Board Approval in October 2019 to add active transportation access elements into the Project.
- In October 2019, Metro Board approved programming \$3M of Measure R 3% funds for design costs, amending the 2020 budget for ATP elements.
- 100% Draft Submittal for the At-Grade Improvements at Doran Street.

Challenges/Risks:

- Pending contract modification.
- Obtaining construction funding for the interim improvements at Doran Street and improvements for the grade separation.
- Seeking Board approval for an additional \$500K in third party costs to account for the scope of work modifications.



Brighton to Roxford Double Track Project

Estimated Cost to Complete Environmental/Final Design: \$16.7 M
Current Phase Completion Date: 2020

Accomplishment:

- The 65% design plans and specs was completed on December 4, 2019.

Challenges/Risks:

- CEQA Environmental anticipated to be completed in Spring 2020.
- 90% Final Design anticipated to be completed in Winter 2020.
- Third Party City agencies approval of grade crossing improvements.



Rosecrans/Marquardt Grade Separation Project

Current Estimate for Total Project: \$26.5 M
Current Phase Completion Date: 2021

Accomplishments:

- Metro is in possession of all eight full take real estate acquisitions.
- 90% Final Design was completed in February 2020.
- Early demolition work began in November 2019 and anticipated to be completed in June 2020.

Challenges/Risks:

- June 2020 is the deadline for all real estate work, Right-of-Way (ROW) certifications.
- SCE utility relocation work needs to begin in Spring 2020.
- The project must be ready for advertisement/issued for bid and award for construction by December 2020 to comply with other funding source regulations.



Lone Hill to White Double Track

Estimated Cost to Complete Environmental/Final Design: \$10.0 M

Current Phase Completion Date: 2020

Accomplishment:

- Categorical Exclusion environmental documents filed in Fall 2019.
- Preliminary Engineering is complete.

Challenges/Risks:

- Metro Board can decide not to approve staff recommendation for final design award.



FY21 Summary

New Projects with Planned Adoption of Life-of-Project Budget:

- Orange Line Bus Rapid Transit Improvement Project
- East San Fernando Valley Transit Corridor Project
- West Santa Ana Branch Project
- Airport Metro Connector Project
- Metro Eastside Access Improvement Project
- Rail to Rail Corridor Active Transportation Connector Project

Existing Projects with Potential Adjustments to LOP Budget (separate Board action required):

- Crenshaw/LAX Transit Project
- Doran Street and Broadway/Brazil Safety and Access Projects
- Westside Purple Line Extension Section 1

Next Steps

- Project Managers to manage project scope, budget, and schedule for quality, on-time and within budget delivery
- To present project-specific Life-of-Project budgets for Board review and adoption
- Maintain resources and staffing needed to manage and support project delivery
- Seek additional revenue sources needed to fulfill funding commitment required to build and deliver projects.



Appendix: Project Listing by Type

	TRANSIT CAPITAL PROJECTS W/TOTAL PROJECT COSTS > \$5 M	TYPE	BUDGET(\$ MIL.)
1	Crenshaw/LAX Transit Project	Major Construction	\$2,058.0
2	Regional Connector Transit Project	Major Construction	\$1,755.8
3	Westside Purple Line Extension Section 1 Project	Major Construction	\$2,778.9
4	Westside Purple Line Extension Section 2 Project	Major Construction	\$2,440.9
5	Westside Purple Line Extension Section 3 Project	Major Construction	\$3,223.6
6	Gold Line Foothill Extension Phase 2B Project	Major Construction	\$1,532.9
7	Orange Line Bus Rapid Transit Improvements	Major Construction	\$22.0 (a)
8	West Santa Ana Branch	Major Construction	\$49.0 (a)
9	East San Fernando Valley	Major Construction	\$21.5 (a)
		Total	\$13,882.6
10	Airport Metro Connector Project	Misc. Capital Projects	\$180.7
11	Division 20 Portal Widening Turnback Facility	Misc. Capital Projects	\$801.7
12	Rail to Rail Corridor Active Transportation Connector Project	Misc. Capital Projects	\$12.9 (a)
13	Metro Eastside Access Improvements Project	Misc. Capital Projects	\$22.6 (a)
14	Sounwall 10	Misc. Capital Projects	\$50.9
		Misc. Capital Projects Total	\$1,068.8
15	Metro Gold Line I-210 Barrier Replacement Phase I	Security/Safety	\$22.5
16	Metro Center Street Project (Emergency Security Operations Center)	Security/Safety	\$206.0
17	Rail Operations Center/Bus Operations Center	Security/Safety	\$24.0
		Security/Safety Total	\$252.5
18	Systemwide Elevator Installations (Vertical Systems)	Rail Facilities Improvements	\$8.0
19	Light Rail Transit Freeway Stations Sound Enclosures	Rail Facilities Improvements	\$8.6
20	Metro Red Line Civic Center Station Escalator/Elevator Modernization	Rail Facilities Improvements	\$12.0
21	Willowbrook/Rosa Parks Station Improvement	Rail Facilities Improvements	\$128.3
		Rail Facilities Improv. Total	\$156.9
22	Metro Blue Line Pedestrian Safety Enhancement at Grade Crossings	Wayside Systems	\$31.4
23	Metro Blue Line Track and System Refurbishment	Wayside Systems	\$102.3
24	Metro Blue Line Signal System Rehabilitation	Wayside Systems	\$119.0
		Wayside Systems Total	\$252.7
25	Fuel Storage Tank Program (FY17 - FY19)	Bus Facilities Improvements	\$13.2
26	Fuel Storage Tank Program (FY20 - FY22)	Bus Facilities Improvements	\$23.4
27	Division 1 Improvements	Bus Facilities Improvements	\$20.9
28	Bus Facility Maintenance Improvements & Enhancements Phase III	Bus Facilities Improvements	\$21.7
29	Patsaouras Plaza Bus Station Construction	Bus Facilities Improvements	\$50.9
		Bus Facilities Improv. Total	\$130.0
		TRANSIT CAPITAL TOTAL	\$15,743.6

(a) Based on projected budget through FY21, prior to Board adoption of life-of-project budget.

Appendix: Project Listing by Type

	HIGHWAY	TYPE	CURRENT EST. (\$M.)
1	I-5 South – Valley View Interchange	Measure R Highway Capital Project	\$631.1
2	I-5 South – San Antonio, Imperial Hwy and Orr Day	Measure R Highway Capital Project	\$323.3
3	I-5 South – Florence Ave. Interchange	Measure R Highway Capital Project	\$211.7
4	I-5 North – North of Buena Vista to South of Magnolia Blvd	Measure R Highway Capital Project	\$397.0
5	I-5 North – Magnolia Blvd to SR 134	Measure R Highway Capital Project	\$168.2
6	I-605 Corridor Hot Spots – I-605/I-5 Interchange Improvement	Measure R Highway Capital Project	\$28.7
7	I-605 Corridor Hot Spots – I-605/SR 60 Interchange Improvement	Measure R Highway Capital Project	\$41.2
8	I-605 – Beverly Interchange Improvement Project	Measure R Highway Capital Project	\$3.7
9	I-605/Valley Boulevard Interchange Improvements	Measure R Highway Capital Project	\$2.2
10	SR-60/7th Avenue Interchange Improvements	Measure R Highway Capital Project	\$2.3
11	EB SR-91 Atlantic Ave. to Cherry Ave. Auxiliary Lane Improvements	Measure R Highway Capital Project	\$7.4
12	I-405 Crenshaw Blvd On and Off Ramp Improvements	Measure R Highway Capital Project	\$24.4
13	I-405 Auxiliary Lanes - Artesia Blvd to I-105	Measure R Highway Capital Project	\$4.1
14	I-710 (South) Corridor Improvement Projects	Measure R Highway Capital Project	\$141.0
15	I-710 (South) Early Action Projects - Soundwall Projects (3 locations)	Measure R Highway Capital Project	\$10.1
16	SR-91 Acacia Court to Central Ave.	Measure R Highway Capital Project	\$5.0
17	SR-91 (WB) Shoemaker to Alondra Improvements	Measure R Highway Capital Project	\$41.7
18	SR-710 (North) Mobility Improvement Projects	Measure R Highway Capital Project	\$1,026.5
19	Soundwall Package 10	Measure R Highway Capital Project	\$11.7
20	Soundwall Package 11	Measure R Highway Capital Project	\$89.2
		Measure R Highway Total	\$3,170.5
21	SR 57/SR 60 Interchange Improvements	Other Highway Projects	\$58.4
22	SR 71: Interstate 10 to Mission Blvd	Other Highway Projects	\$40.4
23	SR 71: Mission Blvd to SR-60 (South)	Other Highway Projects	\$175.5
		Other Highway Total	\$274.3
24	I-5 North HOV Project SR 14 to Parker Road	Highway Construction	\$679.4
25	I-605 from SR-91 to South Street Improvements	Highway Construction	\$23.1
		Highway Construction Total	\$702.5
		HIGHWAY PROGRAM TOTAL	\$4,147.3

Appendix: Project Listing by Type

	REGIONAL RAIL	TYPE	CURRENT EST. (\$M.)
1	LINK Union Station Project (Phases A and B)	Regional Rail	\$99.8
2	Doran Street and Broadway/Brazil Safety and Access Project	Regional Rail	\$11.6
3	Brighton to Roxford Double Track Project	Regional Rail	\$16.7
4	Rosecrans/Marquardt Grade Separation Project	Regional Rail	\$26.5
5	Lone Hill to White Double Track Project	Regional Rail	\$10.0
		REGIONAL RAIL TOTAL	\$164.6
		TOTAL PROGRAM	\$20,055.5

