Fiscal Year 2019
Program Management
Annual Program Evaluation
Presentation Overview

- Purpose and Process
- Capital Program Status
- Capital Program Costs and Schedules
- Adjustments for FY2019
- 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 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 future fiscal year annual budget review and adoption by the Board
Project Management

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

Scope

Triple Constraints

Schedule

Budget
FY19 Scope

- Focus on capital projects with total project cost greater than $5M being managed by Program Management:
  - Major Transit Construction Projects – 6 projects
  - Other Transit Capital Projects – 25 projects
  - Regional Rail Projects – 7 projects
  - Highway Program – 28 projects

- Project budgets in the APE focus on authorized funding amount

- Project funding amounts remain within the annual budget limit approved by the Board
FY19 Scope

- In addition to the projects in APE, Program Management also manages/oversees 100+ Operations Capital Improvements and State of Good Repair projects.

- In total, Program Management manages and supports volume of 170+ projects with a total authorized value estimated at $16.8 billion.

- Approximately $16 billion of approved budget in projects are included in the FY19 APE review.
FY19 Current Program: $16 B

- Major Transit Construction: $10.8 billion (67%)
- Highway Program: $3.8 billion (24%)
- Regional Rail: $0.3 billion (2%)
- Other Capital: $1.1 billion (7%)

$ in billions
Program Highlights

- Overall Program increased from $13.8 billion in FY18 to $16 billion in FY19

- Program dollars approved for Major Transit Construction projects increased 16% from FY18 to FY19

- With implementation of Measure M and 28 by 2028 Initiative, Metro’s capital program will grow significantly in the next decade
Program Challenges

- Deliver multiple large and complex projects on-time and 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 in a growing construction market
- Maintain sufficient resources and staffing needed to manage and support project delivery
- Achieve continuous improvement in project delivery through innovation and application of best practices
Strategic Initiatives

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

- Establish more reliable Life-of-Project budgets
- Conduct Annual Program Evaluation of Metro’s capital program
- Engage robust management and support services consulting teams to augment technical expertise and resources
- Implement new organizational approaches
- Continue systematic approach for Quality Assurance (on-going)
Strategic Initiatives

- Improved Change Control Procedure
- Implemented Project Readiness Procedure
- Implemented Project Delivery Selection Procedure
- Established Program Management Leadership Institute (PMLI)
- Enhanced Risk Management Program
- Improved Best Practices/Lessons Learned Program
- Received Board Delegated Authority for LOP Budget Management on all transit and regional rail projects
  - Quarterly reporting to the Board on Changes and Modifications that are above $500,000
Strategic Initiatives

Consistent Implementation of Concurrent Non-Project Activities Project for Major Capital Projects

- Concurrent Non-Project Activities Project are implemented on several Metro projects, including Metro Gold Line Eastside Extension Phase 1 Project and the Regional Connector Project
- Intended to track betterments, non-federally eligible costs and other activities not part of the core project scope
- Concurrent Non-Project Activities Project is approved by the Board but budgeted outside of the Board adopted major capital project LOP budget
- This will protect the integrity of the core LOP Budget and improve transparency
Metro Transit Program

*Proposal to extend to Montclair by others; not a part of Measure M/Long Range Transportation Plan.
## Metro Transit Capital Projects

<table>
<thead>
<tr>
<th>Type</th>
<th>Project Budget (in millions)</th>
<th># of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Transit Construction</td>
<td>$10,804</td>
<td>6</td>
</tr>
<tr>
<td>Other Transit Capital</td>
<td>$1,051</td>
<td>25</td>
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<tr>
<td>Bus Facilities</td>
<td>$143</td>
<td>9</td>
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<tr>
<td>Rail Facilities</td>
<td>$242</td>
<td>6</td>
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<tr>
<td>Wayside Systems</td>
<td>$150</td>
<td>2</td>
</tr>
<tr>
<td>Security/Safety</td>
<td>$124</td>
<td>2</td>
</tr>
<tr>
<td>Misc. Capital</td>
<td>$392</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Transit Capital Program</strong></td>
<td><strong>$11,855</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>
Metro Transit Capital Program Summary

Projects Completion In FY2018

- Metro Pershing Replacement/Modernization Project (2nd Quarter)
- Bus Facility Maintenance Improvements & Enhancements Phase I (Scheduled 4th Quarter)
- Metro Blue Line Pedestrian Safety Enhancement at Grade Crossings (Scheduled 4th Quarter)

Project Completion Planned in FY2019:

- Metro Silver Line Improvements and Upgrades
Metro Transit Capital Program Summary

Projects Transitioned from Planning to Program Management in FY18:

- Willowbrook/Rosa Parks Station Improvements Project
- Airport Metro Connector Project (96th Street Station)
- Metro Gold Line Eastside Access Project
- Rail to Rail Corridor Active Transportation Connector Project

Planned Transition from Planning to Program Management in FY19:

- Orange Line Bus Rapid Transit Improvement Project
- North Hollywood to Pasadena Bus Rapid Transit Project
- East San Fernando Valley Transit Corridor Project
Crenshaw/LAX Transit Project
Crenshaw/LAX Transit Project

Project Budget: $2,058M  Project Completion: October 2019
Project Complete: 79%

Accomplishments:
- All five tunnel structures are complete
- All six at-grade and aerial stations’ structures are complete
- The three underground stations’ structures are approaching 80% completion
- Continuing critical track work installation along the southern section of the eight mile alignment
- Systems installation has commenced
- Working closely with community to mitigate any concerns during construction

Challenges / Risks:
- Limited remaining cost contingency
- Near-term need for concurrent non-project activities to capture Crenshaw/LAX Project non-federal eligible costs and betterments which currently are reducing available project contingency
- Contractor behind schedule and is required to mitigate delays to achieve revised baseline schedule. Metro and contractor mitigating delays to ensure meeting October 30, 2019 revenue service date
Regional Connector Transit Project
## Regional Connector Transit Project

<table>
<thead>
<tr>
<th>Project Budget: $1,756 M</th>
<th>Project Completion: December 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Excludes finance costs)</td>
<td>Project Complete: 49%</td>
</tr>
</tbody>
</table>

### Accomplishments:
- Successfully completed tunnel boring machine (TBM) operations; retired TBM "Angeli" in mid-January
- Initiated build-out of permanent structural elements at the Grand Av Arts/Bunker Hill Station
- Advanced support of excavation (SOE) installations and utility relocations on Flower Street sufficient to facilitate completion of decking placement from 4th Street to 6th Street; steady state operations are now underway between these stakeholder-sensitive points
- Safely initiated and completed closure of 6th Street east of Flower Street to facilitate key utility relocations in the intersection
- Completed 126"LA County Storm Line relocation along 2nd between Broadway and Spring to allow station box excavation and adjacent building underpinning
- Executed global agreement with contractor which addressed cumulative schedule and cost impacts of numerous utility interferences

### Challenges/Risks:
- Transitioning from a TBM mining-centric priority to permanent station and cut/cover guideway construction
- Securing and retaining sufficient craft labor resources to safely, and efficiently prosecute the work
- Effectively identify and manage risks early to afford broader response options for improving or protecting schedule and costs
- Maintaining stakeholder support for necessary traffic control, extended work-hour permits, and general disruptions inherent to heavy construction in a dense urban setting
- Relocating LADWP underground power assets south of 6th/Flower intersection to allow LADWP forces to complete the cabling and intercepts throughout the area per plan and schedule
Westside Purple Line Extension Project
Westside Purple Line Extension Section 1

Project Budget: $2,779 M  
Forecast Completion: November 2023  
Project Complete: 31% 
(Excludes finance costs)

Accomplishments:
FY18
- Completed Wilshire/La Brea Station excavation and began station concrete operations
- Delivery of tunnel boring machines (TBM)
- Completed Wilshire/La Cienega Station street decking and began excavation
- Completed Wilshire/Western TBM retrieval site piling and street decking

Planned FY19
- Commence Reach 1 tunnel drive from Wilshire/La Brea Station to Wilshire/Western TBM retrieval site
- Complete excavation and temporary TBM support slab at Wilshire/Western TBM retrieval site
- Begin Wilshire/Fairfax Station concrete operations
- Complete excavation at Wilshire/La Cienega Station

Challenge:
- Potential schedule delay due to differing site conditions
Westside Purple Line Extension Section 2

Project Budget: $ 2,441M
Forecast Completion: August 2025
(Excludes finance costs)
Project Complete: 6%

Accomplishments:
FY18
- Completed joint trench civil work, telecom cable pulling and splicing, and Southern California Gas (SCG) utility relocations at Century City Constellation Station
- Completed Southern California Edison (SCE) utility relocations at Wilshire/Rodeo Station
- Began SCG and AT&T utility relocations at Wilshire/Rodeo Station
- Signed Memorandum of Agreement (MOA) with the City of Beverly Hills for third party utility relocations
- Continue property acquisitions, final design, manufacturing of TBM, and construction mobilization

Planned FY19
- Complete third party utility relocations civil work at Century City Constellation Station
- Complete final design
- Deliver and assemble tunnel boring machines and begin tunnel mining
- Begin construction of Wilshire/Rodeo Station
- Acquire all subsurface property easements

Challenge:
- Manage in accordance with the signed MOA with the City of Beverly Hills

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FY2019 APE

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25
Westside Purple Line Extension Section 3

Projected Budget through FY19: $364M  Forecast Completion: TBD
Working Project Estimate: $3.0 B
(Excludes finance costs)

Accomplishments:

FY18
- Submitted Request for Letter of No Prejudice to FTA for the Tunnels Contract
- Issued Stations, Trackwork and Systems Contract solicitation
- Executed the Construction Management Support Services Contract
- Issued the Notice to Proceed (NTP) for Wilshire/UCLA Advanced Utility Relocations

Planned FY19
- Complete real estate certification process and begin property acquisitions
- Substantially complete Wilshire/UCLA Advanced Utility Relocations
- Continue third party utility relocations
- Issue NTP for Stations, Trackwork and Systems Contract (Planned 4th Quarter)
- Complete final design of the Tunnels
- Tunnel boring machine power becomes available
- Receive approval of the Full Funding Grant Agreement from FTA

Challenges/Risks:
- Secure FTA’s funding commitment; may impact cost and schedule
- Timely receipt of construction and staging areas at the VA Hospital and the Army Reserve to begin construction as currently planned
Gold Line Foothill Extension Phase 2B
Gold Line Foothill Extension Phase 2B

Project Budget: $1,407 M  Forecast Completion: 2027

Accomplishments:
- Ground breaking in December 2017
- Commenced year long Design-Build solicitation for Phase 2B Alignment in November 2017
- Submitted 28 of 50 grade crossing applications to California Public Utility Commission

Challenges/Risks:
- Construction while under operations and accommodating future projects
- Close coordination with Third Party entities, including SCRRRA (Metrolink), San Bernardino County Transportation Authority, and Cities
- Secure commitment from Transit and Intercity Rail Capital Program to fully fund approved budget
- Lawsuits from local jurisdictions
Patsaouras Plaza Busway Station

Project Budget: $ 39.7 M
Project Completion: December 2018
Project Complete: 54%

Accomplishments:
- Completion of all major design work
- Completion and approval of all bridge falsework and bridge foundations
- Major concrete work is in progress

Challenges/Risks:
- Third party review/approvals, including the City of Los Angeles and Caltrans, in a timely manner
- Potential budget and schedule impacts due to design changes and unforeseen field conditions during underground construction
- Maintain planned schedule milestones
Metro Blue Line Signal Rehabilitation Project

Project Budget: $119 M  
Project Completion: April 2021  
Project Complete: 14%

Accomplishments:
- Met Cap & Trade deadline for project funding
- Issued Notice to Proceed to contractor
- Complete 60% design is under review

Challenges/Risks:
- Track allocation coordination with other projects/maintenance on Metro Blue Line
- Existing aged ductbank/conduits may require replacement, potential additional scope
- Complete the resignaling scope within the scheduled Metro Blue Line shutdown window

New train control

Project adds 4 Crossovers
Willowbrook/Rosa Parks Station Project

Approved Budget through FY19: $36.0 M  
Forecast Completion: Summer 2020  
Working Project Estimate: $92.4 M

Accomplishments:
- Completion of real estate acquisition
- Completion of all final design work
- First contract has been awarded, and procurement of second contract is underway

Challenges/Risks:
- Continue Third Party cooperation review/approval, including City of Los Angeles, County, Caltrans, Union Pacific, Public Utility Commission to be consistent with project schedule
- Construction phase plan coordination during Metro operations
- Meet groundbreaking deadline for funding
Emergency Security Operations Center

Project Budget: $113 M
Forecast Completion: Phase 1 in Dec. 2021

Accomplishments:
- Completed preliminary engineering drawings in July 2017
- Issued best value design build procurement in 2nd quarter 2018
- Completion of Constructability review

Challenges/Risks:
- Coordination with adjacent Division 20 Portal Widening Turnback and LINK US projects
- Staff intends to provide $100,000 per stipend agreement for unsuccessful responsive bidders on the design build solicitation to enhance competition
- Staff plans to return to the Board in Winter 2019 for an increase to LOP budget
Highway Program
### Highway Program Status Summary
(Measure R Funded)

<table>
<thead>
<tr>
<th>#</th>
<th>Project</th>
<th>Current Phase</th>
<th>Estimated Costs through Current Phase ($mil)</th>
<th>Current Phase Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I-5 South – Alondra</td>
<td>Construction</td>
<td>$114.1</td>
<td>Completed</td>
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<tr>
<td>2</td>
<td>I-5 South – Valley View Interchange</td>
<td>Construction</td>
<td>$631.1</td>
<td>Aug 2022</td>
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<tr>
<td>3</td>
<td>I-5 South – Shoemaker, Rosecrans, Bloomfield</td>
<td>Construction</td>
<td>$188.2</td>
<td>Mar 2019</td>
</tr>
<tr>
<td>4</td>
<td>I-5 South – San Antonio, Imperial Hwy and Orr Day</td>
<td>Construction</td>
<td>$323.3</td>
<td>Jul 2019</td>
</tr>
<tr>
<td>5</td>
<td>I-5 South – Florence</td>
<td>Construction</td>
<td>$211.7</td>
<td>Jul 2020</td>
</tr>
<tr>
<td>6</td>
<td>I-5 South – Carmenita Interchange</td>
<td>Construction</td>
<td>$419.9</td>
<td>Mar 2018</td>
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<tr>
<td>7</td>
<td>I-5 North – HOV from SR 118 to SR 170</td>
<td>Construction</td>
<td>$219.9</td>
<td>Completed</td>
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<tr>
<td>8</td>
<td>I-5 North – HOV from FR 170 to North of Buena Vista</td>
<td>Construction</td>
<td>$94.7</td>
<td>Completed</td>
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<tr>
<td>9</td>
<td>I-5 North – North of Buena Vista to South of Magnolia Blvd</td>
<td>Construction</td>
<td>$402.4</td>
<td>Jun 2020</td>
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<tr>
<td>10</td>
<td>I-5 North – Magnolia Blvd to SR 134</td>
<td>Construction</td>
<td>$137.4</td>
<td>Apr 2019</td>
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</table>
## Highway Program Status Summary (Measure R Funded)

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<tr>
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<th>Current Phase</th>
<th>Estimated Costs through Current Phase ($mil)</th>
<th>Current Phase Completion</th>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>I-5 North HOV Project SR 14 to Parker Road</td>
<td>Plans, Specifications &amp; Estimates (PS&amp;E)</td>
<td>$42.4</td>
<td>Dec 2018</td>
</tr>
<tr>
<td>12</td>
<td>Interstate 605 Corridor Hot Spots – I-605/I-5 Interchange Improvement</td>
<td>Project Approval/Environmental Document (PAED)</td>
<td>$30.3</td>
<td>Jul 2021</td>
</tr>
<tr>
<td>13</td>
<td>Interstate 605 Corridor Hot Spots – I-605/SR 60 Interchange Improvement</td>
<td>PAED</td>
<td>$41.6</td>
<td>Jul 2021</td>
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<tr>
<td>14</td>
<td>Interstate 605 Corridor Hot Spots – SR-91 Westbound Widening at I-605 Interchange</td>
<td>PAED</td>
<td>$9.3</td>
<td>Dec 2018</td>
</tr>
<tr>
<td>15</td>
<td>Interstate 605 Corridor Hot Spots – I-605 Beverly Interchange Improvement Project</td>
<td>PAED/PS&amp;E</td>
<td>$3.5</td>
<td>Apr 2019</td>
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<tr>
<td>16</td>
<td>I-605 from SR-91 to South St. Improvements Project</td>
<td>PAED/PS&amp;E</td>
<td>$4.5</td>
<td>Jan 2019</td>
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### Highway Program Status Summary (Measure R Funded)

<table>
<thead>
<tr>
<th>#</th>
<th>Project</th>
<th>Current Phase</th>
<th>Estimated Costs through Current Phase ($mil)</th>
<th>Current Phase Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Interstate 405 Crenshaw Blvd On and Off Ramp Improvements</td>
<td>PS&amp;E</td>
<td>$20.0</td>
<td>Mar 2020</td>
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<tr>
<td>18</td>
<td>Interstate 405 and I-110 Aux Lane from SR 91 to Torrance Blvd</td>
<td>Construction</td>
<td>$44.0</td>
<td>Dec 2019</td>
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<tr>
<td>19</td>
<td>I-710 (South) Corridor Improvement Projects</td>
<td>PAED</td>
<td>$91.0</td>
<td>Sep 2018</td>
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<tr>
<td>20</td>
<td>I-710 (South) Early Action Projects - Soundwall Projects (3 locations)</td>
<td>PS&amp;E &amp; ROW</td>
<td>$12.7</td>
<td>Aug 2019</td>
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<tr>
<td>21</td>
<td>I-710 (North) Early Action Projects</td>
<td>PAED</td>
<td>$47.0</td>
<td>Jun 2018</td>
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<tr>
<td>22</td>
<td>Soundwall Package 10</td>
<td>PS&amp;E</td>
<td>$59.4</td>
<td>Dec 2018</td>
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<tr>
<td>23</td>
<td>Soundwall Package 11</td>
<td>Construction</td>
<td>$89.2</td>
<td>Dec 2021</td>
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<td></td>
<td><strong>Subtotal Measure R Highway Projects</strong></td>
<td></td>
<td><strong>$3,237.2</strong></td>
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## Highway Program Status Summary (Non-Measure R Funded)

<table>
<thead>
<tr>
<th>#</th>
<th>Project</th>
<th>Current Phase</th>
<th>Estimated Costs through Current Phase ($mil)</th>
<th>Current Phase Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>I-10 HOV from Puente Avenue to Citrus Avenue (Seg. 2)</td>
<td>Construction</td>
<td>$195.6</td>
<td>Apr 2019</td>
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<tr>
<td>25</td>
<td>I-10 HOV from Citrus Avenue to SR 57 (Seg. 3)</td>
<td>Construction</td>
<td>$268.7</td>
<td>Jan 2022</td>
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<tr>
<td>26</td>
<td>SR-57/SR-60 Interchange Improvements (Eastbound and Westbound flyover off-ramp to Grand Ave, Eastbound on-ramp SR-60)</td>
<td>PS&amp;E and ROW</td>
<td>$54.0</td>
<td>Jul 2020</td>
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<tr>
<td>27</td>
<td>SR 71: Interstate 10 to Mission Blvd</td>
<td>PS&amp;E and ROW</td>
<td>$16.0</td>
<td>Dec 2020</td>
</tr>
<tr>
<td>28</td>
<td>SR 71: Mission Blvd to Rio Rancho Road</td>
<td>PS&amp;E and ROW</td>
<td>$40.0</td>
<td>Aug 2019</td>
</tr>
</tbody>
</table>

**Subtotal Non-Measure R Funded Highway Projects**  
$574.3

**TOTAL HIGHWAY PROGRAM**  
$3,811.5
I-5 Corridor Construction

I-5 Corridor Construction Projects Managed by Caltrans and Oversight by Metro
I-5 North: SR 118 to SR 134

**PHASE: CONSTRUCTION**

Project Managed by Caltrans:
- Approved budget: $854.0 M
- Estimated Cost to Complete Construction: TBD

**Accomplishments:**
- SR118 to SR170 - Construction Completed for new HOV Lanes and HOV Direct Connectors, Open to Traffic and Claims have been settled.
- SR170 to North of Buena Vista – HOV Construction Completed and Open to Traffic.
- North of Buena Vista to Magnolia Blvd including Empire Ave. Interchange – Construction in progress.
- Magnolia Blvd to SR 134 – Construction in progress.

**Challenges/Risks:**
- Adverse field conditions (Seg. 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).
- Several change orders have consumed significant cost contingency
- High risk level on potential schedule and budget impacts
I-5 South: Orange County Line to I-605

PHASE: CONSTRUCTION

Project Managed by Caltrans:

- Approved budget: $1,888.3 M
- Estimated Cost to Complete Construction: TBD

Accomplishments:

- Alondra Blvd – Started the pre-final Audit process
- Valley View Avenue – Construction in progress
- Rosecrans Avenue – Open to Traffic January 2018, Construction still in Progress
- Imperial Highway – Construction in progress
- Florence Avenue – Construction in progress
- Carmenita Interchange – Interchange open to traffic fall 2016. Construction on local streets in progress

Challenges/Risks:

- Extensive utility and ROW relocation
- Adverse field conditions and railroad work
- Schedule delay and potential budget overrun
- Timely resolution of valid contractors’ claims
- Low to medium risk level on potential schedule and budget impacts

This map is not to scale
PHASE: Plans, Specifications & Estimates
- Approved Budget: $42.4 M
- Estimated Cost to Complete Design: $42.4 M

Accomplishments:
- Awarded the PS&E Contract in June 2016
- 65% of PS&E Plans submitted to Caltrans on schedule in December 2017

Challenges/Risks:
- Coordination with Caltrans’ ongoing pavement rehabilitation project
- Delays with utility company facility relocations
- Right of Way Acquisition Delays
I-605 “Hot Spots”

PHASE: Various

- Approved budget: $88.7 M
- Estimated Cost to Complete Phase: $88.7 M

Accomplishments:

- I-605 Corridor Improvement Project (I-605/I-5 and I-605/SR-60) Commenced PAED in 2015 and 2016, respectively
- Completed I-605 Corridor Improvement Project scoping Meetings in Fall 2016
- I-605/SR-91 Westbound PAED expected May 2018
- Pursuing early action projects during the development of the corridor environmental document

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
I-710 South Corridor Improvement Projects

Project Phase: Project Approval/Environmental Document

- Approved Budget: $91.0 M
- Estimated Cost to Complete Phase: $91.0 M

Accomplishments:
- Conducted additional studies as directed by the Board
- Strong collaborative work with the local agencies, communities, and Metro Board members in addressing community concerns
- Alternative 5C approved by Metro Board on March 1, 2018 as the Locally Preferred Alternative
- 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
- Proper phasing of the project funding
I-710 North Early Action Projects

PHASE: Project Approval/Environmental Document
- Approved Budget: $47.0 M
- Estimated Cost to Complete Phase: $47.0 M

Accomplishments:
- Environmental Document is being finalized in Spring of 2018
- General agreement has been reached to invest in early action traffic mitigation/congestion relief projects
- Pursuit of early action congestion relief projects will start upon approval of the Final Environmental Document by Caltrans

Challenges/Risks:
- Consensus among local jurisdictions to apply available funds
Regional Rail Program

Los Angeles County

1. LINK Union Station
2. Burbank Airport North - Metrolink Station Project
3. Doran Street and Broadway/Brazil Grade Separation Project
4. Brighton to Roxford Double Track Project
5. Rosecrans/Marquardt Grade Separation Project
6. Lone Hill to CP White Double Track Project
7. Raymer to Bernsen Double Track Project
# Regional Rail Program Summary

<table>
<thead>
<tr>
<th>#</th>
<th>Project</th>
<th>Current Phase</th>
<th>Estimated Costs through Current Phase ($mil)</th>
<th>Current Phase Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LINK Union Station Project</td>
<td>Environmental &amp; PE</td>
<td>$71.6</td>
<td>June 2019</td>
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<tr>
<td>2</td>
<td>Burbank Airport – North Metrolink Station Project</td>
<td>Construction</td>
<td>$15.0</td>
<td>April 2018</td>
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<tr>
<td>3</td>
<td>Doran Street and Broadway/Brazil Grade Separation Project</td>
<td>Environmental/PE</td>
<td>$11.6</td>
<td>November 2019</td>
</tr>
<tr>
<td>4</td>
<td>Brighton to Roxford Double Track Project</td>
<td>Environmental/ Final Design</td>
<td>$15.0</td>
<td>October 2019</td>
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<tr>
<td>5</td>
<td>Rosecrans/Marquardt Grade Separation Project</td>
<td>Environmental; Plan, Specification &amp; Estimate Final Design, Real Estate Acq.</td>
<td>$155.3 (including construction)</td>
<td>September 2022</td>
</tr>
<tr>
<td>6</td>
<td>Lone Hill to White Double Track Project</td>
<td>Environmental &amp; Final Design</td>
<td>$10.0</td>
<td>September 2020</td>
</tr>
<tr>
<td>7</td>
<td>Raymer to Bernsen Double Track Project</td>
<td>Environmental &amp; Final Design</td>
<td>$6.0</td>
<td>June 2020</td>
</tr>
<tr>
<td></td>
<td><strong>Total Regional Rail Program</strong></td>
<td></td>
<td><strong>$284.5</strong></td>
<td></td>
</tr>
</tbody>
</table>
Link Union Station (LINK US)

Estimated Cost to Complete Environmental/PE: $71.6 M
Current Phase Completion Date: June 2019

Accomplishments:

- Board approved to proceed with staff recommended alternative 2 in March 2017 with six Regional Rail run-through tracks and two High Speed Rail run-through tracks to be carried forward in the NEPA and CEQA as the locally preferred alternative
- New above-grade concourse concepts and various active transportation linkage options was presented to July 2017 Board
- Worked closely with Division 20 Portal Widening Team in November 2017 to collaborate on design modifications to both the Portal project and the Link US run-through tracks to accommodate each project

Challenges/Risks:

- Potential return to the Board in June for additional budget in the amount of $1.2M to accommodating WSAB Line at LAUS rail yard while the WSAB Line is undergoing potential project redefinition
- Funding commitments from HSR on required number of platforms and run-through track
- Board authorization on the preferred alternative will be sought in Summer 2018
Burbank Airport – North Metrolink Station Project

Project Budget: $15.0M

Project Completion: April 2018

Accomplishments:

- Construction to be completed on-time and under budget
- Ribbon cutting/Grand opening anticipated in mid May 2018
- Revenue Service in May
Doran Street and Broadway/Brazil Grade Separation Project

Est. Cost to Complete Environmental/Design: $11.6 M
Current Phase Completion Date: November 2019

Accomplishments:
- Completion of Alternative Analysis; starting environmental
- Submittal of Petition to Modify from the proposed one-way interim at-grade improvements at Doran Street to a two-way configuration with quite zone ready improvements and support for all stakeholders

Challenges/Risks:
- Secure funding for construction
- Board approval of active transportation elements to the project
Brighton to Roxford Double Track Project

Estimated Cost to Complete Environmental/PE: $15M
Current Phase Completion Date: October 2019

Accomplishment: Completion of 30% Preliminary Engineering

Challenges/Risks:
- Possibility that East San Fernando Valley Transit Corridor Project could no longer accommodate the second track shown on B&R plans resulting in $1M increase in design costs and at least $50M in right-of-way and construction impacts
- If federal funds are applied to the project, a NEPA process would be required; adding significant time to the project schedule
- Secure funding for construction
Rosecrans/Marquardt Grade Separation Project

Working Project Estimate: $155.3 M         Phase Completion: September 2022

Accomplishments:
- California High-Speed Rail Authority (CHSRA) awarded $76.7 million towards the costs of the Rosecrans/Marquardt
- Metro’s Real Estate acquired 2 of 8 full take properties
- California Public Utilities Commission approved the Grade Separation application (GO-88-B)

Challenges/Risks:
- Project delay of 8 months by CHSRA for execution of the funding agreement (PMFA)
- Funding agreement executions in progress with Caltrans for Section 190 and BNSF Railway
Lone Hill to White Double Track

Estimated to Complete Environmental/Final Design: $10.0 M
Current Phase Completion Date: September 2020

Accomplishment:
- Completion of 30% Preliminary Engineering

Challenges/Risks:
- Return to the Board in Summer to advance the final design
- Secure construction funding
Raymer to Bernsen Double Track

Estimated Cost to Complete Environmental/Final Design: $6.0 M
Current Phase Completion Date: June 2020

Accomplishments:
- Environmental Clearance in October 2014
- Project received $60.8M in STIP funds and Prop $11.8M in Prop1B to-date for environmental, design and construction costs

Challenges/Risks:
- Project placed on hold due to community concerns of environmental studies
- Return to the Board in Summer 2018 to request approval for new environmental studies to directly address community concerns
FY19 Summary

- **New Projects with Planned Adoption of Life-of-Project Budget**
  - Crenshaw/LAX Concurrent Non-Project Activities Project
  - Willowbrook/Rosa Parks Station Improvements Project
  - Rail to Rail Active Transportation Corridor Connector Project
  - Division 20 Portal Widening Turnback Facility Project
  - Westside Purple Line Extension Section 3 Project

- **Existing Projects with Potential Adjustments to LOP Budget** (separate Board action):
  - Emergency Security Operations Center
  - Close-out of 7th Street/Metro Station Pedestrian Tunnel (BLOC)
  - Division 4 Permeable Pavement and Bioretention Pilot Project
  - I-5 North: SR 118 to SR 134
  - I-5 South: Orange County Line to I-605
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 budget 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, including the 28 by 2028 Initiative
# Appendix: Project Listing by Type

<table>
<thead>
<tr>
<th>TRANSIT CAPITAL PROJECTS WITH TOTAL PROJECT COSTS &gt; $5 M</th>
<th>TYPE</th>
<th>LOP BUDGET ($ MIL.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bus Rapid Transit Freeway Station Sound Enclosure</td>
<td>Bus Facilities Improvements</td>
<td>$5.8</td>
</tr>
<tr>
<td>2. Fuel Storage Tank Program (FY18 - FY21)</td>
<td>Bus Facilities Improvements</td>
<td>$13.2</td>
</tr>
<tr>
<td>3. Metro Silver Line Improvements &amp; Upgrades</td>
<td>Bus Facilities Improvements</td>
<td>$7.8</td>
</tr>
<tr>
<td>4. Division 3 Master Plan Phases II-IV</td>
<td>Bus Facilities Improvements</td>
<td>$13.2</td>
</tr>
<tr>
<td>5. Division 1 Improvements</td>
<td>Bus Facilities Improvements</td>
<td>$20.9</td>
</tr>
<tr>
<td>6. Bus Facility Maintenance Improvements &amp; Enhancements Phase II</td>
<td>Bus Facilities Improvements</td>
<td>$20.9</td>
</tr>
<tr>
<td>8. Patsaouras Plaza Bus Station Construction</td>
<td>Bus Facilities Improvements</td>
<td>$39.8</td>
</tr>
<tr>
<td></td>
<td><strong>Bus Facilities Improvements Total</strong></td>
<td><strong>$143</strong></td>
</tr>
<tr>
<td>9. Crenshaw/LAX Light Rail Transit: Construction</td>
<td>Major Construction</td>
<td>$2,058.0</td>
</tr>
<tr>
<td>10. Regional Connector: Construction</td>
<td>Major Construction</td>
<td>$1,755.8</td>
</tr>
<tr>
<td>11. Westside Purple Line Extension Section 1 Project</td>
<td>Major Construction</td>
<td>$2,778.9</td>
</tr>
<tr>
<td>12. Westside Purple Line Extension Section 2 Project</td>
<td>Major Construction</td>
<td>$2,440.9</td>
</tr>
<tr>
<td>13. Westside Purple Line Extension Section 3 Project</td>
<td>Major Construction</td>
<td>$363.6(a)</td>
</tr>
<tr>
<td>14. Gold Line Foothill Extension Phase 2B Project</td>
<td>Major Construction</td>
<td>$1,406.9</td>
</tr>
<tr>
<td></td>
<td><strong>Major Transit Construction Total</strong></td>
<td><strong>$10,804</strong></td>
</tr>
<tr>
<td>16. Division 20 Portal Widening Turnback Facility</td>
<td>Misc. Capital Projects</td>
<td>$186.7(a)</td>
</tr>
<tr>
<td>17. Division 22 Paint and Body Shop</td>
<td>Misc. Capital Projects</td>
<td>$11.0</td>
</tr>
<tr>
<td>18. Rail to Rail Corridor Active Transportation Connector Project</td>
<td>Misc. Capital Projects</td>
<td>$11.4(a)</td>
</tr>
<tr>
<td>20. Airport Metro Connector Project</td>
<td>Misc. Capital Projects</td>
<td>$151.1(a)</td>
</tr>
<tr>
<td></td>
<td><strong>Misc. Capital Projects Total</strong></td>
<td><strong>$392</strong></td>
</tr>
<tr>
<td>21. Southwestern Maintenance Yard</td>
<td>Rail Facilities Improvements</td>
<td>$157.0(b)</td>
</tr>
<tr>
<td>22. Systemwide Elevator Installations (Vertical Systems)</td>
<td>Rail Facilities Improvements</td>
<td>$8.0</td>
</tr>
<tr>
<td>23. Light Rail Transit Freeway Stations Sound Enclosures</td>
<td>Rail Facilities Improvements</td>
<td>$8.6</td>
</tr>
<tr>
<td>24. Metro Red Line Civic Center Station Escalator/Elevator Modernization</td>
<td>Rail Facilities Improvements</td>
<td>$12.0</td>
</tr>
<tr>
<td>25. Metro Red Line Escalator Replacement/Modernization</td>
<td>Rail Facilities Improvements</td>
<td>$20.8</td>
</tr>
<tr>
<td>26. Willowbrook/Rosa Parks Station Improvement</td>
<td>Rail Facilities Improvements</td>
<td>$36.0(a)</td>
</tr>
<tr>
<td></td>
<td><strong>Rail Facilities Improvements Total</strong></td>
<td><strong>$242</strong></td>
</tr>
<tr>
<td>27. Metro Gold Line I-210 Barrier Replacement Phase I</td>
<td>Security/Safety</td>
<td>$11.1(b)</td>
</tr>
<tr>
<td></td>
<td><strong>Security/Safety Total</strong></td>
<td><strong>$124</strong></td>
</tr>
<tr>
<td>29. Metro Blue Line Pedestrian Safety Enhancement at Grade Crossings</td>
<td>Wayside Systems</td>
<td>$31.4</td>
</tr>
<tr>
<td>30. Metro Blue Line Signal System Rehabilitation</td>
<td>Wayside Systems</td>
<td>$118.9</td>
</tr>
<tr>
<td></td>
<td><strong>Wayside Systems Total</strong></td>
<td><strong>$150</strong></td>
</tr>
<tr>
<td>31. TRANSIT CAPITAL TOTAL</td>
<td></td>
<td><strong>$11,855</strong></td>
</tr>
</tbody>
</table>

(a) Based on projected budget through FY19, prior to Board adoption of life-of-project budget.
(b) Design LOP budget approved for risk assessment study, environmental clearance and final design.
## Appendix: Project Listing by Type

### FY2019 APE

<table>
<thead>
<tr>
<th>HIGHWAY</th>
<th>TYPE</th>
<th>CURRENT ESTIMATE ($ MIL.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 South – Alondra</td>
<td>Measure R Highway Capital Project</td>
<td>$114.1</td>
</tr>
<tr>
<td>2-5 South – Valley View Interchange</td>
<td>Measure R Highway Capital Project</td>
<td>$631.1</td>
</tr>
<tr>
<td>3-5 South – Shoemaker, Rosecrans, Bloomfield</td>
<td>Measure R Highway Capital Project</td>
<td>$188.2</td>
</tr>
<tr>
<td>4-5 South – San Antonio, Imperial Hwy and Orr Day</td>
<td>Measure R Highway Capital Project</td>
<td>$323.3</td>
</tr>
<tr>
<td>5-5 South – Florence</td>
<td>Measure R Highway Capital Project</td>
<td>$211.7</td>
</tr>
<tr>
<td>6-5 South – Carmonita Interchange</td>
<td>Measure R Highway Capital Project</td>
<td>$419.9</td>
</tr>
<tr>
<td>7-5 North – HOV from SR 118 to SR 170</td>
<td>Measure R Highway Capital Project</td>
<td>$219.5</td>
</tr>
<tr>
<td>8-5 North – HOV from SR 170 to North of Buena Vista</td>
<td>Measure R Highway Capital Project</td>
<td>$94.7</td>
</tr>
<tr>
<td>9-5 North – North of Buena Vista to South of Magnolia Blvd</td>
<td>Measure R Highway Capital Project</td>
<td>$402.4</td>
</tr>
<tr>
<td>10-5 North – Magnolia Blvd to SR 134</td>
<td>Measure R Highway Capital Project</td>
<td>$137.4</td>
</tr>
<tr>
<td>11-5 North HOV Project SR 14 to Parker Road</td>
<td>Measure R Highway Capital Project</td>
<td>$42.4</td>
</tr>
<tr>
<td>12-605 Corridor Hot Spots – I-405/I-5 Interchange Improvement</td>
<td>Measure R Highway Capital Project</td>
<td>$30.3</td>
</tr>
<tr>
<td>13-605 Corridor Hot Spots – I-605/SR 60 Interchange Improvement</td>
<td>Measure R Highway Capital Project</td>
<td>$41.6</td>
</tr>
<tr>
<td>14-605 Corridor Hot Spots – SR-91 Westbound Widening at I-605 Interchange</td>
<td>Measure R Highway Capital Project</td>
<td>$9.3</td>
</tr>
<tr>
<td>15-605 – Beverly Interchange Improvement Project</td>
<td>Measure R Highway Capital Project</td>
<td>$3.5</td>
</tr>
<tr>
<td>16-605 from SR-91 to South St. Improvements Project</td>
<td>Measure R Highway Capital Project</td>
<td>$4.5</td>
</tr>
<tr>
<td>17-405 Crenshaw Blvd On and Off Ramp Improvements</td>
<td>Measure R Highway Capital Project</td>
<td>$20.0</td>
</tr>
<tr>
<td>18-405 and I-110 Aux Lane from SR 91 to Torrance Blvd</td>
<td>Measure R Highway Capital Project</td>
<td>$44.0</td>
</tr>
<tr>
<td>19-710 (South) Corridor Improvement Projects</td>
<td>Measure R Highway Capital Project</td>
<td>$91.0</td>
</tr>
<tr>
<td>20-710 (South) Early Action Projects - Soundwall Projects (3 locations)</td>
<td>Measure R Highway Capital Project</td>
<td>$12.7</td>
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<tr>
<td>21-710 (North) Early Action Projects</td>
<td>Measure R Highway Capital Project</td>
<td>$47.0</td>
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<tr>
<td>22 Soundwall Package 10</td>
<td>Measure R Highway Capital Project</td>
<td>$59.4</td>
</tr>
<tr>
<td>23 Soundwall Package 11</td>
<td>Measure R Highway Capital Project</td>
<td>$89.2</td>
</tr>
<tr>
<td>24-10 HOV from Puente Avenue to Citrus Avenue (Seg. 2)</td>
<td>Measure R Highway Capital Project</td>
<td>$3,237.2</td>
</tr>
<tr>
<td>25-10 HOV from Citrus Avenue to SR 57 (Seg. 3)</td>
<td>Measure R Highway Capital Project</td>
<td>$195.6</td>
</tr>
<tr>
<td>26 SR 57 and SR 60 Mixed Flow Interchange</td>
<td>Measure R Highway Capital Project</td>
<td>$268.7</td>
</tr>
<tr>
<td>27 SR 71: Interstate 10 to Mission Blvd</td>
<td>Measure R Highway Capital Project</td>
<td>$54.0</td>
</tr>
<tr>
<td>28 SR 71: Mission Blvd to Rio Rancho Road</td>
<td>Measure R Highway Capital Project</td>
<td>$16.0</td>
</tr>
</tbody>
</table>

### REGIONAL RAIL

<table>
<thead>
<tr>
<th>REGIONAL RAIL</th>
<th>TYPE</th>
<th>CURRENT ESTIMATE ($ MIL.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 LINK Union Station Project</td>
<td>Regional Rail</td>
<td>$71.6</td>
</tr>
<tr>
<td>2 Burbank Airport – North Station Project</td>
<td>Regional Rail</td>
<td>$15.0</td>
</tr>
<tr>
<td>3 Doran Street and Broadway/Brazil Safety and Access Project</td>
<td>Regional Rail</td>
<td>$11.6</td>
</tr>
<tr>
<td>4 Brighton to Roxford Double Track Project</td>
<td>Regional Rail</td>
<td>$15.0</td>
</tr>
<tr>
<td>5 Rosecrans/Marquardt Grade Separation Project</td>
<td>Regional Rail</td>
<td>$155.3</td>
</tr>
<tr>
<td>6 Lone Hill to White Double Track Project</td>
<td>Regional Rail</td>
<td>$10.0</td>
</tr>
<tr>
<td>7 Raymer to Bernsen Double Track Project</td>
<td>Regional Rail</td>
<td>$6.0</td>
</tr>
</tbody>
</table>

### HIGHWAY PROGRAM TOTAL

$3,811.5

### REGIONAL RAIL PROGRAM TOTAL

$284.3

**FY2019 APE**