

# **Metro**

*Los Angeles County Metropolitan Transportation Authority  
One Gateway Plaza  
3rd Floor Board Room*



## **Agenda - Final**

**Thursday, July 18, 2019**

**10:15 AM**

**One Gateway Plaza, Los Angeles, CA 90012,  
3rd Floor, Metro Board Room**

### **Construction Committee**

*Janice Hahn, Chair*

*Robert Garcia, Vice Chair*

*Kathryn Barger*

*Jacquelyn Dupont-Walker*

*Sheila Kuehl*

*John Bulinski, non-voting member*

*Phillip A. Washington, Chief Executive Officer*

**METROPOLITAN TRANSPORTATION AUTHORITY BOARD RULES**  
**(ALSO APPLIES TO BOARD COMMITTEES)**

**PUBLIC INPUT**

A member of the public may address the Board on agenda items, before or during the Board or Committee's consideration of the item for one (1) minute per item, or at the discretion of the Chair. A request to address the Board must be submitted electronically using the tablets available in the Board Room lobby. Individuals requesting to speak will be allowed to speak for a total of three (3) minutes per meeting on agenda items in one minute increments per item. For individuals requiring translation service, time allowed will be doubled. The Board shall reserve the right to limit redundant or repetitive comment.

The public may also address the Board on non agenda items within the subject matter jurisdiction of the Board during the public comment period, which will be held at the beginning and/or end of each meeting. Each person will be allowed to speak for one (1) minute during this Public Comment period or at the discretion of the Chair. Speakers will be called according to the order in which their requests are submitted. Elected officials, not their staff or deputies, may be called out of order and prior to the Board's consideration of the relevant item.

Notwithstanding the foregoing, and in accordance with the Brown Act, this agenda does not provide an opportunity for members of the public to address the Board on any Consent Calendar agenda item that has already been considered by a Committee, composed exclusively of members of the Board, at a public meeting wherein all interested members of the public were afforded the opportunity to address the Committee on the item, before or during the Committee's consideration of the item, and which has not been substantially changed since the Committee heard the item.

In accordance with State Law (Brown Act), all matters to be acted on by the MTA Board must be posted at least 72 hours prior to the Board meeting. In case of emergency, or when a subject matter arises subsequent to the posting of the agenda, upon making certain findings, the Board may act on an item that is not on the posted agenda.

**CONDUCT IN THE BOARD ROOM** - The following rules pertain to conduct at Metropolitan Transportation Authority meetings:

**REMOVAL FROM THE BOARD ROOM** The Chair shall order removed from the Board Room any person who commits the following acts with respect to any meeting of the MTA Board:

- a. Disorderly behavior toward the Board or any member of the staff thereof, tending to interrupt the due and orderly course of said meeting.
- b. A breach of the peace, boisterous conduct or violent disturbance, tending to interrupt the due and orderly course of said meeting.
- c. Disobedience of any lawful order of the Chair, which shall include an order to be seated or to refrain from addressing the Board; and
- d. Any other unlawful interference with the due and orderly course of said meeting.

**INFORMATION RELATING TO AGENDAS AND ACTIONS OF THE BOARD**

Agendas for the Regular MTA Board meetings are prepared by the Board Secretary and are available prior to the meeting in the MTA Records Management Department and on the Internet. Every meeting of the MTA Board of Directors is recorded and is available at [www.metro.net](http://www.metro.net) or on CD's and as MP3's for a nominal charge.

## DISCLOSURE OF CONTRIBUTIONS

The State Political Reform Act (Government Code Section 84308) requires that a party to a proceeding before an agency involving a license, permit, or other entitlement for use, including all contracts (other than competitively bid, labor, or personal employment contracts), shall disclose on the record of the proceeding any contributions in an amount of more than \$250 made within the preceding 12 months by the party, or his or her agent, to any officer of the agency, additionally PUC Code Sec. 130051.20 requires that no member accept a contribution of over ten dollars (\$10) in value or amount from a construction company, engineering firm, consultant, legal firm, or any company, vendor, or business entity that has contracted with the authority in the preceding four years. Persons required to make this disclosure shall do so by filling out a "Disclosure of Contribution" form which is available at the LACMTA Board and Committee Meetings. Failure to comply with this requirement may result in the assessment of civil or criminal penalties.

## ADA REQUIREMENTS

Upon request, sign language interpretation, materials in alternative formats and other accommodations are available to the public for MTA-sponsored meetings and events. All requests for reasonable accommodations must be made at least three working days (72 hours) in advance of the scheduled meeting date. Please telephone (213) 922-4600 between 8 a.m. and 5 p.m., Monday through Friday. Our TDD line is (800) 252-9040.

## LIMITED ENGLISH PROFICIENCY

A Spanish language interpreter is available at all Committee and Board Meetings. All other languages must be requested 72 hours in advance of the meeting by calling (213) 922-4600 or (323) 466-3876.



**323.466.3876 x2**

*Español*

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General Information/Rules of the Board - (213) 922-4600

Internet Access to Agendas - [www.metro.net](http://www.metro.net)

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**NOTE: ACTION MAY BE TAKEN ON ANY ITEM IDENTIFIED ON THE AGENDA**

**CALL TO ORDER****ROLL CALL**

28. **SUBJECT: PROGRAM MANAGEMENT MAJOR PROJECT STATUS REPORT** [2019-0493](#)

**RECOMMENDATION**

RECEIVE oral report on the Major Project Status by the Chief Program Management Officer.

**Attachments:** [Attachment A - Program Management Major Project Status Report](#)

29. **SUBJECT: PROGRAM MANAGEMENT QUARTERLY CHANGE REPORT** [2019-0494](#)

**RECOMMENDATION**

RECEIVE AND FILE status report on Program Management Quarterly Change Report.

**Attachments:** [Attachment A to July 2019 Construction Committee](#)

30. **SUBJECT: OFFICE OF THE INSPECTOR GENERAL CHANGE ORDER/MODIFICATION CONSTRUCTION SPOT CHECKS** [2019-0495](#)

**RECOMMENDATION**

RECEIVE AND FILE Office of the Inspector General Change Order/Modification Construction Spot Check Report.

**Attachments:** [Attachment A - JULY Spot Check.pdf](#)  
[Attachment B - Recommendation.Response Jan to Jul 2019 Presentation](#)



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**31. SUBJECT: TWENTY-EIGHT BY '28 FINANCIAL FORECAST AND  
CONSTRUCTABILITY ANALYSIS**

[2019-0434](#)**RECOMMENDATION**

RECEIVE AND FILE financial forecast and constructability analysis to deliver the Twenty-Eight by '28 Initiative.

**Attachments:**      [Attachment A - Pillar Project Profiles](#)  
[Attachment B - Pillar Projects vs. SRFF 10-Year](#)  
[Attachment C - Pillar Projects vs. SRFF 20-Year](#)  
[Attachment D - Constructability Analysis-Project Information](#)  
[Presentation](#)

(ALSO ON EXECUTIVE MANAGEMENT COMMITTEE)

**32. SUBJECT: EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR**

[2019-0202](#)**RECOMMENDATION**

AUTHORIZE:

- A. the Chief Executive Officer to negotiate and execute a cost-plus fixed fee Contract No. AE58083E0129 with Gannett Fleming to perform professional services including design advancement for the design build delivery process, support during the solicitation process, and design support during construction for the East San Fernando Valley Transit Corridor Project in an amount not-to-exceed \$61,974,852, subject to resolution of any protests; and
- B. Contract Modification Authority in the amount of \$12,394,970 (20% of the not-to-exceed contract value) and authorize the CEO to execute individual Contract Modifications within the Board approved Contract Modification Authority.

**Attachments:**      [Attachment A - Procurement Summary](#)  
[Attachment B - DEOD Summary](#)  
[Attachment C - Contract Schedule](#)

**33. SUBJECT: I-5 SOUTH CAPACITY ENHANCEMENTS FROM ORANGE  
COUNTY LINE TO I-605**

[2019-0376](#)**RECOMMENDATION**

AUTHORIZE Contract Modification No. 106 (CCO 106) by the California Department of Transportation (Caltrans) for the construction contract of Segment 2 (Valley View) of the I-5 South Capacity Enhancements Project from I-605 to Orange County Line (Project) under Funding Agreement No.

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MOU.P0004292, Amendment No. 3, in the amount of up to \$983,655 within the overall corridor Life of Project (LOP) budget.

**34. SUBJECT: AIRPORT METRO CONNECTOR**

[2019-0480](#)

**RECOMMENDATION**

AUTHORIZE:

- A. The Chief Executive Officer to execute a 5-year cost-plus fixed fee Contract No. PS58330MC075 with KDG+DE Construction Support Services to provide Construction Support Services for the Airport Metro Connector (AMC) 96th Street Transit Station Project, in an amount not-to-exceed \$25,943,154.86 and exercise 2 one-year options, when deemed appropriate; and
- B. Contract Modification Authority in the amount of \$5,188,630.97 or 20% of the not-to-exceed contract award value and authorize the CEO to execute individual Contract Modifications within the Board approved Contract Modification Authority.

**Attachments:**      [Attachment A - Procurement Summary](#)  
                                 [Attachment B - DEOD Summary](#)

**35. SUBJECT: SUPPLEMENTAL ENGINEERING SERVICES (SES)  
CONSULTANT SERVICE CONTRACT**

[2019-0502](#)

**RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to NEGOTIATE and EXECUTE:

- A. A three-year cost plus fixed fee type contract for AE59600 with HDR Engineering, Inc. for Supplemental Engineering Services for Engineering Design of Transit Rail Projects on a task order basis, plus two one-year options. The amount for the three-year base contract is \$50,000,000 and the amount for the two one-year options is \$20,000,000 for a total contract value not to exceed \$70,000,000; subject to resolution of protest(s), if any; and
- B. Individual Task Orders and modifications within the Board approved contract amount.

**Attachments:**      [Attachment A - Procurement Summary](#)  
                                 [Attachment B - DEOD Summary](#)  
                                 [File Summary](#)  
                                 [File Summary](#)

**36. SUBJECT: METRO GOLD LINE EXTENSION TO CLAREMONT**[2019-0528](#)**RECOMMENDATION**

DIRECT the Chief Executive Officer to:

- A. Finalize negotiations with the Gold Line Foothill Extension Construction Authority (Construction Authority) for Metro to commit \$126 million in order to ensure the extension of the Foothill Alignment to Pomona station; and
- B. Apply the San Gabriel Valley Subregional Equity funds to offset the Gold Line to Pomona shortfall.

**15. SUBJECT: SEPULVEDA TRANSIT CORRIDOR PROJECT**[2019-0490](#)**RECOMMENDATION**

CONSIDER:

- A. FINDING that use of a Pre-Development Agreement (PDA) approach pursuant to Public Utilities Code Section 130242 will achieve certain private sector efficiencies in the integration of the planning, design, and construction of the Sepulveda Transit Corridor Project (Project); and

(REQUIRES TWO-THIRDS VOTE OF THE BOARD)

- B. APPROVING the solicitation of PDA contract(s) with up to two responsible proposer(s), pursuant to Public Utilities Code Section 130242(e), with the proposer(s) chosen by utilizing a competitive process that employs objective selection criteria (in addition to price).

**(ALSO ON PLANNING AND PROGRAMMING COMMITTEE)****SUBJECT: GENERAL PUBLIC COMMENT**[2019-0541](#)

RECEIVE General Public Comment

Consideration of items not on the posted agenda, including: items to be presented and (if requested) referred to staff; items to be placed on the agenda for action at a future meeting of the Committee or Board; and/or items requiring immediate action because of an emergency situation or where the need to take immediate action came to the attention of the Committee subsequent to the posting of the agenda.

**COMMENTS FROM THE PUBLIC ON ITEMS OF PUBLIC INTEREST WITHIN COMMITTEE'S SUBJECT MATTER JURISDICTION****Adjournment**



## Board Report

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**File #:** 2019-0493, **File Type:** Oral Report / Presentation

**Agenda Number:** 28.

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### CONSTRUCTION COMMITTEE JULY 18, 2019

**SUBJECT: PROGRAM MANAGEMENT MAJOR PROJECT STATUS REPORT**

**ACTION: ORAL REPORT**

#### **RECOMMENDATION**

RECEIVE oral report on the Major Project Status by the Chief Program Management Officer.

#### **DISCUSSION**

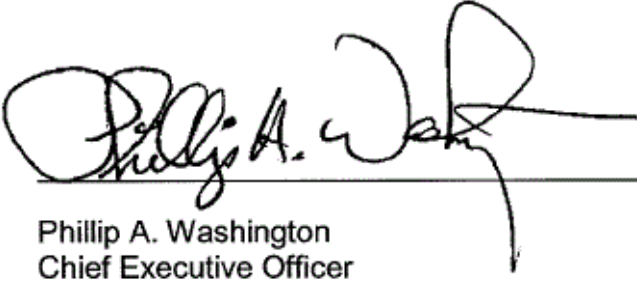
Update report covering the month of July 2019 by the Chief Program Management Officer.

#### **ATTACHMENTS**

Attachment A - Program Management Major Project Status Report

Prepared by:

- **Crenshaw/LAX** - Sameh Ghaly, Sr EO Project Mgmt., (213) 418-3369
- **Regional Connector** - Gary Baker, EO Project Mgmt., (213) 893-7191
- **Westside Purple Line Ext 1** - James Cohen, EO Project Mgmt., (213) 922-7911
- **Westside Purple Line Ext 2** - Michael McKenna, EO Project Mgmt., (213) 312-3132
- **Westside Purple Line Ext 3** - Kimberly Ong, EO Project Mgmt., (323) 903-4112
- **Patsaouras Plaza Busway Station** - Timothy Lindholm, EO Project Engr., (213) 922-7297
- **Willowbrook/Rosa Park Station** - Timothy Lindholm, EO Project Engr., (213) 922-7297
- **The New Blue** - Timothy Lindholm, EO Project Engr., (213) 922-7297
- **I-210 Barrier Replacement** - Androush Danielians, EO Project Engr., (213) 922-7598
- **I-5 North** - Abdollah Ansari, Sr EO Construction & Engr., (213) 922-4781
- **I-5 South** - Abdollah Ansari, Sr EO Construction & Engr., (213) 922-4781
- **Presentation** - Yohana Jonathan, Princ. Prog. Mgmt. Analyst, (213) 418-3031



Phillip A. Washington  
Chief Executive Officer























# **Program Management Major Project Status Report**

Presented By

**Richard Clarke**

Chief Program Management Officer

# PROJECT BUDGET & SCHEDULE STATUS SUMMARY CHART

Project	Cost Performance	Schedule Performance	Comments
Crenshaw/LAX			Project is 92.6% complete. The forecast revenue service date is Summer 2020.
Regional Connector			Project is 57% complete and proceeding on schedule and within budget.
Westside Purple Line Extension-Section 1			Project is 49% complete and proceeding on schedule and within budget.
Westside Purple Line Extension-Section 2			Project is 19% complete and proceeding on schedule and within budget.
Westside Purple Line Extension-Section 3			C1152 Stations, Trackwork, Systems, and Testing Contract - Metro awarded contract on May 28, 2019.
Patsaouras Plaza			Project is 65% complete. Archaeological and Native American monitoring continues. Foundation work for the pedestrian overcrossing, busway canopy, elevator and walkway is ongoing.
Willowbrook/Rosa Parks Station			Customer Service Building is 50% complete with exterior paneling work ongoing. Mobility hub has completed main framing with MEP now progressing. Blue Line Station and Mezzanine work is completing pre-cast work and preparing for concrete work. Package B 100% bid package is pending Metro review.
Metro Blue Line Projects			Metro Blue Line South Segment opened on schedule, June 1, 2019. Construction started on the North Segment on June 2, 2019. Construction in the 7 <sup>th</sup> /Metro Tunnel started on June 22, 2019.
I-210 Barrier Replacement			As part of Final Design, Metro Engineering is working closely Metro Operations and Systems to optimize single tracking operations and minimize anticipated headway during construction. Pursuing of final approval of staging configuration. Public Outreach is developing a Draft Communication Plan for the cities.
I-5 North: SR 118 to SR 134			Segment 3 (Empire) is 74% complete. Segment 4 (Magnolia to SR-134) is 91% complete.
I-5 South: Orange County Line to I-605			Segment 2 (Valley View) is 43% complete. Segment 3 (Rosecrans) is open to traffic. Segment 4 (Imperial) is 96% complete. Segment 5 (Florence) is 80% complete.

July 2019



On target



Possible problem



Major issue



Metro 2

Construction Committee

Los Angeles County Metropolitan Transportation Authority

# CRENSHAW/LAX TRANSIT PROJECT

## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST	\$2,058M	\$2,058M

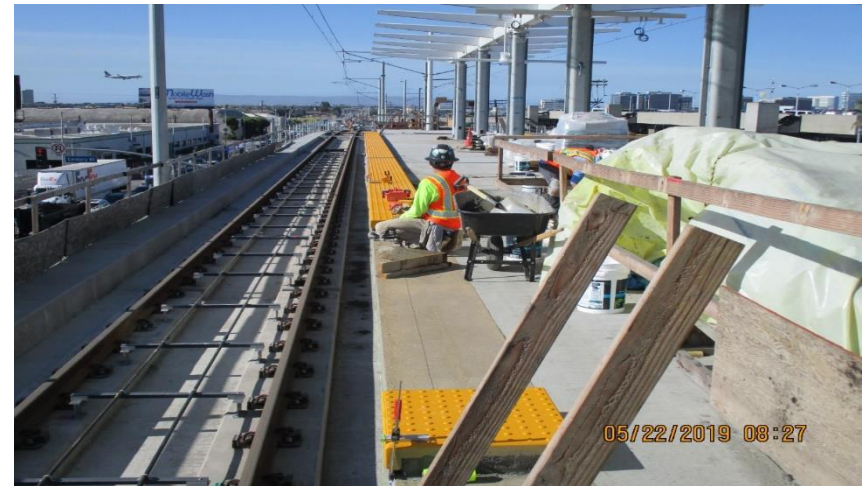
## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
REVENUE OPERATION	Spring/Summer 2020	Spring/Summer 2020

- Overall Project Progress is 92.6% complete; addressing contractor construction schedule.
- Contractor continues critical systems installations/testing along the alignment.
- Working with 3<sup>rd</sup> parties to complete power drops for traction power substations.
- Contractor addressing open sidewalk and street punch list items along alignment.
- Contractor is developing a detailed Green Line Cutover Plan and coordinating with Metro Operations to implement this summer. This effort will include ten-weekend closures of the Green Line.



Installation of emergency lighting at southbound tunnel



Tactile paver installation at Aviation/Century Station

July 2019



On target



Possible problem



Major issue



Metro 3

Construction Committee

Los Angeles County Metropolitan Transportation Authority



# REGIONAL CONNECTOR TRANSIT PROJECT

## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST	\$1,810M	\$1,810M

## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
REVENUE OPERATION	Spring/Summer 2022	Spring/Summer 2022

- Overall Project Progress is 57% complete.
- Tunnels:** Continued work on waterproofing installation within the Sequential Excavation Method (SEM) Cavern in preparation for final liner concrete.
- Little Tokyo/Arts District Station, WYE and 1st Street:** Structural concrete placement for station walls continues. Excavation of Wye is complete.
- Historic Broadway Station:** Structural concrete continues in station entrance and throughout the concourse level.
- Grand Av Arts/Bunker Hill Station:** Structural concrete walls continue to be erected at multiple levels throughout the station.
- Flower Street:** Utility support work is complete. The final phase of excavation is underway.



Invert placement in SEM Cavern



Setting walers at mid-level under Flower St

July 2019



On target



Possible problem



Major issue

Construction Committee

Los Angeles County Metropolitan Transportation Authority



Metro 4

# WESTSIDE PURPLE LINE EXTENSION – SECTION 1

## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST*	\$3,154M	\$3,154M

\* Includes Board approved LOP budget plus finance costs.

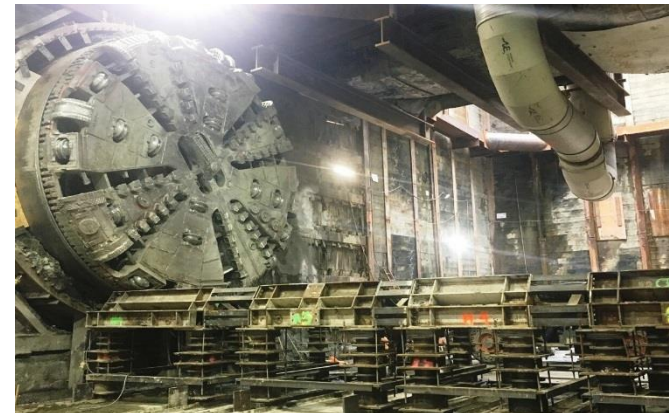
## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
REVENUE	Fall	Fall
OPERATIONS	2024 (FFGA)	2023

- Overall Project Progress is 49% complete.
- Wilshire/Western Retrieval Shaft:** Break through (arrival) of TBM #1 (Soyeon) occurred on June 11, 2019. Arrival of TBM #2 (Elsie) is scheduled for early July 2019.
- Wilshire/La Brea Station:** Concourse concrete placement (GL 5- GL 15) completed on May 31, 2019. Concourse slab reshoring and removal of Level B and C struts is on going. Tunnel segments continue to be received, inspected and stockpiled.
- Wilshire/Fairfax Station:** On June 11, 2019, the first invert slab placement was completed. Invert rebar placement is on going.
- Wilshire/La Cienega Station:** Level D strut installation has commenced. Daily maintenance of dewatering wells continues. Bottom of excavation is anticipated to be reached in August 2019.
- Reach 1 TBM Progress (W/LB to W/W):** TBM #1 – 9,598 ft. or 100%; TBM #2 – 8,915 ft. or 93% as of June 13, 2019. The start of Reach 2 mining is scheduled for October 2019.





TBM #1 Break Through at Wilshire/Western



Preparations for Retrieval of TBM #1 at Wilshire/Western

July 2019

 On target

 Possible problem

 Major issue

Construction Committee

Los Angeles County Metropolitan Transportation Authority

# WESTSIDE PURPLE LINE EXTENSION – SECTION 2



## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST*	\$2,530M	\$2,530M

\* Includes Board approved LOP budget plus finance costs.



## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
REVENUE OPERATION	Winter 2026 (FFGA)	Summer 2025

- Overall Project progress is 19% complete.
- Final design progress is 93% complete.
- **Century City Constellation**
  - Installation of bracing for the TBM Launch Box commenced this period and are ongoing.
  - TBM Launch Box excavation and supporting underground utilities continues.
  - Cable pulling and splicing for both utilities (LADWP & AT&T) is anticipated to complete prior to the start of piling activities west of the TBM Launch Box.
  - Santa Monica bus layover construction is ongoing with an anticipated completion in August 2019.
- **Wilshire/Rodeo**
  - Potholing for underground utilities by the contractor is ongoing.
  - Wet utility relocations have started this period and are ongoing.
  - Pre-construction condition surveys are ongoing.
  - Site grading continues at both staging yards.



TBM Launch Box Overview in Century City



Underground Activities in TBM Launch Box in Century City



On target



Possible problem



Major issue

July 2019

Construction Committee

Los Angeles County Metropolitan Transportation Authority



Metro 6



# WESTSIDE PURPLE LINE EXTENSION – SECTION 3



## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST*	\$3,611M	\$3,611M

\* Includes Board approved LOP budget plus finance costs.



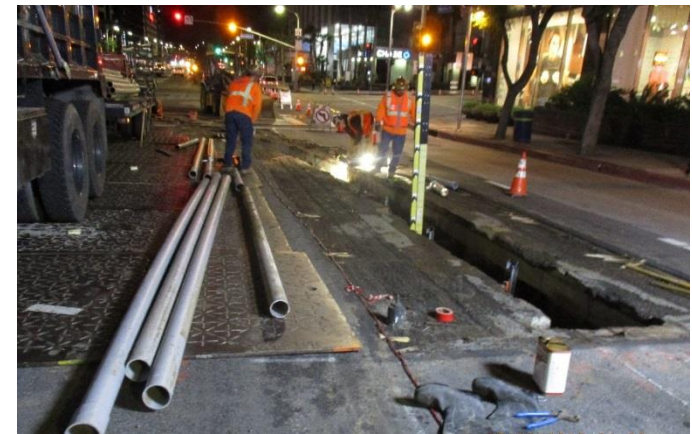
## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
REVENUE	TBD	2027
OPERATION		

- C1151 Tunnel Contract
  - Progressing 60% and 85% design submittals.
  - Ongoing coordination with Southern California Edison (SCE) for approval of 100% design for TBM power duct bank installation.
  - Executed the Memorandum of Understanding and finalizing the Access and Easement Agreement with Veterans Affairs (VA) for construction staging area.
  - Geotechnical investigations are ongoing.
- C1152 Stations, Trackwork and Systems Contract
  - Contract was awarded on May 28, 2019.
- C1153 AUR Contract (Westwood/UCLA Station)
  - Achieved substantial completion in July 2019.
- Other 3<sup>rd</sup> Parties Utility Relocation Work
  - Joint trench for Verizon and Frontier telecom is ongoing.
  - LADWP cable pulling and splicing is ongoing.



Installing Riser for Water Pressure Test



Joint Trench Conduit Installation

July 2019



On target



Possible problem



Major issue



Metro 7

Construction Committee

Los Angeles County Metropolitan Transportation Authority

# PATSAOURAS BUS PLAZA STATION

## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST	\$50.9M	\$50.9M

## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
SUBSTANTIAL COMPLETION	Spring 2020	Spring 2020

- Overall project progress remains at approximately 65% complete.
- Archaeological and Native American monitoring continues.
  - Human remains continue to be discovered requiring focused monitoring impacting construction.
- Pedestrian overcrossing foundations started
  - Micropile excavation is proceeding at 6" intervals with the spoils being sifted/evaluated by monitors.
- Busway canopy foundations started.
- Elevator and walkway foundation work started.
- Retaining wall footing rework started.



# WILLOWBROOK/ROSA PARKS STATION

## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST	\$109.3M	\$109.3M

## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
SUBSTANTIAL COMPLETION	Summer 2020	Summer 2020

- Package A: Customer Service building exterior paneling ongoing with interior sheathing beginning. Mobility Hub Building main framing complete with Mechanical electrical and plumbing (MEP) work initiated.
- Package C: Precast installation near completion. Preparing for main concrete and canopy work.
- Package B: Final coordination of 100% documents for Metro review.



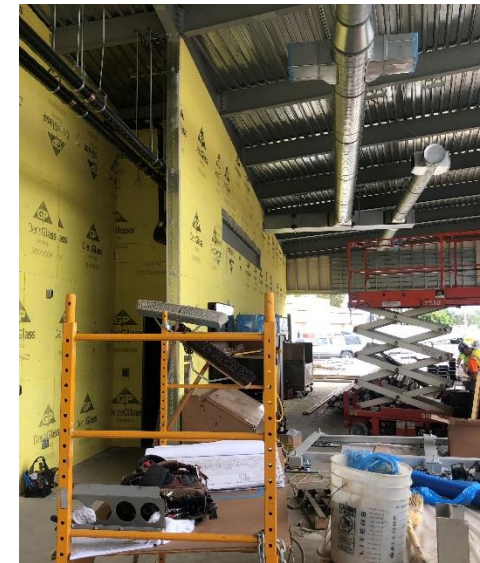
Formwork @ Blue Line Platform/Mezzanine

Escalator and platform work @ Mezzanine



Precast @ Blue Line Mezzanine Extension

Interior and MEP Work @ Mobility Hub



July 2019



On target



Possible problem



Major issue

Construction Committee

Los Angeles County Metropolitan Transportation Authority



Metro 9



# THE NEW BLUE CLOSURE

## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST	\$221.3M	\$221.3M

## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
SUBSTANTIAL COMPLETION	Fall 2019	Fall 2019

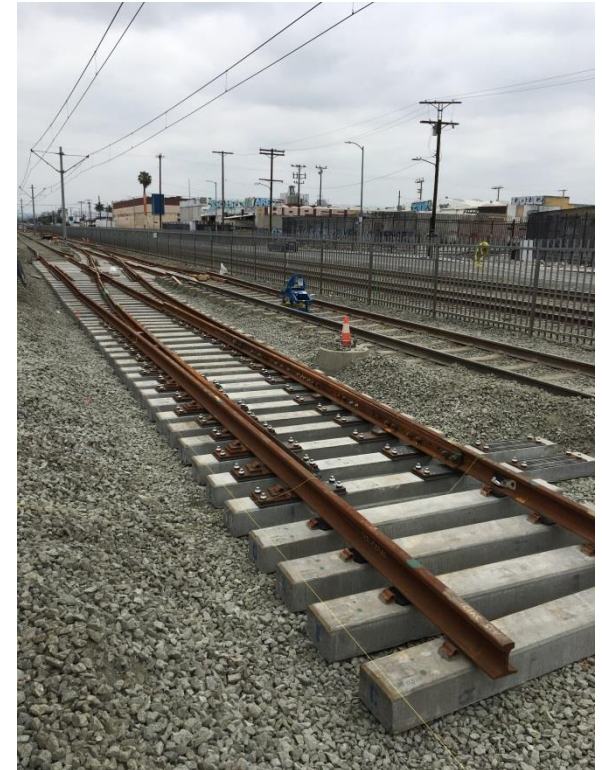
- Successfully opened South segment on June 1st
- North segment work started on OCS, Track and Train Control.
- Expo service suspension to Pico and 7<sup>th</sup> Metro starting June 22, 2019.
- 7<sup>th</sup> Metro Tunnel work planned for 2 months.



Train Control work in existing bungalow





New Compton Interlocking Local Control Panel (LCP)



Constructing new Slauson Crossover

July 2019

 On target

 Possible problem

 Major issue

Construction Committee

Los Angeles County Metropolitan Transportation Authority



# I-210 BARRIER REPLACEMENT PROJECT

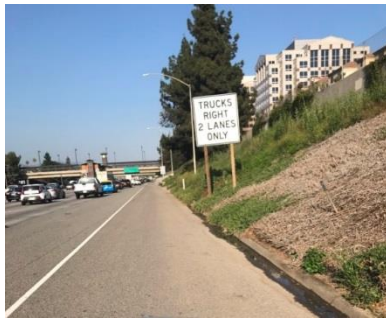
## BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST	\$22.54M	\$22.54M
	Design	Design

## SCHEDULE

	<u>Current</u>	<u>Forecast</u>
Complete Design (Proj 1)	Summer 2019	Summer 2019
Complete Design (Proj 2)	Spring 2020	Spring 2020

- Working with Caltrans to obtain approval of the Design Standard Decision Document for Project 1.
- Draft Communication Plan is being developed.
- Project 1: Segment from Michillinda to Iconic Bridge – As part of the final design, simulations are being performed to determine the headways during construction.
- Project 2: Segment from west end of the project to Michillinda – Construction sequence of new barrier is in development. Traffic microsimulation analysis completed, mitigation measures in development.



Newly Installed Caltrans Freeway Sign



Incident in 2014



Newly Installed Speed Limit Sign

July 2019



On target



Possible problem



Major issue

Construction Committee

Los Angeles County Metropolitan Transportation Authority



Metro 11



# I-5 Construction Projects (By Caltrans)

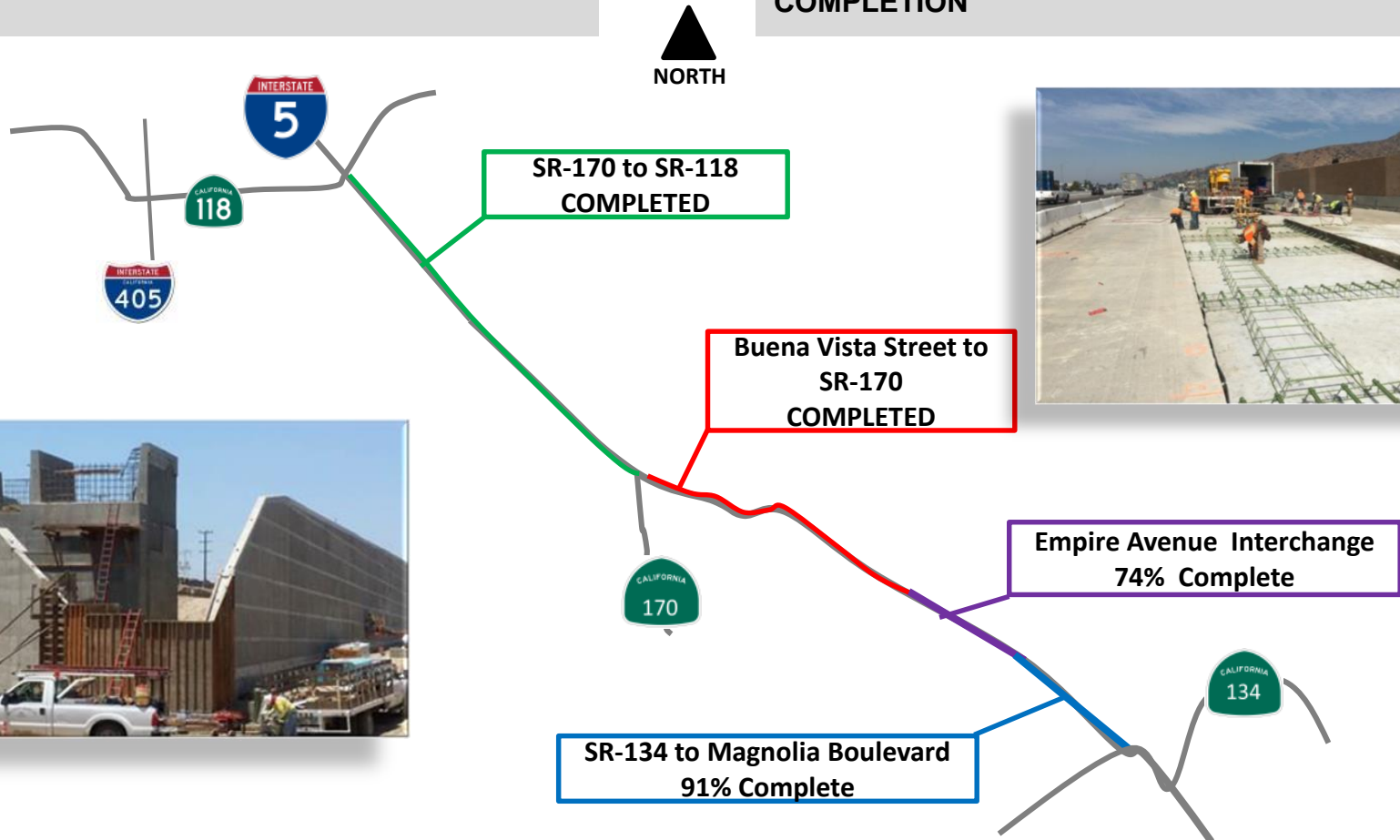


# I-5 NORTH: SR 118 TO SR 134



BUDGET	Current	Forecast
TOTAL COST	\$880.9M	TBD

SCHEDULE	Current	Forecast
ANTICIPATED PROJECT COMPLETION	Spring 2022	Summer 2022



July 2019



On target



Possible problem



Major issue



Metro 13

Construction Committee

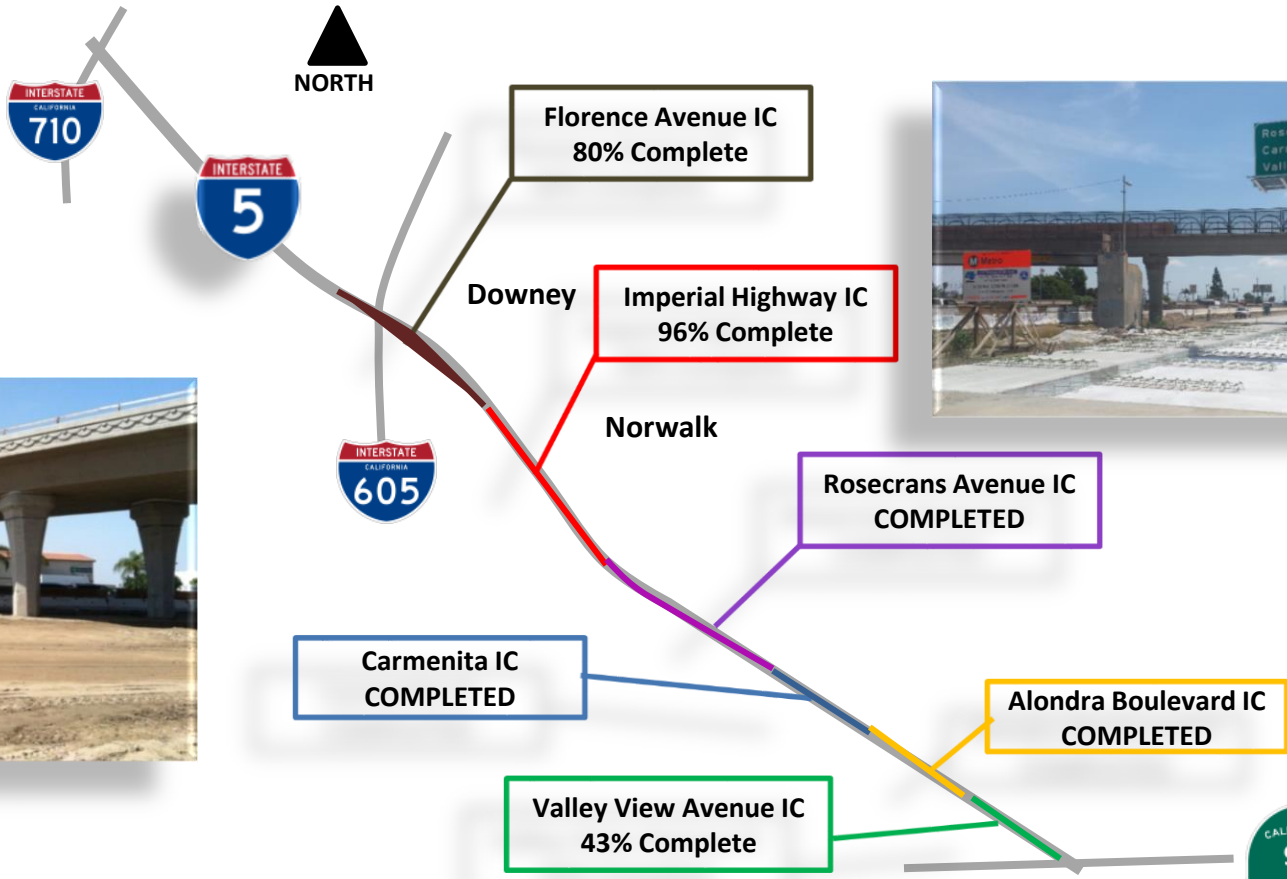
Los Angeles County Metropolitan Transportation Authority

# I-5 SOUTH: ORANGE COUNTY LINE TO I-605



OK BUDGET		
	Current	Forecast
TOTAL COST	\$1.888B	TBD

◇ SCHEDULE		
	Current	Forecast
ANTICIPATED PROJECT COMPLETION	Fall 2022	Winter 2022



On target



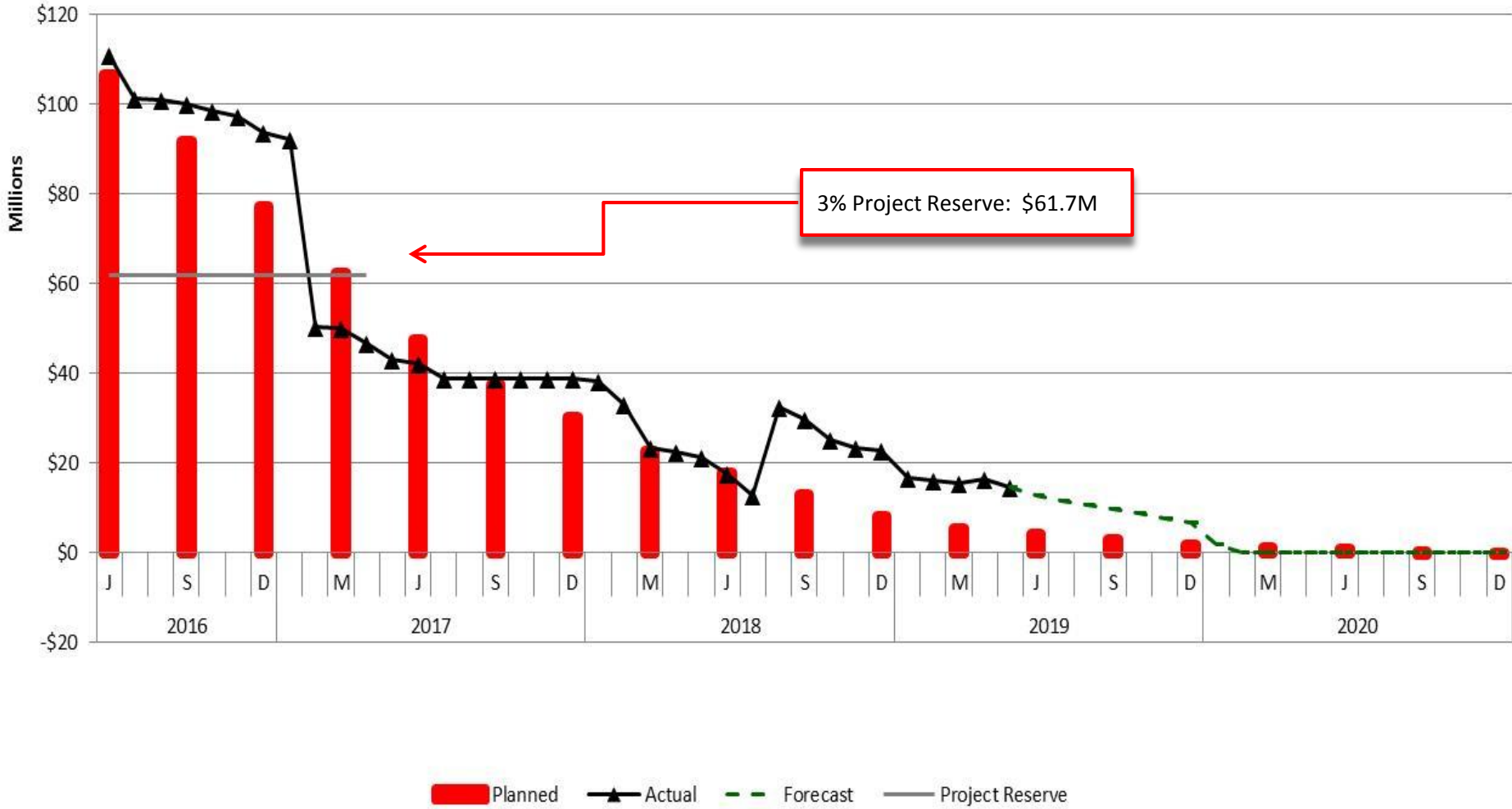
Possible problem



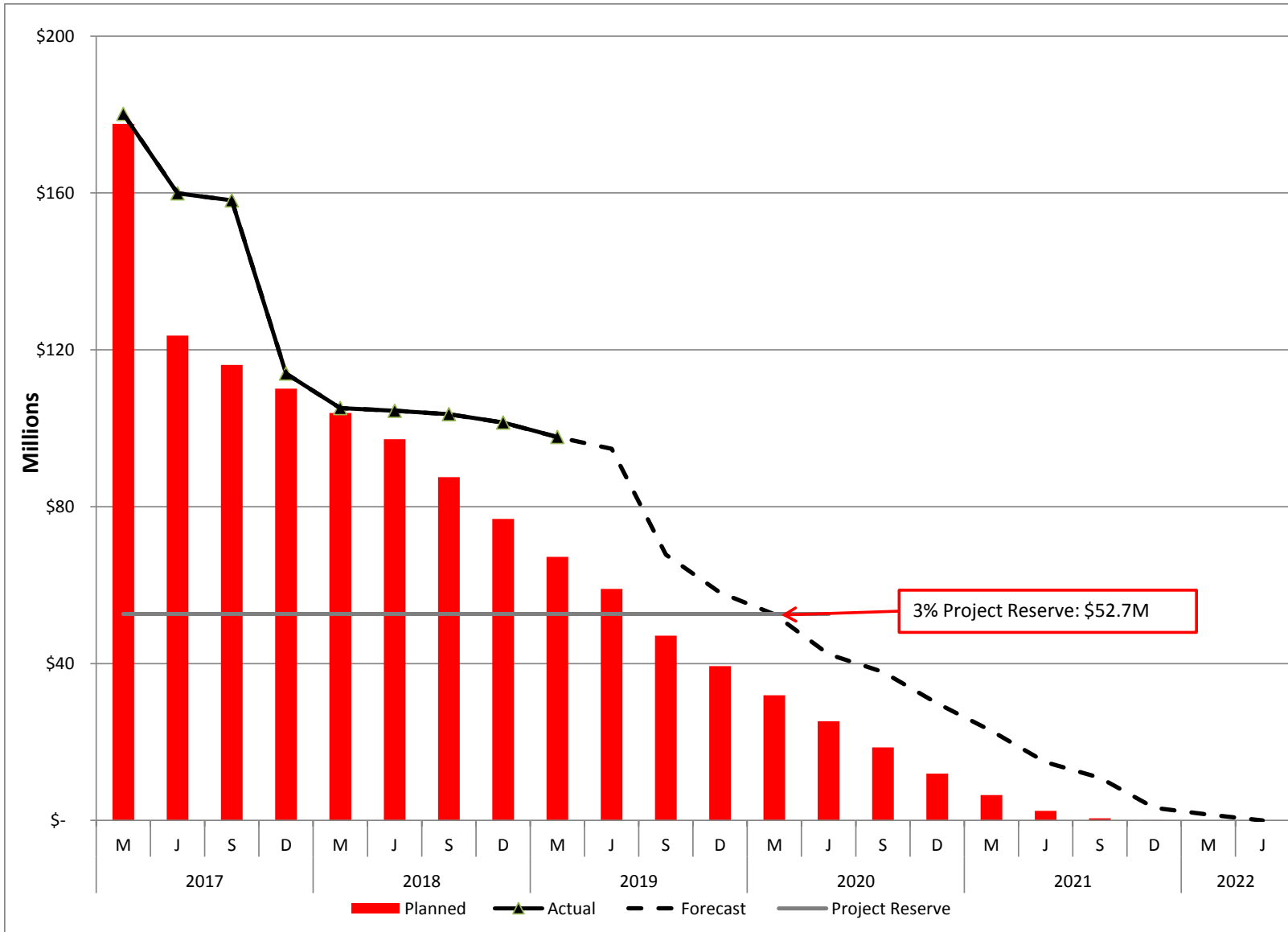
Major issue

# Crenshaw/LAX Transit Project

## Project Cost Contingency Drawdown



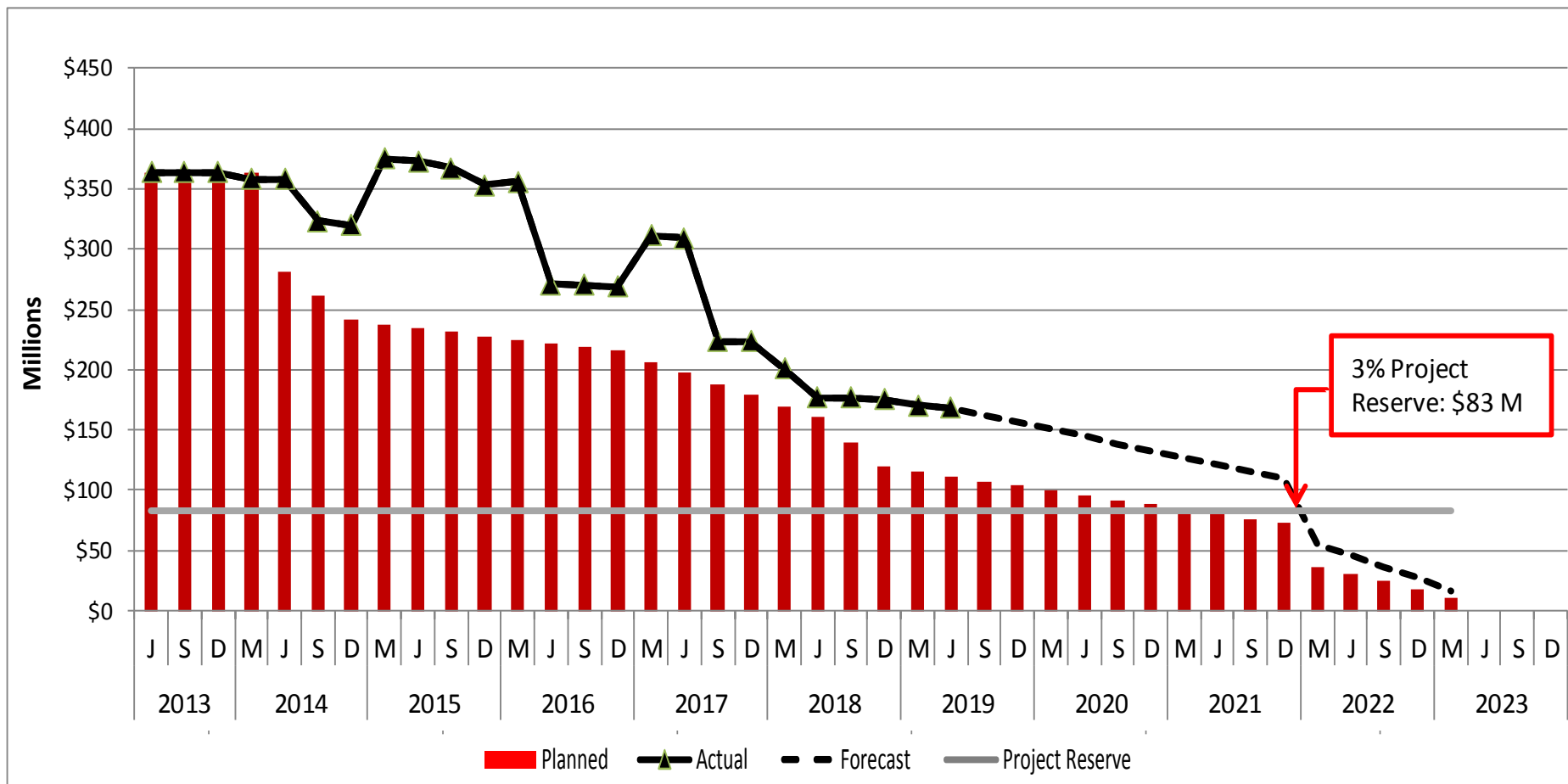
# Regional Connector Project Cost Contingency Drawdown



# Westside Purple Line Extension – Section 1

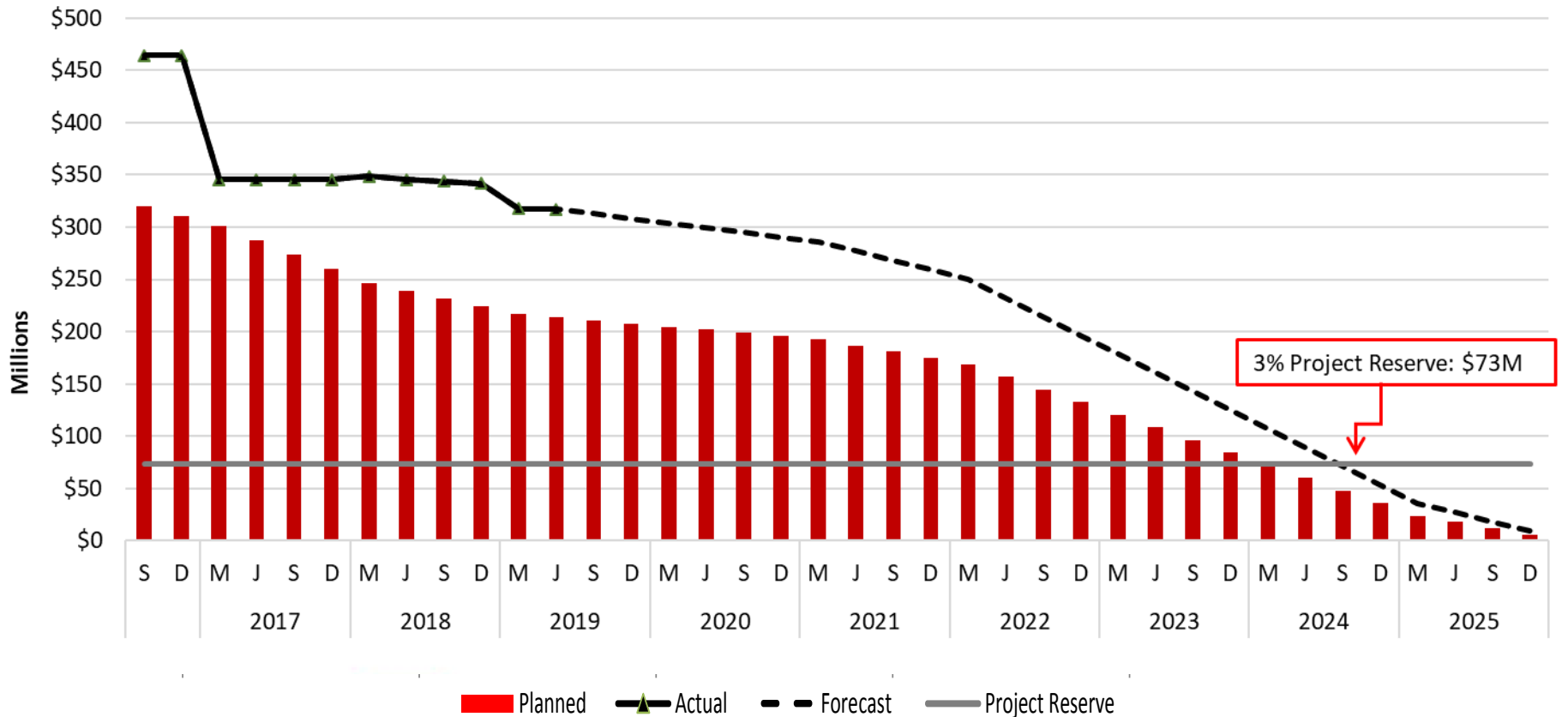
May 2019

## Project Cost Contingency Drawdown



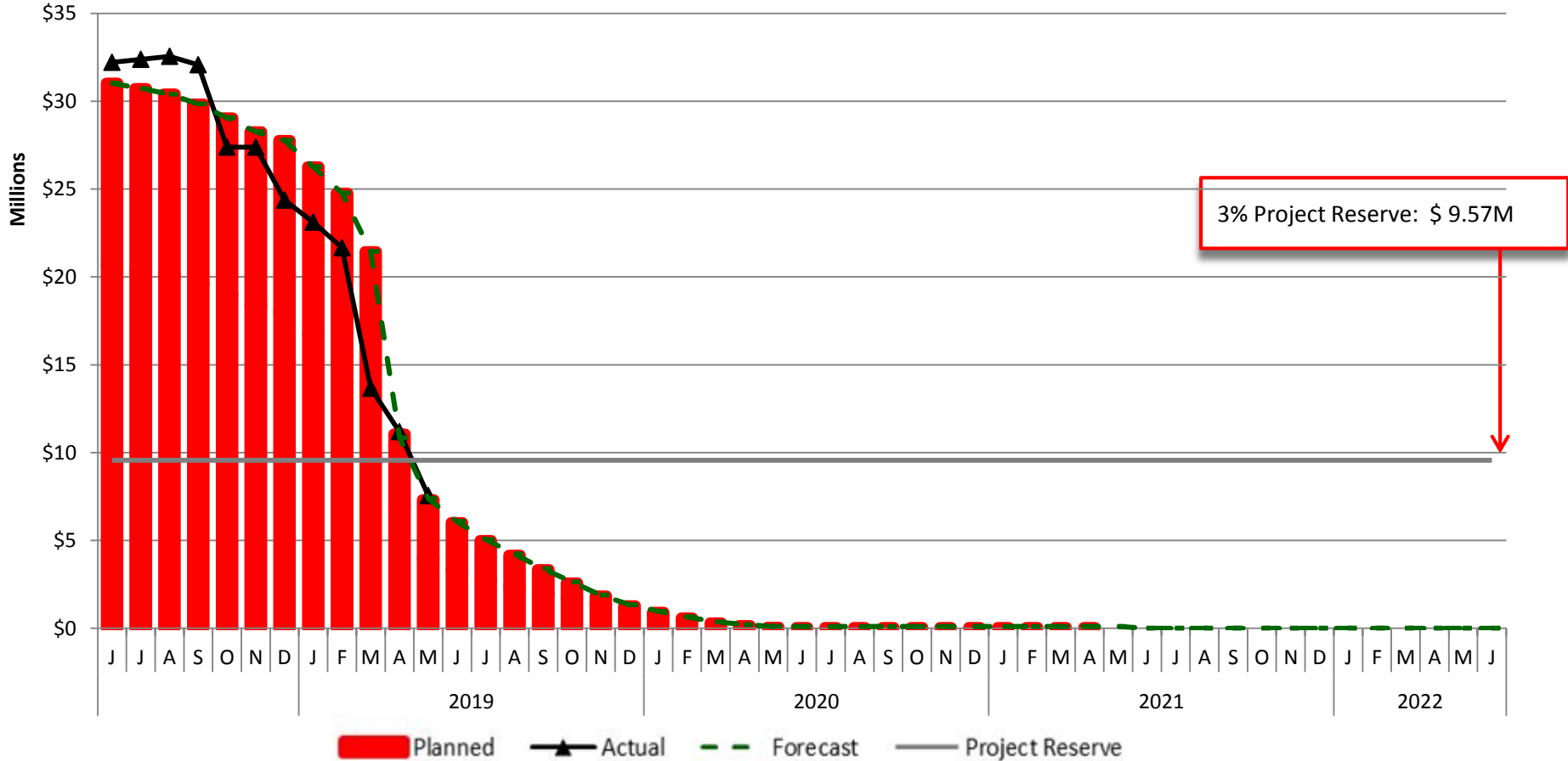
# Westside Purple Line Extension – Section 2

## Project Cost Contingency Drawdown



# New Blue Projects

## Project Cost Contingency Drawdown



3% Project Reserve: \$ 9.57M

- Blue Line Signal Rehabilitation
- Blue Line Track and System Refurbishment
- Willowbrook/Rosa Parks Station





**Board Report**

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**File #:** 2019-0494, **File Type:** Contract

**Agenda Number:** 29.

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**CONSTRUCTION COMMITTEE  
JULY 18, 2019**

**SUBJECT: PROGRAM MANAGEMENT QUARTERLY CHANGE REPORT**

**ACTION: RECEIVE AND FILE**

**RECOMMENDATION**

RECEIVE AND FILE status report on Program Management Quarterly Change Report.

**BACKGROUND**

At the January 26, 2018 Board meeting, the Board approved the continuation and expansion of the delegation of authority within Life of Project (LOP) budget management on all Transit and Regional Rail Capital Projects. Staff was directed to provide quarterly reports to the Board on change orders and modifications that are above \$500,000.

**DISCUSSION**

The change activities for the reporting period between March 1, 2019 and May 31, 2019 are included in Attachment A.

**FINANCIAL IMPACT**

The changes included in this report are included in the approved life-of-project budget for each project.

**IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Recommendation supports strategic plan goal # 5 to provide responsive, accountable, and trustworthy governance within the Metro organization by keeping the Board informed of the Projects' change orders and modifications via submitting the Change Order log on a quarterly basis.

**NEXT STEPS**

The next Change Order Log will cover the period of June 1, 2019 to August 31, 2019 and will be presented to the July 2019 Construction Committee.

**ATTACHMENTS**

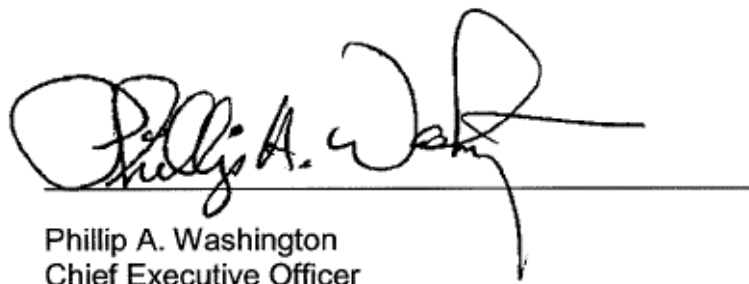
Attachment A - Quarterly Change Report for Reporting Period of March 1, 2019 - May 31, 2019.

Prepared by:

- **Crenshaw/LAX** - Sameh Ghaly, Sr. EO Project Mgmt., (213) 418-3369
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- **Westside Purple Line Ext 1** - James Cohen, EO Project Mgmt., (213) 922-7911
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- **Westside Purple Line Ext 3** - Kimberly Ong, EO Project Mgmt., (213) 922-7382
- **The New Blue** - Timothy Lindholm, EO Project Engr., (213) 922-7297
- **Patsaouras Plaza Busway Station** - Timothy Lindholm, EO Project Engr. (213) 922-7297
- **Report** - Brian Boudreau, Sr. EO Program Control, (213) 922-2474

Reviewed by:

Richard Clarke, Chief Program Management Officer, (213) 922-7557



Phillip A. Washington  
Chief Executive Officer

## CRENSHAW/LAX TRANSIT PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1, 2019 - May 31, 2019)

Change Types:

1 - Betterment 2 - Third Party 3 - Differing Site Conditions 4 - Regulatory Requirements 5 - Scope 6 - Value Engineering 7 - Safety

#### A) DESIGN BUILD CONTRACT - Contract No. C0988 - WALSH SHEA CORRIDOR CONSTRUCTORS

MOD/CHANGE #	DESCRIPTION (if the change is a unilateral, explain in BOLD fonts)	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
MOD-00426 CN-00556	<u>Irrigation Water Meters, Park Mesa Median</u> : Contractor shall construct 15 water service lines from main water to new irrigation meters for the landscape medians, including the procurement and installation of 15 meters within the Park Mesa Heights landscape medians.	1	5/9/2019	6/3/2019	\$ 899,820	\$ 776,000

#### B) PROFESSIONAL SERVICES CONTRACTS

CHANGE NOTICE/ORDER #	DESIGN SERVICES DURING CONSTRUCTION - Contract No. AE47810E0128 - SECOTRANS, JOINT VENTURE	Change Type	Rough Order of Magnitude Cost			
MOD-00004	<u>Crenshaw Design Services During Construction</u> : Due to the specialty nature of Rail Systems work, it has been requested by Crenshaw Project Management that consultant support is needed to support DSDC activities as they arise. Consultant shall provide Design Services During Construction (DSDC) support for the Crenshaw/LAX Transit Project (Crenshaw Project). Various rail systems disciplines listed in Contract No. AE47810E0128 may be utilized to complete this Scope of Work in support of the Crenshaw project until its completion, which is currently projected for 2019. The Consultant shall provide the support services as requested by the Crenshaw Project. See attached detailed Scope of Work (SOW).	7	2/26/2019	3/15/2019	\$ 539,009	\$ 539,009

**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1, 2019 - May 31, 2019)**

**A) DESIGN BUILD CONTRACT - Contract No. C0988 - WALSH SHEA CORRIDOR CONSTRUCTORS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
CN-00515	<u>Modify Canopies &amp; Gates, Hindry/West/Slauson Stations</u> : provide all labor, material and equipment to construct canopy columns, canopy outriggers, canopy lighting, and emergency swing gates at these 3 stations Hindry, West and Slauson, per C0988-MOD-00056 and C0988-MOD-00251.	7	Between \$500K - \$1M
CN-00557	<u>SCE/DWP Power Feeds at Street Lights and Traffic Signals (RFC 517)</u> : Contractor shall provide all labor, equipment and material needed to install various power feed conduits between the utility main and meter/point of connection for new power services to traffic signals and street lights in the City of Los Angeles and City of Inglewood. Conduits must be installed to bring power from the utility company's system to the service meter/point of connection in order to power street lights and traffic signals. The power utility companies, SCE and DWP Power, have stated they are unable to perform this construction and the work is not included in the Contractor's scope of work to perform.	7	Between \$500K - \$1M

**B) PROFESSIONAL SERVICES CONTRACTS**

MOD/CHANGE #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

## REGIONAL CONNECTOR TRANSIT PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1, 2019 - May 31, 2019)

Change Types:

1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A. DESIGN BUILD CONTRACT - CONTRACT NO. C0980 - REGIONAL CONNECTOR CONSTRUCTORS

MOD/CHANGE #	DESCRIPTION <small>(if the change is a unilateral, explain in <b>BOLD</b> fonts)</small>	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
141	EAST/WEST FLOWER BETWEEN 5TH & 6TH IMPACTS TO SOE, DECKING, UTILITES AND TEMP DRAINAGE	5	8/10/2018	3/13/2019	\$ 2,048,118	\$ 1,900,000
137	DWPPS LATERAL 3 DUCTBANK 1/C (C0981R WORK)	5	3/7/2019	3/20/2019	\$ 573,646	\$ 532,000
145	TBM PIT INVERT REMOVAL	5	12/31/2018	3/20/2019	\$ 699,810	\$ 699,810
CO-00026	PROCURE HIGH ATTENUATION FASTENERS IN THE CROSSOVER CAVERN	5	N/A	5/23/2019	N/A	\$ 500,000

#### B. PROFESSIONAL SERVICES CONTRACT

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
	None					

#### C. OTHER AGREEMENTS

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
	None					

**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K**

**A. DESIGN BUILD CONTRACT - CONTRACT NO. C0980 - REGIONAL CONNECTOR CONSTRUCTORS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
C0980-CN-00204	ADDITIONAL DESIGN FOR CIVIL A AND B STREET RESTORATION PLANS - Provide additional design services to address additional comments from City agencies on the Civil A and Civil B Street restoration plans.	5	Between \$500K - \$1M

**B) PROFESSIONAL SERVICES CONTRACTS**

**Design Support Services During Construction**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
E0119-CN30	DESIGN SERVICES DURING CONSTRUCTION FOR FY20	5	\$ 1,600,000

**C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
MC070-CN18	FUNDING FOR CONSTRUCTION MANAGEMENT SUPPORT SERVICES THROUGH FY20	5	\$ 9,000,000

**D. OTHER AGREEMENTS**

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
	None					

## WESTSIDE PURPLE LINE EXTENSION - SECTION 1 PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1, 2019 - May 31, 2019)

Change Types:  
 1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A. DESIGN BUILD CONTRACT - CONTRACT NO. C1045 - SKANSKA-TRAYLOR-SHEA, A JOINT VENTURE

MOD/CHANGE #	DESCRIPTION (if the change is a unilateral, explain in <b>BOLD</b> fonts)	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
MOD-77	<u>Isolate Ansaldo and Alstrom Track Circuits @ Wilshire/Western - Part 1:</u> The Contractor will provide a separation between Ansaldo and Alstrom Track Circuits at the Wilshire/Western and Wilshire/Normandie Train Control territories. This change avoids potential safety hazards related to track circuit failures when equipment is mixed between two different manufacturers.	7	03/05/19	4/9/2019	\$ 665,722	\$ 587,572

#### A. DESIGN BUILD CONTRACT - CONTRACT NO. C1078 - CLARK CONSTRUCTION GROUP

MOD-25	<u>Revised Low Impact Development (LID) Construction:</u> Two (2) contaminated groundwater plumes were discovered under the Location 64 site. To avoid further contamination of the local ground water, the design-builder was directed to revise the LID design.	3	04/08/19	5/10/2019	\$ 779,428	\$ 612,408
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**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1, 2019 - May 31, 2019)**

**A) DESIGN BUILD CONTRACT - CONTRACT NO. C1045 - SKANSKA-TRAYLOR-SHEA, A JOINT VENTURE**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
CN-105.1	<u>Fully Guarded Double Crossover - Shop Drawings and Associated Track Components (Design - Delta)</u> : This change allows the contractor to design and develop the necessary shop drawings required for the revised fully guarded double crossover.	5	Between \$500K - \$1M
CN-127	<u>La Cienega - Dewatering DSC (Letter 663)</u> : This change covers Differing Site Conditions (DSC) related to groundwater dewatering at the La Cienega Station site. It includes new engineering design and analysis, installation of additional dewatering wells, crane mats, well-points and French drains, as well as additional labor resources needed to reduce schedule impacts.	3	Between \$10M - \$15M
TBD	<u>Wilshire/Western Groundwater Chemistry Impacts</u> : This change covers the increased dewatering well and treatment system maintenance due to unanticipated groundwater quality. Also includes pump failures, additional trenches and sumps and installation of a French Drain system as a secondary source of groundwater control.	5	Between \$1M - \$5M

**A) CONTRACT NO. C1078 - CLARK CONSTRUCTION GROUP**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**B) PROFESSIONAL SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
CN 69	<u>WPLE Section 1 Project – Engineering Support Services During Construction and Other Tasks</u> : This change allows the Metro design consultant (WSP) to continue to provide design support during construction services for the C1045 contract for an additional 24 months to June 30, 2021.	5	Between \$10M - \$15M

**C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
CN 6	<u>Continue Construction Management Support Services (CMSS) to June 30, 2021</u> : This change allows WEST, JV (WEST) to continue to provide construction management support services for an additional 24 months to June 30, 2021.	5	Over \$20M



## WESTSIDE PURPLE LINE EXTENSION - SECTION 2 PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1 to May 31, 2019)

Change Types:  
 1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A. DESIGN BUILD CONTRACT - C1120

MOD/CHANGE #	DESCRIPTION (if the change is a unilateral, explain in <b>BOLD</b> fonts)	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
MOD-00037	<u>Revision to Average Depth of Seismic Borings Along Wilshire Blvd. on Tunnel Reach 5:</u> The 20 planned and required borings were divided into two phases with 10 borings each. The borings in Phase 1 are now complete. The findings from Phase 1 were then used to refine the proposed depths and locations of the remaining Phase 2 borings. The total number of borings remains the same, but the average depth was increased by 50 feet. This change is necessary in order to complete the geotechnical investigation needed to determine the potential placement of additional special tunnel liner.	5	02/13/19	3/5/2019	\$ 1,156,887	\$ 921,496
MOD-00038	<u>MOA Work Hour Requirements for Fault Investigation Borings:</u> The City of Beverly Hills permit for fault investigation borings incorporated revised requirements for hours of work and holiday moratorium which were not in the original contract.	2	02/13/19	3/5/2019	\$ 654,842	\$ 521,602

#### B. PROFESSIONAL SERVICES CONTRACT

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
	None					

**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1 to May 31, 2019)**

**A) DESIGN BUILD CONTRACT - C1120**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
TBD	<u>Century City Constellation Station Trackwork Extension</u> : Metro had previously issued project definition drawings which did not have adequate track between the end of the platform and the bumper post. This resulted in track work which was not long enough to establish safe braking distance while the station was to act as a temporary terminus.	5	Between \$1M - \$5 M
TBD	<u>Additional Mitigation Monitoring and Reporting per Nov 2017 Final SEIS</u> : This change is necessary in order to comply with and perform the updated mitigation measures and meet the monitoring and reporting requirements of the approved Final SEIS.	5	Between \$500K - \$1M
TBD	<u>Revised Limits of Special Lining Section</u> : As part of the C1120 Contract, 1,300 feet of Special Lining Section for tunnel fault crossings were specified with provisions to purchase an additional 700 feet that may be required as result of additional geotechnical exploration. The geotechnical exploration has resulted in more well-defined fault characterization along Lasky Drive and Wilshire Blvd. This has resulted in a reduction of the Special Lining Section from the original 1,300 feet to approximately 1,230 and 1,240 feet for the BR and BL tunnel, respectively without the expense and need for the additional 700 feet. This change will compensate the Contractor for rearrangement of the Special Lining Section into two shorter discrete sections and credit Metro for a reduction of the total length of Special Lining Section.	5	Between \$1M - \$5 M
CN-00065	<u>LA County Tax Increase</u> : This change is pursuant to Contract Compensation and Payment Provisions, CP-6 Payment of Taxes, which requires all taxes the Contractor is required to pay by Laws in effect on the date the Contractor's Bid was opened. This change is for sales tax purchases impacted by Los Angeles County's sales tax increases on July 1, 2017 (0.5 %) and October 1, 2017 (0.25%).	4	Between \$1M - \$5 M

**B) PROFESSIONAL SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**D) OTHER AGREEMENTS**

MOD/CHANGE #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

## WESTSIDE PURPLE LINE EXTENSION - SECTION 3 PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1, 2019 - May 31, 2019)

Change Types:

1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A) DESIGN BUILD CONTRACT - C1151

MOD/CHANGE #	DESCRIPTION <small>(if the change is a unilateral, explain in <b>BOLD</b> fonts)</small>	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
CO1.2	REVISE THE TAIL TRACK EXIT SHAFT LOCATION FROM THE U.S. ARMY RESERVE TO THE VETERANS AFFAIRS (VA) PROPERTY AND REPLACE THE DESCRIPTION "U.S. ARMY RESERVE" TO "VETERANS AFFAIRS (VA)"	5	N/A	5/13/2019	N/A	\$500,000.00
CO2.1	REVISIONS TO SOUTHERN CALIFORNIA EDISON (SCE) POWER CONNECTION	5	N/A	4/16/2019	N/A	\$500,000.00

#### A) DESIGN BUILD CONTRACT - C1153

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
	None					

#### B) PROFESSIONAL SERVICES CONTRACTS

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
	None					

**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1, 2019 - May 31, 2019)**

**A) DESIGN BUILD CONTRACT - C1151**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
CN-01	<u>REVISE THE TAIL TRACK EXIT SHAFT LOCATION FROM THE U.S. ARMY RESERVE TO THE VETERANS AFFAIRS (VA) PROPERTY AND REPLACE THE DESCRIPTION "U.S. ARMY RESERVE" TO "VETERANS AFFAIRS (VA)";</u> Metro requested this change based upon the Department of the Army declining Metro's request for easement at the U.S. Army Reserve, required for the Tail Track Exit Shaft as part of the tunnel construction operations. The U.S. Army Reserve requested the VA's determination of their ability to accommodate Metro's proposed facilities on the VA property. Metro provided a memo to the VA, outlining alternatives for the location of the shaft and tunnel construction staging areas on the VA property. A letter from the VA stated that the VA could accommodate tunnel construction operations on the western edge of the VA property provided that the only permanent Metro presence within the VA Historic District is the access shaft and associated surface exit hatch and surface ventilation plenums. Therefore, Metro must revise the Contract Documents to relocate the Tail Track Exit Shaft to complete the tunnels.	5	Between \$10 - \$15 M

**A) DESIGN BUILD CONTRACT - C1153**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**B) PROFESSIONAL SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

## METRO BLUE LINE - SIGNAL SYSTEM REHABILITATION PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1, 2019 - May 31, 2019)

Change Types:

1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A) DESIGN BUILD CONTRACT - Contract C1081 Metro Blue Line Resignalling - Mass Electric

MOD/CHANGE #	DESCRIPTION (if the change is a unilateral, explain in <b>BOLD</b> fonts)	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
MOD 6 (CN 10)	<u>Feeder Cable:</u> Contractor to procure and provide 53,000' of 750 MCM OCS feeder cable to use in the Metro Blue Line (MBL) Los Angeles Central Business District (LACBD) section (near Pico/Grand/San Pedro Stations) by June 2019.  This contract modification was not paid for by Project 205108. Mod executed at the request of Operations and they paid for it using Project 205114.	5	5/1/2019	TBD	\$ 1,162,579	\$ 1,163,925

#### B) PROFESSIONAL SERVICES CONTRACTS

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
SECOTRANS - Task Order 6	Rail Systems Support	5	2/27/2019	3/15/2019	\$ 1,500,000	\$ 1,417,911

#### C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS

MOD/CHANGE #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
Destination Enterprises - Task Order 22	Mod 3 (916,916) - Construction Safety Specialists	5	2/26/2019	3/11/2019	\$ 916,916	\$ 916,916

**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1, 2019 - May 31, 2019)**

**A) DESIGN BUILD CONTRACT - Contract C1081 Metro Blue Line Resignalling - Mass Electric**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
CN 6.1 (Replaces CN 6 reported last quarter)	<u>Florence Integrated Vital Processor (IVP) Installation and Relay:</u> This is for Modifications on the Train Control Scope to include the installation of the clean agent fire suppression system in the new train control bungalows. Documents affected: Scope Modifications to Section 01 11 00 of the Scope of Work, Subsection 1.03.A.3	5	\$ 1,200,000

**B) PROFESSIONAL SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
SECOTRANS - Task Order 6	Design Support During Construction	5	\$ 800,000

**C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

## METRO BLUE LINE - TRACK AND SYSTEM REFURBISHMENT PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1, 2019 - May 31, 2019)

Change Types:  
 1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A) DESIGN BUILD CONTRACT - Contract C1168 Metro Blue Line Track Refurbishment

MOD/CHANGE #	DESCRIPTION (if the change is a unilateral, explain in <b>BOLD</b> fonts)	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
MOD 6 (CN 10.1)	<p><u>Metro Pole Painting –</u>                      The contractor shall paint the OCS and OCS/light poles south of East Willow Street along the Blue Line alignment and light poles at various stations/parking lots as detailed in the "<u>Metro Pole Count</u>" table (count to be field verified by contractor) and in accordance with Technical Requirements Section 09 91 00 "Painting." Contractor shall be responsible for coordinating with third parties including the City of Long Beach, obtaining permits and covering the cost of fees as outlined in Technical Requirements Section 01 71 43 "Permits, Licenses, and Agreements".                      Contractor shall use approved primer. Vista Prime Zall. and paint (two (2) coats). Vista Protec Alkyd Emulsion 99 Gloss Finish in color RAI 7037.</p>	5	03/21/19	4/8/2019	\$ 932,650	\$ 833,686
MOD 7 (CN 15)	<p><u>Willowbrook/Rosa Parks (W/RP) Signage:</u>                      Contractor to procure and provide signage for W/RP</p> <p>This contract modification was not paid for by Project 205108. Scope was originally part of W/RP Contract C1161. For efficiency, scope was transferred to Contract C1168 - but will still be paid by Project 210151.</p>	6	5/7/2019	5/20/2019	\$ 1,166,754	\$ 1,166,754
CO 5 (CN 16.1)	<p><u>9th Street Diamond:</u>                      REVISE Specification Section Summary of Work Spec Section 01 11 00, Item 1.03.A.1.n  <b>FROM:</b>                      n. Contractor shall replace the following special track crossovers:                      9th Street Diamond - 140 ft.  <b>TO:</b>                      n. Contractor shall replace the following special track crossovers:                      9th Street Diamond - 140 ft., including demolish and replace existing supporting track structure under 9th Street Diamond MP20.39 in accordance with approved conceptual design and shop drawings in compliance with all AREMA and all Metro standards that apply including Metro Rail Design Criteria (MRDC). Drawings shall be provided by the contractor, including drainage solution, for Metro approval in order to accommodate installation of new special track work diamond. The Option A and Option B Demolition Limits shown on Drawing C-3 do not apply to this condition.</p>	1	4/19/2019	4/23/2019	\$ 755,000	\$ 450,000

#### B) PROFESSIONAL SERVICES CONTRACTS

SECOTRANS - Task Order 12	Rail Systems Support	5	2/27/2019	3/15/2019	\$1,500,000	\$1,545,042
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**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1, 2019 - May 31, 2019)**

**A) DESIGN BUILD CONTRACT - Contract C1168 Metro Blue Line Track Refurbishment**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**B) PROFESSIONAL SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		



## WILLOWBROOK/ROSA PARKS STATION IMPROVEMENT PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD (March 1, 2019 - May 31, 2019)

Change Types:

1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A) DESIGN BUILD CONTRACT - C1161 Willowbrook/Rosa Parks Improvements - Icon West

MOD/CHANGE #	DESCRIPTION <small>(if the change is a unilateral, explain in <b>BOLD</b> fonts)</small>	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
MOD 3 (CN 2.1)	<p><u>Updated Design Drawings and Technical Specifications</u>                      In conformance with the documents dated June 29, 2018, the Contractor shall proceed with the construction of a new Customer Service and Security Building, Mobility Hub, pedestrian promenade, outdoor plaza, Blue Line platform and mezzanine extension, and renovation of two existing Green Line elevators. The updated package includes revisions to various sections in the Drawing package and Technical Specifications, including structural, civil-site, architectural, signage, electrical, and plumbing.</p>	5	02/27/19	3/19/2019	\$ 593,957	\$ 592,457

#### B) THIRD PARTY AGREEMENTS

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Rough Order of Magnitude Cost
TPALB2101510000	Agreement with City of Long Beach to Install Median and Fencing	2	03/13/19	4/1/2019	N/A	\$ 1,800,000

**II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1, 2019 - May 31, 2019)****A) DESIGN BUILD CONTRACT - Contract C1161 - Icon West**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**B) PROFESSIONAL SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	Design Support During Construction		

**C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS**

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

## PATSAOURAS PLAZA BUSWAY STATION PROJECT

### I. APPROVED MODIFICATIONS/CHANGES GREATER THAN \$500K IN THIS REPORTING PERIOD March 1, 2019 - May 31, 2019)

Change Types:  
 1 - Betterment   2 - Third Party   3 - Differing Site Conditions   4 - Regulatory Requirements   5 - Scope   6 - Value Engineering   7 - Safety

#### A) DESIGN BUILD CONTRACT - C0970 Patsaouras Plaza Busway Station - OHL

MOD/CHANGE #	DESCRIPTION (if the change is a unilateral, explain in <b>BOLD</b> fonts)	Change Type	Submission Date	Approval Date	Contractor's Proposed Amount	Approved Amount
Mod 28 (CN 45) Global Settlement	This Contract Modification represents the Settlement Agreement between Metro and the Contractor, OHL USA, Inc., to resolve the following items. 1) Pre-Construction Delays (Claims to January 2017) 2) 2017 Construction Delays 3) ESA Delays 4) Escalation 5) Potential Change Orders 6) Global Impact and Inefficiencies 7) Unilateral (CO 00003, 00004, 00005) 8) Revised contract completion date, 258 days after anticipated date suspension lifted (February 15, 2019) and construction work resumes	5	12/01/18	5/30/2019	\$ 5,400,000	\$ 5,375,000
Mod 29 (CN 46) Archeological Delays	This Contract Modification provides eighty-seven (87) calendar days for additional delay due to archaeological investigation from February 15, 2019 through May 13, 2019, and referenced in Settlement Agreement memorized on May 7, 2017. This change brings the start date to May 13, 2019.	3	12/01/18	5/30/2019	\$ 625,000	\$ 625,000

### II. PENDING MODIFICATIONS/CHANGES GREATER THAN \$500K (March 1, 2019 - May 31, 2019)

#### A) DESIGN BUILD CONTRACT - C0970 Patsaouras Plaza Busway Station - OHL

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

#### B) PROFESSIONAL SERVICES CONTRACTS

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

#### C) CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONTRACTS

CHANGE NOTICE/ORDER #	DESCRIPTION	Change Type	Rough Order of Magnitude Cost
	None		

**Board Report**

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**File #:** 2019-0495, **File Type:** Informational Report**Agenda Number:** 30.

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**CONSTRUCTION COMMITTEE  
JULY 18, 2019****SUBJECT: OFFICE OF THE INSPECTOR GENERAL CHANGE ORDER/MODIFICATION  
CONSTRUCTION SPOT CHECKS****ACTION: RECEIVE AND FILE****RECOMMENDATION**

RECEIVE AND FILE Office of the Inspector General Change Order/Modification Construction Spot Check Report.

**ISSUE**

On January 25, 2018, the Metro Board directed the Office of the Inspector General (“OIG”) to conduct random spot checks on the projects listed in the quarterly program management report to ensure that the delegation of authority to approve construction Change Orders policy is performing in the manner desired by the Board of Directors.

**BACKGROUND**

This quarters OIG’s Spot Check Program (“Spot Checks) focuses on approved Change Orders and Modifications that exceed \$500,000 dollars. The four Change Orders in this report were selected from the July 2019 Program Management Major Project Status Report (File # 2019-0494), covering March 1 to May 31 2019. The information for the Spot Checks was collected from the Program Management Information System (PMIS) which is the department’s database system. Also, in-person and telephonic interviews were conducted with Metro Program Management, Project Control, and Procurement staff from each individual project office.

We found that all four of the Change Orders in this report were negotiated and executed more expeditiously than would have occurred pursuant to the former Board approval process, and all four were approved faster with the new delegation of authority. In addition all four Change Orders were negotiated at lower cost than the contractors’ proposed price. This quarter’s Spot Checks of Change Orders/Modifications found the delegation of authority has resulted in:

- A negotiated amount that was reasonable for the work to be done,
- Enabled the contractor to immediately order parts and materials, reducing delay.
- Consultant having no overlap in schedule and was able to continue working, and
- Zero Construction delay costs were incurred.

Each Spot Check summarizes the following areas:

- Introduction of Change Order/Modification
- Facts of Change Order (charts and pictures shown on Attachment A)
- Scope of Work
- Budget
- Schedule: Time to Execute Change Order
- Recommendations

Metro's Program Control department will provide responses to the recommendations in this report to the OIG Spot Checks within 30 days after this Board report. Attachment B, included in this July report, is a separate spreadsheet of recommendations and responses for January and April 2019.

## **DISCUSSION**

### **I. Spot Checks Performed in this Quarter**

#### **A. Spot Check #1 - Crenshaw/LAX Transit Project**

This OIG Spot Check report concerns the Crenshaw/LAX Transit Corridor Project (Contract C0988 MOD-00426), Irrigation Water Meters, Park Mesa Medians.

#### **Facts of Change Order**

See Attachment A Spot Check #1 chart.

#### **Summary #1**

**Scope of Work** - This change order came as a request from Los Angeles Board of Public Works. The original scope of work provided for the medians at Park Mesa will be hardscaped with stripes, but during the City review it requested to have landscaping at the medians. Typically Los Angeles Department of Water and Power (LADWP) performs the work of tapping into the main water line and running water service to the new meter would be paid for by Metro, when Metro is requesting the work. However LADWP did not have schedule availability so the Crenshaw contractor was requested to submit a cost proposal (via their subcontractor) to Metro to perform the work. Work includes tapping into the water main, running 15 water services to 15 new water meters, to 15 water pipes to the irrigation project, which provides water to the new proposed landscaping.

**Budget** -. This Modification was negotiated and the award is \$776,000. The contractor's proposal was \$899,819 and the ICE was \$475,120. The award amount was \$123,819 under or 13.76% less than the contractor's proposal. The negotiated amount was \$300,880 over or 63% more than the ICE.

**Schedule** - The new delegation process was utilized for this Modification which was executed on June 3, 2019. The agreed upon scope occurred on Feb.15, 2019 but was not submitted until May 9, 2019. Using the June V/CM submission date, this Change Order would have gone to the July Board agenda. The scenario of utilizing the Board for approvals on change orders would be 56 work-days later verses the 18 work-days utilizing the delegated authority.

### **Recommendation**

There is disagreement between the City of Los Angeles Public Works and LA Metro about the responsibility for the changes. That should be discussed and resolved.

### **B. Spot Check #2 - Regional Connector Transit Project**

This OIG Spot Check report concerns the Regional Connector Transit Corridor Project (Contract C0980 MOD-00141.2), Flower Street from 5<sup>th</sup> to 6<sup>th</sup> Streets- Impacts to Support of Excavation (SOE): Decking, Utilities and Temporary Drainage.

### **Facts of Change Order**

See Attachment A Spot Check #2 chart.

### **Summary #2**

**Scope of Work** - Existing underground utilities are in different locations than what was shown on the as-built drawings and the project definition drawings. This change order is considered differing site conditions that were encountered on Flower Street between 5<sup>th</sup> to 6<sup>th</sup> Streets. The existing underground utilities are multiple communication lines, communication duct banks, and two large storm drains. Additionally a subterranean basement wall and existing building support of excavation were not shown on as-built drawings. The contractor will relocate utilities, modify the support of excavation, and install temporary drainage improvements. The contractor is also directed by Metro to perform work at weekend premium time which eliminates the need for noise/visual barriers and allows for an earlier completion date. Since this work was not included in the original base scope of work, an adjustment in contract price is warranted.

**Budget** - This Modification was negotiated and the award is \$1,900,000. The contractor's proposal was \$2,048,118 and the ICE was \$1,854,717. The award amount was \$148,118 under or 7.23% less than the contractor's proposal. The negotiated amount was \$45,283 over or 2.44% more than the ICE.

**Schedule** - The new delegation process was utilized for this Modification which was executed on March 13, 2019. The scope of work was agreed upon on March 6, 2019, just missing the April cutoff date to submit to V/CM. Using the April V/CM submission date, this Change Order would have gone to the May Board agenda. The scenario of utilizing the Board for approvals on change orders would be 57 work-days later verses the 10 work-days utilizing the delegated authority.

### **Recommendation**

The OIG recognizes the age of the buildings at the site and errors of definitive drawings. This circumstance demonstrates the need to research on the front end, even drawings we have to confirm accuracy, to preclude issuing an expensive change order after construction has commenced.

### **C. Spot Check #3 - Purple Line Extension Section 1 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 1 Transit Project (Contract C1078 MOD-00025), Revised Low Impact Development (LID).

### **Facts of Change Order**

See Attachment A Spot Check #3 chart.

### **Summary #3**

**Scope of Work** - The construction project of LID for the maintenance of way/non-revenue vehicle maintenance yard project at Location 64, on South Santa Fe Avenue has been on-going for some time. When the project began, no one was aware of the two contaminated groundwater plumes traveling under the site toward the LA River. Initial design in 2016 proposed permeable pavement and an infiltration trench directly over the plumes. Later in 2016, groundwater investigation took place followed by an in-depth analysis in 2017. It was determined in 2018 that re-design by the consultant was mandatory to comply with Cal/EPA and other agencies regulations. Percolation and infiltration of storm water runoff design now runs to “save zones” within the project. Differing site conditions from the original contract, now requires this Modification in April 2019 to construct the re-design of the LID work to ensure safe groundwater.

The contractor shall build a parallel overflow drainage system that connects to an existing 90-inch storm drain structure which outfalls to the LA River at the northeast corner. The contractor shall also amend the final graded surface, raise fence footings, revise drainage pipe layouts, add additional drainage inlets, enlarge permeable pavement in Area 2 and Area 3, and not build in the original Area 1 which is above the plumes. These modifications should result in safer groundwater and comply with EPA regulations.

**Budget** - This Modification was negotiated and the award is \$612,408. The contractor’s proposal was \$779,428 and the ICE was \$598,898. The award amount was \$167,020 below or 21.42% less than the contractor’s proposal. The negotiated amount was \$13,510 over or 2.26% more than the ICE.

**Schedule** - The new delegation process was utilized for this Modification which was executed on May 10, 2019. The scope of work was agreed upon April 10, 2019, missing May cutoff date to submit to V/CM. Using the May V/CM submission date, this Change Order would have gone to the June Board agenda. The scenario of utilizing the Board for approvals on change orders would be 57 work-days later verses the 23 work-days utilizing the delegated authority.

### **Recommendation**

This location was the original site for the Santa Fe Railway yard. Dumping of diesel fuel, lubricating oils, and axle grease was not monitored in 1907. The cost of hiring consultants to investigate, evaluate, re-design and now construct could have been avoided if underground investigation including sampling and boring occurred in the Environmental Assessment stage of the project. The OIG performed a spot check on this topic before (2018-0191 May) at the phase of the assessment and re-design. Our recommendations at that time were not only to add this to lessons learned, but 1- “Conduct Ultrasonic Soil Examinations at future questionable sites to attempt to avoid unidentified hazards”, and 2- Perform research to determine who could have installed the tanks and consider legal action to recover the cost of remediation under the CERCLA law.

The OIG recommends that for all upcoming construction sites where known industrial and railway activity occurred, conduct a full investigation of soil conditions and discuss the results in the Environmental Impact Statement. Performing such investigation early may result in additional early costs, but these circumstances will then become known costs of the project and we then will be

better prepared to deal with the conditions and proceed with less delay and costs than waiting.

**D. Spot Check #4 - Purple Line Extension Section 2 Transit Project**

This OIG Spot Check report concerns the Purple Line Extension Section 2 Transit Project (Contract MC1120 MOD-00037), Revision to Average Depth of Seismic Borings Along Wilshire Blvd. on Tunnel Reach 5.

**Facts of Change Order**

See Attachment A Spot Check #4 chart.

**Summary #4**

**Scope of Work** - This Modification is to dig with the boring machine, straight down an additional 50 feet below the 200 feet as specified in the original contract. The purpose is to complete the geotechnical investigation needed to determine the potential placement of additional special tunnel liner. The new depth will improve Metro's ability to find critical information about where the seismic fault may cross the Purple Line Section 2 alignment at a second location.

**Budget** - This Modification was negotiated and the award is \$921,496. The contractor's proposal was \$1,156,887 and the ICE was \$881,014. The award amount was \$235,391 less or 20.34% under the contractor's proposal. The negotiated amount was \$40,482 more or 4.59% over the ICE. Metro has stated that funds for this change are within the approved Budget.

**Schedule** - The new delegation process was utilized for this Modification. The agreed upon scope of work occurred on February 13, 2019. The Modification was executed on March 11, 2019, and was completed in 19 work-days. Using the April V/CM submission date, this Change Order would have gone to the May Board agenda. The scenario of utilizing the Board for approvals on change orders would be 52 work-days later verses the 19 work-days utilizing the delegated authority.

**Recommendation**

The OIG commends the Engineering department for taking additional steps to determine additional the location of seismic fault line in relation to the track alignment for improved safety and long term structural integrity.

**FINANCIAL IMPACT**

Report will have no Financial Impact to the agency.

**Impact to Budget**

- Spot Check #1) \$776,000
- Spot Check #2) \$1,900,000
- Spot Check #3) \$612,408
- Spot Check #4) \$921,496

**IMPLEMENTATION OF STRATEGIC PLAN GOALS**

The recommendations that the Office of Inspector General has put forward support Metro's Strategic Plan Goal #5: Provide responsive, accountable, and trustworthy governance within the Metro



organization. The OIG focuses on fraud, waste, and abuse. For each selected Change Order/Modification reviewed, the OIG evaluates if fraud, waste, or abuse is taking place. We report the background details of the Change Order, and make recommendations consistent with the OIG's Construction Best Practices report February 29, 2016, more particularly focusing on lessons learned, improving efficiencies, and prudent spending. Our goal is to provide rational, trustworthy information to the Board and support the efforts of Metro management to constantly improve and refine its efforts for the benefit of the public. The Office of the Inspector General will continue reporting to the Board the results of Construction Change Order Spot Checks selected from the Program Management Major Project Status Quarterly Report. The next OIG Construction Spot Check report will be in October.

### **NEXT STEPS**

The OIG shall provide every quarter, an on-going spread sheet of recommendations to Program Control. Program Control and Program Management agrees to respond to the recommendations of the OIG within 30 days. The OIG continues to meet periodically to discuss reports, recommendations, and the status of implementation of recommendations, with Project Management and receive updates. The list of OIG recommendations and Metro management responses, including those for January and April, will be an attachment to this OIG July 2019 report.

### **ATTACHMENTS**

- Attachment A - Charts for Spot Checks
- Attachment B - Tracking sheet of Recommendations and Responses
- Attachment C - Power Point for July 2019 Construction Spot Checks

Prepared by: Prepared by: Suzanna Sterling, Construction Specialist Investigator, (213) 244-7368

Reviewed by: Karen Gorman, Inspector General, (213) 244-7337



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Karen Gorman  
Inspector General

**Spot Check #1 - Crenshaw/LAX Transit Project - Contract C0988****Facts of Change Order**

<u>Description of Modification MOD-00426</u> Irrigation Water meters, Park Mesa Medians	
<u>Change Order Dates:</u>	
Scope of Work approved	May 09,2019
Modification Executed	June 03, 2019
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	18 work days
Estimate using former Board approval process Agenda for the July Board	56 work days
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$475,120
Contractor's proposed cost	\$899,819
Negotiated amount	\$776,000
Negotiated amount over ICE	\$300,880
Percentage of negotiated amount over ICE	63%
Amount negotiated under Contractors proposal	\$123,819

**Spot Check #2 – Regional Connector Transit Project - Contract C0980****Facts of Change Order**

<u>Description of Modification MOD-00141.2</u> Flower Street from 4 <sup>th</sup> to 6 <sup>th</sup> – Impacts to SOE: Decking, Utilities and Temporary Drainage	
<u>Change Order Dates:</u>	
Scope of Work approved	March 06 2019
Modification Executed	March 13, 2019
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	10 work days
Estimate using former Board approval process Agenda for the May Board	57 work days
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$1,854,717
Contractor's proposed cost	\$2,048,118
Negotiated amount	\$1,900,000
Negotiated amount over ICE	2.44%
Amount negotiated under Contractors proposal	\$148,118

**Spot Check #3 - Purple Line Extension Section 1 Transit Project - Contract C1078****Facts of Change Order**

<u>Description of Modification MOD-00025</u> Revised Low Impact Development (LID)	
<u>Change Order Dates:</u>	
Scope of Work approved	April 10, 2019
Modification Executed	May 10, 2019
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	23 work days
Estimate using former Board approval process Agenda for the June Board	57 work days
<u>Cost of Change Order:</u>	
Metro independent cost estimate (ICE)	\$598,898
Contractor's proposed cost	\$779,428
Negotiated amount	\$612,408
Negotiated amount above ICE	2.26%
Amount negotiated under Contractors proposal	\$167,020

**Spot Check# 4 - Purple Line Section 2 Transit Project - Contract MC1120****Facts of Change Order**

<u>Description of Modification - MOD-00037</u> Revision to Average Depth of Seismic Borings Along Wilshire Blvd. on Tunnel Reach 5	
<u>Change Order Dates:</u>	
Scope of Work approved	Feb. 13, 2019
Modification Executed	March 11, 2019
<u>Elapsed Time for Executing Change Order:</u>	
Using new delegated process	19 work days
Estimate using former Board approval process	52 work days
<u>Cost of Modification:</u>	
Metro independent cost estimate (ICE)	\$881,014
Contractor's proposed cost	\$1,156,887
Negotiated amount	\$921,496
Negotiated amount over ICE	4.59%
Amount negotiated under Contractors proposal	\$235,391

ATTACHMENT B (Jan. 2019)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
Jan 2019 / #1 C0988 MOD 00335.1 Crenshaw - Cable Transmission System Update - Construction	"The OIG recommends: The schedule negotiations with the contractor be expeditiously concluded so the schedule impacts are minimized."	Not sure what this means. CO's were issued prior to MOD that obligated the contract to commence work - this mitigated schedule impacts. Response could stay as-is I suppose (with edits) as it is relatively benign in nature	Closed
Jan 2019 / #3 C1120 MOD-00026 Purple Line Sect. 2 - Santa Monica Blvd. Bus Layover Design and Construction Changes	The OIG recommends: That Operations and LADOT be provided the scope of work after requests are submitted or "no comments" are received to confirm their requests have been added into the scope prior to the release of the RFP.	Because the OIG's recommendation is for actions to be taken prior to the release of RFPs, it has been passed on to Metro Engineering for consideration in revising Policy DSGN01 DB for future projects.	Metro Engineering (Androush Danielians/ Edwardo Cervantes) have been notified. They provided the below comment: A process will be set in place that will be included in future Specs and contract language for the PE Consultant. The process will require the consultant to submit plans to all applicable agencies (including Metro). Upon receiving comments, the Consultant shall address each comment as to the disposition in a matrix/spreadsheet. The spreadsheet / matrix will then be submitted to each of the commenting agencies. That agency will then be requested to accept the project disposition (via an initial). If the agency is not in acceptance of the disposition, the Consultant via the Project shall work with each agency until that comment disposition is accepted. The final signed off matrix shall then be included in the RFP for the DB (contractor) to complete the path forward based on the agreed upon disposition.

ATTACHMENT B (April 2019)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
<p>April 2019 / #1 C0988 MOD-00402 Crenshaw/LAX - Provisional Payments - Pending Dispute Resolution Fire Rated Cable (multiple) Change Orders</p>	<p>1. The OIG recommends that Metro expeditiously and fairly resolve the litigation with the Contractor. 2. The OIG further recommends that a review team monitor the billings of the Contractor to validate the efficacy of the incentive program as this may become a tool for improving future performance on other projects.</p>	<p>1. Agree, different mechanisms to achieve this being considered. 2. Agree, already being implemented.</p>	
<p>April 2019 / #3 C1045 MOD-00071 Purple Line Sect. 1 - Golder Gas Investigation and Report</p>	<p>The Independent Cost Estimate was not an accurate representation of work stated in the agreed upon scope of work.  The OIG recommends that Metro continue to follow through on the plan for mitigation of gas migration utilizing the Contractor's new report of procedures where known high concentrations of hydrogen sulfide and methane gases exist.</p>	<p>Metro is following thru on the plan. Installation of wells for field testing began in 3/19</p>	
<p>April 2019 / #4 C1045 MOD-00072 Purple Line Sect. 1 - Reach 3 Additional Gas Testing and Assessment</p>	<p>The OIG recommends: 1. In following the new Contractor's report, Work Plan for Exploratory Program to Assess Mitigations for Potential Gas Migration, a. Record all steps that were successful and those that need modification. b. Have information formatted and add to Technical Specifications. c. Have steps and procedures added into Lessons Learned d. Incorporate these findings and procedures into any future bid process where potential gas migration and tunnel boring may occur. 2. Note under Lessons Learned where known high concentrations of hydrogen sulfide and methane gases exist, prior study and geotechnical investigation be completed and included in the bid documents.</p>	<p>a. Plan to record this. Modifications to the testing program in field to be made as appropriate b. This is likely a unique area. A Full report on the program and recommendations is included in the work. Pending the outcome, Technical Specifications would be developed for the Project c. Agree, also see b above d. We note that investigation is in progress now to study gas migrations. Pending outcome, future bid process would include results, including incorporation in Geotechnical Investigation and Technical Requirements 2. Agree. In this instance the area was studied and fully identified/described in the bid documents. Also see 'b' above.</p>	

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
<p>April 2019 / #5 C1045 MOD-00074 Purple Line Sect. 1 - Additional Instrumentation (Project Wide) as requested by LABOE and STS EOR</p>	<p>The OIG recommends that instrumentation bought for this project become property of LA Metro, so that future projects (remainder of the Purple Line Extension 2 and 3) will have instrumentation on hand to immediately install when Support of Excavation for those projects begin.</p>	<p>Metro has made several attempts in the past for Purple Line and Regional to salvage and reuse geotechnical instrumentation. However, passing the instruments between projects offer a number of challenges. These include the following:</p> <ul style="list-style-type: none"> <li>• The Design life of instrumentation equipment is limited given the temporary nature of the work.</li> <li>• Given the diminished value of the used instrumentation equipment it is often abandoned in place. An effort to salvage the equipment may result in increased costs.</li> <li>• The means, methods and performance of shoring, instrumentation and monitoring are left with the Design-builder. Dictating the used instruments would interfere with the selection of means and methods and make Metro responsible for warranting the equipment for the life of the project.</li> <li>• The technology associated with the equipment continues to evolve. Metro may then be obligating the contractor to use obsolete equipment.</li> <li>• Timing and turnover of instrumentation. The contract schedules for Regional, Crenshaw and Purple Line Sections 1, 2 and 3 all overlap. As such, the instrumentation for each project is needed at the same time.</li> <li>• Metro would need to inventory and temporary store the instrumentation equipment. There is a risk that Metro may be storing the equipment permanently or Metro may need to make efforts for their disposal.</li> </ul>	

ATTACHMENT B (July 2019)

OIG REPORT/ SPOT CHECK # MOD #	RECOMMENDATIONS	MANAGEMENT'S RESPONSES	COMPLETION DATE
<p>July 2019 / #1 C0988-MOD-00426 Crenshaw/LAX - Irrigation Water Meters, Park Mesa Medians</p>	<p>The OIG recommends that funds for this work be reimbursed by the City of Los Angeles (offset by funds Metro pays the City for permit work).</p>		
<p>July 2019 / #2 C0980 MOD-00141.2 Regional Connector - Impacts to Support of Excavation: Decking, Utilities and Temporary Drainage</p>	<p>The OIG recognizes the age of the buildings at the site and errors of definitive drawings.</p> <p>The OIG recommends to research on the front end, even drawings to confirm accuracy, to preclude issuing an expensive change order after construction has commenced.</p>		
<p>July 2019 / #3 C1078 MOD-00025 Purple Line Sect. 1 - Revised Low Impact Development (LID)</p>	<p>The OIG recommends that all upcoming sites where known industrial and railway activity occurred, that a full investigation of soils occurs and is stated in the Environmental Impact Statement. Performing such investigation early may result in additional early costs, but these circumstances will then become known costs of the project and may be prepared with less delay and less costs than waiting.</p>		
<p>July 2019 / #4 MC1120 MOD-00037 Purple Line Sect. 2 - Revision to Avg Depth of Seismic Borings along Wilshire Blvd. on Tunnel Reach 5</p>	<p>The OIG recommends the Engineering department for taking additional steps to determine additional the location of seismic fault line in relation to the track alignment for improved safety and long term structural integrity.</p>		

# Office Of Inspector General Construction Change Order Spot Check Report

Presented By  
**Karen Gorman**  
Inspector General



# Construction Spot Check Program

File #  
2019-0495

## OIG Program Description

The OIG Spot Check program focuses on approved change orders that exceed \$500,000. The program includes:

- Review sampling of Change Orders from PMIS
- Review of Program Management's Project Status Report
- Interview Project Managers, Program Controllers, and Procurement Officers
- Review project budget, specifications, any related documentation

## OIG Spot Checks focus on:

- Scope of Work
- Budget
- Schedule Comparison
- Making Recommendations

## Summary of Spot Checks

Four OIG spot checks of change orders show:

- A negotiated amount that was reasonable for the work to be done,
- Allowing the Contractor to immediately order parts and materials,
- Consultant had no overlap in schedule and was able to continue working, and
- Zero Construction delay costs.

July 2019

Construction Committee

Los Angeles County Metropolitan Transportation Authority



# Construction Spot Check Costs

File #  
2019-0495

## Summary of Selected Change Order Costs

Four OIG spot checks of Change Orders / Modifications reported

### **1 change order for Crenshaw/LAX**

❖ Irrigation Water Meters, Park Mesa Medians = \$776,000

### **1 change order for Regional Connector**

❖ Flower Street from 5<sup>th</sup> to 6<sup>th</sup> Streets- Impacts to Support of Excavation= \$1,900,000  
Decking, Utilities and Temporary Drainage

### **1 change order for Purple Line Section 1**

❖ Revised Low Impact Development (LID) = \$612,408

### **1 change order for Purple Line Section 2**

❖ Revision to Average Depth of Seismic Borings Along Wilshire Blvd.  
on Tunnel Reach 5 = \$921,496

# Construction Spot Check Schedule Comparison

Schedule Comparison: new delegated process vs. former Board approval process

PROJECT	Title of Change Order	Time Saved Executed date to Board Mtg.	NEW Delegated Process final SOW to Executed date	Former Board Approval Process
CRENSHAW/LAX	Irrigation Water Meters, Park Mesa Medians	38	18	56
REGIONAL CONNECTOR	Flower Street from 5 <sup>th</sup> to 6 <sup>th</sup> Streets- Impacts to Support of Excavation: Decking, Utilities and Temporary Drainage	47	10	57
WESTSIDE PURPLE LINE SECT 1	Revised Low Impact Development (LID)	34	23	57
WESTSIDE PURPLE LINE SECT 2	Revision to Average Depth of Seismic Borings along Wilshire Blvd. on Tunnel Reach 5	33	19	52



**Board Report**

**File #:** 2019-0434, **File Type:** Informational Report

**Agenda Number:** 31.

**CONSTRUCTION COMMITTEE  
EXECUTIVE MANAGEMENT COMMITTEE  
JULY 18, 2019**

**SUBJECT: TWENTY-EIGHT BY '28 FINANCIAL FORECAST AND CONSTRUCTABILITY ANALYSIS**

**ACTION: RECEIVE AND FILE**

**RECOMMENDATION**

RECEIVE AND FILE financial forecast and constructability analysis to deliver the Twenty-Eight by '28 Initiative.

**ISSUE**

This item is a response to a Board request (Motion 32.4, #2019-0108) during the Board meeting on February 2019 to prepare a detailed year-by-year financial forecast to deliver Twenty-Eight by '28, prioritizing four “pillar projects,” and to conduct a constructability analysis for the pillar projects. Responses to other components of the motion were provided by Metro staff in a May 2019 status report to the Board.

**BACKGROUND**

Motion 32.4 requests a detailed year-by-year potential financial forecast that prioritizes the four pillar projects listed below; assumes public private partnership (P3) efficiencies but not use of local return revenues; public and private financing not in Metro’s existing “toolbox”; and a constructability analysis of the four pillar projects that includes scope, costs, risks, use of alternative modes, and timelines.

Pillar Projects (Measure M Opening Date)

- Gold Line Eastside Extension Phase 2 (FY 2035)
- Green Line Extension to Torrance (FY 2030)
- Sepulveda Transit Corridor (FY 2033)
- West Santa Ana Branch to Downtown LA (FY 2028, FY 2041)

**DISCUSSION**

Metro staff has developed a Pillar Projects Financial Forecast that attempts to identify a viable funding plan for the four projects. The Pillar Projects Financial Forecast is an alternative to the baseline Metro system-wide, or Long Range Transportation Plan (LRTP) financial forecast, which is

the multiyear funding plan for all Metro projects, programs, and services.

Key assumptions made include: all pillar projects are completed by FY 2028, the cost of each of the pillar projects is the same as initially estimated in the Measure M Expenditure Plan (Metro staff is aware that the preliminary cost estimate for certain project alternatives is higher than the Expenditure Plan, but any such alternative has not yet been approved by the Board), local sales tax funding is limited by the respective Expenditure Plan, the use of funds is consistent with Metro Board policy, and state and federal funding are limited to existing grant programs and estimated availability to Metro.

**Potential Financial Forecast Results**

The acceleration of the pillar projects reduces estimated inflation cost of the projects (assuming the project costs are the same as the Measure M Expenditure Plan), but also reduces state and federal grant funding, Measure M allowable funding for inflation, and availability of other Metro sales tax. This results in a construction funding gap as the reduction in project costs is much less than the reduction in funding. The estimated funding gap for the accelerated construction of the pillar projects is \$3.3 billion. The funding gap, or shortfall, by pillar project is shown in the accompanying table.

<b>Estimated Accelerated Capital Cost and Available Funding "Pillar Projects" (\$ in millions)</b>				
Pillar Projects	Total Capital Cost	Metro Local Funding	State and Federal Funding	Funding Surplus/ (Shortfall)
Gold Line Eastside Extension Phase 2	\$ 3,637.7	\$ 2,179.8	\$ 385.7	\$ (1,072.2)
Green Line Extension to Torrance	1,086.0	854.7	231.3	-
Sepulveda Transit Corridor	8,572.6	3,448.6	3,748.1	(1,376.0)
West Santa Ana Branch to Downtown LA	5,565.6	2,513.4	2,155.5	(896.7)
<b>Total</b>	<b>\$18,862.0</b>	<b>\$ 8,996.5</b>	<b>\$ 6,520.7</b>	<b>\$ (3,344.8)</b>

In addition to the construction funding gap, the acceleration of the opening of the pillar projects in FY 2028 will result in higher operating costs of \$300 million per year. A portion of the higher operating costs can be funded from local revenues freed-up from the acceleration of the pillar projects, but there remains a projected shortfall of \$1.2 billion over the 10-year period FY 2029 to FY 2038. The operating shortfall could be partially addressed if Metro transferred capital funds to operations, through an amendment of the Measure M Expenditure Plan that is allowable in FY 2027.

The year-by-year cash flows that show the construction costs, revenues, and funding gap (for the 10-year period FY 2019 to FY 2028) for each pillar project are included in Attachment A. The funding gap is delineated by the row "Required New Revenue." The Metro system-wide revenues and expenditures under the Pillar Projects Financial Forecast (for the 10-year period FY 2019 to FY 2028), as well as a comparison to the baseline Short Range Financial Forecast are included in Attachment B. Metro 20-year system-wide expenditures are included in Attachment C to show the impact of the accelerated operations of the pillar projects.

*Reduction in Funding From Acceleration*

The maximum amount of grant funding available to Metro is expected to be relatively stable over time, in approximately the same amounts each year or multiyear period. This is because the state and federal grants are funded with tax and fee revenue, which are paid to the grantors annually or periodically, and the grantors in turn allocate the funding they receive. It is not typically possible for the grantors to accelerate funding, as the grantors have not yet received the underlying funds nor have they offered to award these future funds early to Metro.

As an example, the following table shows the estimated total statewide grant funding available over the next twenty years for the state’s Transit and Intercity Rail and Capital Program, and the amounts expected to be granted to Metro under the baseline (the Short Range Financial Forecast, September 2018) and the Pillar Projects Financial Forecast. This grant program is well-suited to Metro’s new rail projects as it supports investments that reduce greenhouse gas emissions. The state predicts that total grant funding for this program will grow steadily over time at a rate similar to inflation. Under the baseline forecast, Metro expects to receive about one-half of the state allocation. However, under the Pillar Projects Financial Forecast, Metro would receive about \$1.6 billion less, as twenty years of Metro’s demand is condensed into the ten year period FY 2019-2028, but the supply of funding from this grant program cannot be advanced, as the amount available statewide is dependent on fuel taxes and cap-and-trade proceeds that are received incrementally by the state over time.

<b>Transit and Intercity Rail and Capital Program                      Statewide Funding Estimate and Projected Metro Allocations                      (\$ in millions)</b>				
Period	(1) Statewide Estimate	(2) Short Range Financial Forecast	(3) Pillar Projects Financial Forecast	(3)-(2) Difference
FY 2019-2028	\$ 2,931.1	\$ 1,724.5	\$ 1,994.0	\$ 269.5
FY 2029-2038	3,459.9	1,850.0	-	(1,850.0)
<b>Total</b>	<b>\$ 6,391.0</b>	<b>\$ 3,574.5</b>	<b>\$ 1,994.0</b>	<b>\$ (1,580.5)</b>

The amount of local funding is also reduced if the funding is accelerated. The Measure M funding for the pillar projects can be increased for inflation, but if the project is accelerated the Measure M inflation funding will decrease. Other Metro sales tax revenues are difficult to accelerate because these funds are received incrementally over time and are currently allocated or programmed to the pillar projects ten to twenty years in the future. Metro cannot accelerate this sales tax because Metro has not yet received these funds. Debt financing is an option to leverage future sales tax, but there are limits to the amount of debt financing that can be used, and the debt comes at an interest cost.

*Increased Debt Financing*

The amount of debt financing in the Pillar Projects Financial Forecast is much greater than the baseline Short Range Financial Forecast. The increased debt financing is needed because Metro would require the local funds (e.g., Measure M and Measure R) for construction sooner than Metro

receives them. Metro receives about \$850 million per year (in current dollars) from each of the four local sales tax measures, and this funding cannot be accelerated given Metro receives the sales tax revenue as a percent of taxable sales in Los Angeles County. Metro can borrow against future revenues and incur interest expense, subject to the Metro Debt Policy limits on the amount of sales tax that can be used for debt service each year, and any constraints in existing debt covenants (i.e., contractual provisions relating to outstanding debt that has already been sold to investors). As shown in the following table, in order to fund the accelerated project costs, the Pillar Projects Financial Forecast has \$18.8 billion of debt financing over 10 years, compared to \$8.8 billion in the Short Range Financial Forecast - a \$10.0 billion increase. The higher debt issuance and related interest cost requires that subordinate debt (i.e., debt repaid after Metro’s existing senior lien sales tax bonds) is needed, as there is insufficient debt capacity from the existing senior lien sales tax bonds after the debt issuance. The Pillar Projects Financial Forecast includes \$3.5 billion of subordinate debt, including \$658 million of outstanding Measure R TIFIA loans.

10-Year Comparison of Debt Issuance (FY19-FY28) Baseline vs. Pillar Projects Financial Forecast (\$ in millions)			
Type of Debt	Short Range Financial Forecast	Pillar Projects Financial Forecast	Difference
Measure R	\$ 1,822.5	\$ 3,225.9	\$ 1,403.4
Measure M	3,479.3	9,121.6	5,642.3
Other Sales Tax	2,397.2	2,670.3	273.1
Toll Revenue	104.2	643.6	539.4
Grant Anticipation	989.6	3,104.0	2,114.4
Total	\$ 8,792.8	\$ 18,765.4	\$ 9,972.6

Another factor that may require additional debt financing is the restriction on the beginning year that Measure R and Measure M can be used on certain pillar projects. The Measure R and Measure M ordinances include beginning dates as a way to sequence the funding of projects and ensure that the sales tax is available at various points in time. The Measure R and Measure M Expenditure Plans restrict spending prior to FY 2028 on the pillar projects listed below.

Pillar Projects Affected by Beginning Dates

- Gold Line Eastside Extension Phase 2: Measure M, FY 2029
- Green Line Extension to Torrance: Measure R, FY 2028
- Sepulveda Transit Corridor: Measure R, FY 2030

This restriction may be addressed by debt financing all expenditures prior to the beginning date, and deferring payment of all principal and interest until the beginning date. This is assumed in the Pillar Projects Financial Forecast. However, this approach may require Board approval or acknowledgement of the approach, or possibly amendments to the Measure R and Measure M



ordinances. Should Metro attempt to expend Measure R and Measure M prior to the identified start date (pre-construction expenditures are allowed for Measure M), a workaround will need to be determined.

In addition to sales tax debt, the Pillar Projects Financial Forecast includes a significant amount of New Starts “grant anticipation debt.” This type of debt is needed because New Starts is expected to be paid to Metro in \$100 million annual payments per project. This payment plan could result in as many as thirteen total annual payments, several of which would be received after the project is constructed. As funds are needed for construction costs, the grant anticipation debt provides funding during construction, at an interest cost.

#### *Fiscal Responsibility Policy*

The Board-adopted Fiscal Responsibility Policy requires that the marginal amount of interest from debt issued for a Measure R project that is accelerated in comparison to its April 2010 LRTP schedule is allocated to the project as a cost. The interest cost reduces the amount available for capital spending as the Measure R funding amount for each project in the Expenditure Plan is capped and the allocation of interest takes away from this amount. This policy affects the Gold Line Eastside Extension Phase 2, Green Line Extension to Torrance, and Sepulveda Transit Corridor. The policy requires that \$635.6 million of interest cost is allocated to the pillar projects.

#### New Public and Private Financing; P3 Efficiencies

In our May 2019 status report (#2019-0224) to the Board on the financial forecast and constructability analysis of the Twenty-Eight by '28 Initiative, Metro staff recommended against the assumption of new revenues that do not currently exist or have not yet been enacted, as this would subject Metro to risks that the revenues are not realized and the projects cannot be completed. These types of new revenues are not included in the Pillar Projects Financial Forecast. However, Metro can facilitate the creation of the new funding sources that could ultimately accelerate the pillar projects, and may be able to incorporate these new revenues in our future funding plans should the new revenues come to fruition.

The May 2019 status report also discussed the reasonableness of including P3 cost saving efficiencies. At the current stage of development of the pillar projects, there is not sufficient project definition to apply technical concepts that would result in relative savings or efficiencies, and they are not included in the Pillar Projects Financial Forecast.

#### Constructability Analysis

Metro staff has been advancing constructability of the four pillar projects per item D of the February Board Motion. The project teams are developing scopes, schedules, cost estimates, risk analyses, and P3 status for the respective projects. Staff has identified a number of opportunities to accelerate these projects to support an opening for revenue service by the end of FY2028.

All four pillar projects are in the planning and environmental phase and scheduled to be environmentally cleared over the next four years and transition into engineering, design and construction. In order for some of these projects to have a chance of completion and revenue operations by 2028, the environmental and engineering work must be accelerated for construction to begin no later than calendar year 2023. Any additional requirement imposed on these projects will



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have a material effect on realizing this goal. During the construction phase interactions with third parties such as multiple cities along the alignment and a shared corridor with other governmental and private entities may also impact the schedule.

Project scopes, schedules, cost estimates and risk analyses are being compiled and will continue as the project development advances for the pillar projects. Attachment D details each of these items.

Critical path for achieving construction start is the environmental clearance, preliminary engineering and procurement processes that lead to award of construction contracts. The Board can help accelerate these initial phases as they are highly dependent on local, state and federal stakeholders to provide timely review and approval of environmental documents, conceptual design, cost estimates and preliminary engineering. Three key items that will help accelerate project schedules are: reducing the duration and number of iterations for regulatory agency reviews and approvals, expediting third party permits/design reviews and reaching the Record of Decision as quickly as possible.

Metro staff is currently working with the Federal Transit Administration (FTA) to provide support staff that will help expedite reviews. Additionally, working with FTA partners such as State Historic Preservation Offices (SHPO) and permitting agencies such as U.S. Army Corps of Engineers to reduce the standard review turnaround times could improve project environmental and engineering timelines by several months.

West Santa Ana Branch is an example of time savings through expeditious review cycles. During the FTA review, Metro staff was able to work directly with FTA and SHPO to resolve questions. The resulting time savings was a minimum 3 months. This type of collaboration and partnership must be applied to each of the applicable pillar projects to improve the schedules.

Assistance from the Board is critical to encourage our federal, state and local partners to reduce review cycle times and work collaboratively with Metro staff to resolve questions or concerns as they arise. Staff is evaluating the current pillar project schedules to identify potential efficiencies in the design and construction phases. Opportunities to reduce overall duration by working on multiple project phases concurrently will be another key strategy for accelerating projects. Where possible, engineering must be pursued in parallel with the environmental process to enable construction to begin by 2023. Risks and additional costs associated with this approach are evident as engineering must be applied at an earlier phase in the environmental process to multiple alternatives. Early engineering will identify utility relocations, geotechnical unknowns, freight relocations, and tunneling segments that will also be key to completing on time and within budget.

Current market conditions are increasing project bid prices which, in turn, is impacting available funding. As provided to the Board in the May 2018 Los Angeles Construction Market Analysis, over the next 5 to 10 year period projections indicate there will be more construction work than workers and firms available to do the work at a reasonable cost. Given the higher bids and the complexity of the pillar projects, applying the Metro Cost Management policy will be required.

### *Potential Operating Segment Analysis*

In line with Metro's approved Cost Management Policy and consistent with past Metro construction

efforts, accelerated delivery may require each of the pillar projects to be evaluated for a phased construction approach through Operating Segments in order to build as much of the project as possible to maximize mobility benefits in time for the 2028 Olympics.

In order to achieve revenue service within current funding and schedule constraints, Operating Segments may be identified as part of the environmental phase to be analyzed for public and stakeholder consideration, in addition to the full project scope. The OS options under consideration will be developed based on physical infrastructure limits and barriers, major origin/destinations, market trends, service to high activity areas, and operational feasibility. The EIS/EIR will environmentally clear the entire project and the OS options.

As project definition advances and capital construction costs are better understood for each potential operating segment, alternative funding strategy options are also being developed iteratively based on (a) the amount of funding allocated from Measure M, (b) the amount of other local, state, and federal funds that can be made available by FY 2028, (c) current cost estimates for the end-to-end project and potential minimum operating segments, and (d) the extent of accelerated delivery. The funding strategy to deliver the most project scope by 2028 will likely involve more aggressive debt and grant assumptions, as well as the reallocation of funding from other Metro purposes.

For the pillar projects where Operating Segments are considered, Board decision will be required for authorization of a segmented approach and associated funding strategies.

#### Actions That Metro Can Take

This report identifies a significant funding gap to construct and operate the pillar projects, and significant challenges to complete the environmental process and construction on a Twenty-Eight by '28 accelerated schedule. In order to increase the likelihood that the pillar projects can be delivered by FY 2028, Metro can take the following steps to pursue new revenues that will address the projected funding gap, reevaluate Board policy that could increase resources for the pillar projects, and change Metro's project delivery process.

#### *Pursue new revenues:*

- Evaluate and consider congestion pricing
- Evaluate and consider transportation network company fees
- Evaluate and consider surplus toll revenue from new Express Lanes
- Advocate for creation of state tax credit bonds
- Advocate for implementation of new federal transportation funding opportunities

#### *Reevaluate Board policy:*

- Evaluate and consider changes to Fiscal Responsibility Policy
- Evaluate and consider changes to Early Project Delivery Strategy Policy
- Evaluate and consider changes to Measure M funds availability date
- Decide which projects are most strategic for Metro and only federalize those
- Simplify Metro procurement rules

- Adopt a policy requiring the Board to maintain focus on the primary project objectives, avoiding “ornaments” and making findings for significant additions to projects

*Changes to project delivery process:*

- Work with local, state, and federal stakeholders to provide timely review
- Support local partner officials in being leaders in their community and the region in managing and guiding significant change
- Metro to work on multiple phases concurrently
- Identify when to initiate preparatory steps to be ready for the next milestone and similarly plan ahead to segment project delivery for early wins
- Employ standards, processes and procedures guidance to support this complex, large program
- Proactively identify potential issues to address early in the process and retrospectively apply lessons learned from prior projects
- Provide for ongoing professional development and hands-on project experience

*Changes to regulatory process:*

- Adopt reforms to greatly reduce the ease and frivolity of litigation
- Clearly establish deference to the lead agency’s environmental document and preclude judicial invalidation of a project approval for procedural remedies or additional analysis
- Take a programmatic approach to permitting and require the issuance of permits by partner agencies within a specified timeframe
- Pilot regulatory reforms to facilitate preparedness for the 2028 Olympic Games

**FINANCIAL IMPACT**

This is an information item and does not have a direct financial impact on Metro. The implementation of accelerated funding for major capital projects would have a financial impact on Metro, and these impacts will be identified in the event the Board considers approval of the funding plans.

**Impact to Budget**

This is an information item and does not impact the FY 2020 budget.

**IMPLEMENTATION OF STRATEGIC PLAN GOALS**

This item helps ensure fiscal responsibility in how funding determinations are made and transparency in the agency’s investment decisions (Goal #5).

**ATTACHMENTS**

Attachment A - Project Profiles, Pillar Projects

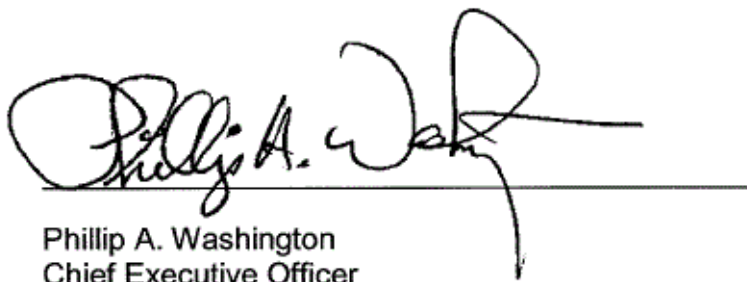
Attachment B - 10-Year Revenue and Expenditure Comparison

Attachment C - 20-Year Operating Expenses

Attachment D - Constructability Analysis - Project Information

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Gold Line Eastside Extension Phase 2

10-YEAR CASH FLOW (\$ in millions)	Years Prior-'28	Prior Years	2018 2019	2019 2020	2020 2021	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027	2027 2028
<b>USES OF FUNDS</b>												
Construction	\$ 3,315.6	-	-	-	-	118.0	182.3	313.0	483.6	664.1	1,026.1	528.4
Preconstruction costs	\$ 322.1	28.3	6.9	27.3	84.3	115.7	59.6	-	-	-	-	-
<b>TOTAL USES</b>	<b>\$ 3,637.7</b>	<b>\$ 28.3</b>	<b>\$ 6.9</b>	<b>\$ 27.3</b>	<b>\$ 84.3</b>	<b>\$ 233.8</b>	<b>\$ 241.9</b>	<b>\$ 313.0</b>	<b>\$ 483.6</b>	<b>\$ 664.1</b>	<b>\$ 1,026.1</b>	<b>\$ 528.4</b>
<b>SOURCES OF FUNDS</b>												
<b>Federal Revenue</b>												
Surface Transportation Block Grant Program (STBGP) formerly RSTP	\$ 11.2	-	-	-	-	11.2	-	-	-	-	-	-
Congestion Mitigation & Air Quality Program (CMAQ)	\$ 13.0	-	-	-	-	13.0	-	-	-	-	-	-
<b>Federal Revenue Subtotal</b>	<b>\$ 24.3</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 24.3</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Local Revenue</b>												
Prop A - Rail Development Account (35%)	\$ 3.5	3.5	-	-	-	-	-	-	-	-	-	-
Measure R - Transit Capital (35%)	\$ 635.4	0.7	-	-	-	209.5	212.1	213.1	-	-	-	-
Prop C - Discretionary (40%)	\$ 3.4	3.4	-	-	-	-	-	-	-	-	-	-
Prop C - Transit-Related Highway (25%)	\$ 315.6	0.8	-	-	-	-	29.8	29.8	27.1	4.6	169.6	53.8
Local Agency Transit Project Contributions	\$ 109.1	-	-	-	-	-	-	-	69.6	39.6	-	-
Repayment of Capital Project Loans (Fund 3562)	\$ 26.8	19.8	6.9	-	-	-	-	-	-	-	-	-
Measure M - Transit Construction (35%)	\$ 1,086.0	-	-	27.3	84.3	-	-	-	-	388.4	191.4	394.6
<b>Local Revenue Subtotal</b>	<b>\$ 2,179.8</b>	<b>\$ 28.3</b>	<b>\$ 6.9</b>	<b>\$ 27.3</b>	<b>\$ 84.3</b>	<b>\$ 209.5</b>	<b>\$ 241.9</b>	<b>\$ 242.9</b>	<b>\$ 96.7</b>	<b>\$ 432.6</b>	<b>\$ 361.0</b>	<b>\$ 448.4</b>
<b>State Revenue</b>												
Transit and Intercity Rail Capital Program (TIRCP)	\$ 80.0	-	-	-	-	-	-	-	-	-	-	80.0
Regional Improvement Program Funds (RIP)	\$ 136.4	-	-	-	-	-	-	-	36.1	50.0	50.3	-
SB1 - Solutions for Congested Corridors Program	\$ 145.0	-	-	-	-	-	-	-	75.0	70.0	-	-
SB1 - Local Partnership Program	\$ -	-	-	-	-	-	-	-	-	-	-	-
<b>State Revenue Subtotal</b>	<b>\$ 361.4</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 111.1</b>	<b>\$ 120.0</b>	<b>\$ 50.3</b>	<b>\$ 80.0</b>
<b>Required New Revenue</b>	<b>\$ 1,072.2</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 70.1</b>	<b>\$ 275.8</b>	<b>\$ 111.6</b>	<b>\$ 614.7</b>	<b>\$ -</b>
<b>TOTAL SOURCES</b>	<b>\$ 3,637.7</b>	<b>\$ 28.3</b>	<b>\$ 6.9</b>	<b>\$ 27.3</b>	<b>\$ 84.3</b>	<b>\$ 233.8</b>	<b>\$ 241.9</b>	<b>\$ 313.0</b>	<b>\$ 483.6</b>	<b>\$ 664.1</b>	<b>\$ 1,026.1</b>	<b>\$ 528.4</b>

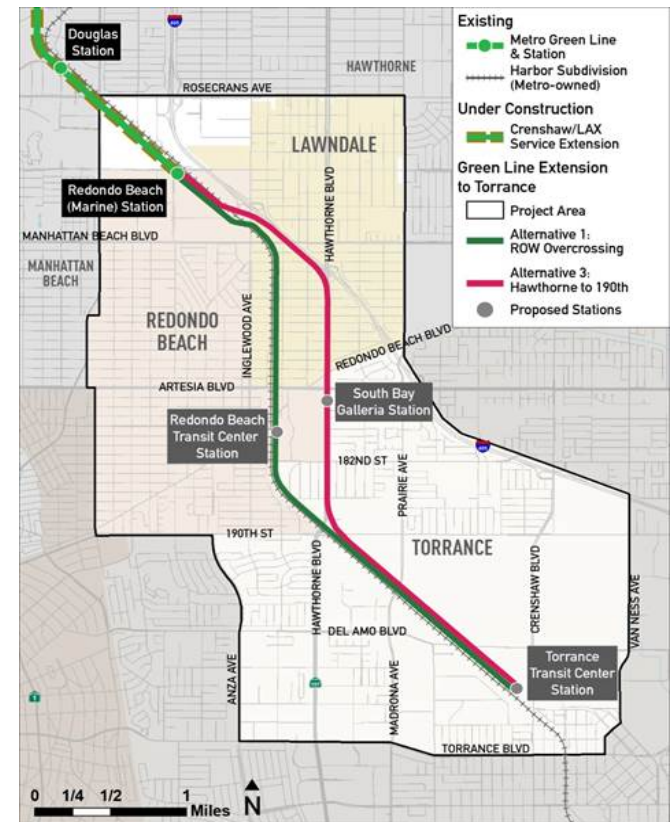
<b>Total Project Cost:</b>	"One Alignment" project with \$3,000 million cost per Measure M (2015\$). Life of Project budget pending.
<b>Description:</b>	Extends Gold Line Rail east from Atlantic Station. Two alignments are being studied - one along SR-60 to South El Monte, and the other along Washington Bl to Whittier.
<b>Funding Status:</b>	Funding for this project is part of the Measure M Expenditure Plan, with \$1,086 million (2015\$) allocated, beginning FY2029 for construction, and Measure R Expenditure Plan with \$1,271 million beginning FY2022. Grant funded has yet to be awarded.
<b>Subregion:</b>	Gateway Cities/ San Gabriel Valley
<b>Metro Project Number:</b>	#460232



## Green Line Extension to Torrance

10-YEAR CASH FLOW (\$ in millions)	Years Prior-'28	Prior Years	2018 2019	2019 2020	2020 2021	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027	2027 2028
<b>USES OF FUNDS</b>												
Construction costs	\$ 999.9	-	-	-	-	-	-	46.5	143.6	246.6	406.3	156.9
Preconstruction costs	\$ 86.1	13.7	0.7	1.2	0.9	2.0	2.1	20.0	32.9	12.7	-	-
<b>TOTAL USES</b>	<b>\$ 1,086.0</b>	<b>\$ 13.7</b>	<b>\$ 0.7</b>	<b>\$ 1.2</b>	<b>\$ 0.9</b>	<b>\$ 2.0</b>	<b>\$ 2.1</b>	<b>\$ 66.4</b>	<b>\$ 176.5</b>	<b>\$ 259.3</b>	<b>\$ 406.3</b>	<b>\$ 156.9</b>
<b>SOURCES OF FUNDS</b>												
<b>Local Revenue</b>												
Measure R - Transit Capital (35%)	\$ 38.5	-	-	-	-	-	-	-	38.5	-	-	-
Prop C - Transit-Related Highway (25%)	\$ 5.2	5.2	-	-	-	-	-	-	-	-	-	-
Local Agency Transit Project Contributions	\$ 32.6	-	-	-	-	-	-	-	-	32.6	-	-
Repayment of Capital Project Loans (Fund 3562)	\$ 10.7	8.5	0.7	1.2	0.3	-	-	-	-	-	-	-
Measure M -Transit Construction (35%)	\$ 767.8	-	-	-	0.6	2.0	2.1	20.0	32.9	146.9	406.3	156.9
<b>Local Revenue Subtotal</b>	<b>\$ 854.7</b>	<b>\$ 13.7</b>	<b>\$ 0.7</b>	<b>\$ 1.2</b>	<b>\$ 0.9</b>	<b>\$ 2.0</b>	<b>\$ 2.1</b>	<b>\$ 20.0</b>	<b>\$ 71.4</b>	<b>\$ 179.5</b>	<b>\$ 406.3</b>	<b>\$ 156.9</b>
<b>State Revenue</b>												
Transit and Intercity Rail Capital Program (TIRCP)	\$ 231.3	-	-	-	-	-	-	46.4	105.1	\$ 79.8	-	-
<b>State Revenue Subtotal</b>	<b>\$ 231.3</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 46.4</b>	<b>\$ 105.1</b>	<b>\$ 79.8</b>	<b>\$ -</b>	<b>\$ -</b>
<b>TOTAL SOURCES</b>	<b>\$ 1,086.0</b>	<b>\$ 13.7</b>	<b>\$ 0.7</b>	<b>\$ 1.2</b>	<b>\$ 0.9</b>	<b>\$ 2.0</b>	<b>\$ 2.1</b>	<b>\$ 66.4</b>	<b>\$ 176.5</b>	<b>\$ 259.3</b>	<b>\$ 406.3</b>	<b>\$ 156.9</b>

<b>Total Project Cost:</b>	Life of Project budget still to be established. Measure M estimate is \$891 million (2015\$).
<b>Description:</b>	This extension will provide congestion relief along the I-405 corridor. It will also improve mobility in southwestern LA County by accessing the regional rail network through connections to the Metro Blue, Expo, and Crenshaw Lines.
<b>Funding Status:</b>	Per Measure M, the Project has a \$619 million (2015\$) allocation, plus inflation adjustments, beginning in FY2026 for construction, and Measure R allocation of \$272 million beginning FY2028. Received award of \$231.3 million TIRCP grant and \$19.7 million of SB1 LPP in Feb, 2018.
<b>Subregion:</b>	South Bay
<b>Metro Project Number:</b>	#460304



## Sepulveda Transit Corridor

10-YEAR CASH FLOW (\$ in millions)	Years Prior-'28	Prior Years	2018 2019	2019 2020	2020 2021	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027	2027 2028
<b>USES OF FUNDS</b>												
Construction costs	\$ 6,270.9	-	-	-	-	223.2	344.9	592.0	914.6	1,256.1	1,940.7	999.4
Preconstruction costs	\$ 601.8	1.8	4.3	192.7	198.5	204.5	-	-	-	-	-	-
Grant Anticipation Debt Service	\$ 200.0	-	-	-	-	-	-	-	-	-	100.0	100.0
<b>TOTAL USES</b>	<b>\$ 7,072.6</b>	<b>\$ 1.8</b>	<b>\$ 4.3</b>	<b>\$ 192.7</b>	<b>\$ 198.5</b>	<b>\$ 427.7</b>	<b>\$ 344.9</b>	<b>\$ 592.0</b>	<b>\$ 914.6</b>	<b>\$ 1,256.1</b>	<b>\$ 2,040.7</b>	<b>\$ 1,099.4</b>
<b>SOURCES OF FUNDS</b>												
<b>Federal Revenue</b>												
Section 5309 New Starts	\$ 215.0	-	-	-	-	-	-	-	-	15.0	100.0	100.0
Capital Grant Receipt Revenue Bonds	\$ 1,367.1	-	-	-	-	-	-	-	-	-	700.0	667.1
<b>Federal Revenue Subtotal</b>	<b>\$ 1,582.1</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 15.0</b>	<b>\$ 800.0</b>	<b>\$ 767.1</b>
<b>Local Revenue</b>												
Prop A - Rail Development Account (35%)	\$ 18.0	-	-	-	-	-	6.0	6.0	6.0	-	-	-
Measure R - Transit Capital (35%)	\$ 39.8	-	-	-	-	-	-	-	-	-	39.8	-
Prop C - Discretionary (40%)	\$ 67.0	-	-	-	-	-	14.7	34.0	18.3	-	-	-
Local Agency Transit Project Contributions	\$ 206.2	-	-	-	-	-	-	-	206.2	-	-	-
Measure M - Transit Construction (35%)	\$ 2,540.0	-	-	187.7	193.5	204.5	-	402.0	684.1	356.3	344.6	167.3
Toll Revenue - Sepulveda Pass	\$ 547.4	-	-	-	-	-	-	-	-	197.9	349.5	-
Transportation Development Act (TDA) - Admin	\$ 0.5	0.5	-	-	-	-	-	-	-	-	-	-
Measure R - Admin (1.5%)	\$ 24.0	0.3	4.3	4.3	5.0	5.0	5.0	-	-	-	-	-
Prop C - Admin (1.5%)	\$ 5.7	-	-	0.7	-	-	5.0	-	-	-	-	-
<b>Local Revenue Subtotal</b>	<b>\$ 3,448.6</b>	<b>\$ 0.8</b>	<b>\$ 4.3</b>	<b>\$ 192.7</b>	<b>\$ 198.5</b>	<b>\$ 209.5</b>	<b>\$ 30.7</b>	<b>\$ 442.0</b>	<b>\$ 914.6</b>	<b>\$ 554.2</b>	<b>\$ 733.9</b>	<b>\$ 167.3</b>
<b>State Revenue</b>												
Transit and Intercity Rail Capital Program (TIRCP)	\$ 150.0	-	-	-	-	-	-	150.0	-	-	-	-
Regional Improvement Program Funds (RIP)	\$ 141.0	1.0	-	-	-	-	-	-	-	50.0	50.0	40.0
SB1 - Solutions for Congested Corridors Program	\$ 375.0	-	-	-	-	-	-	-	-	125.0	125.0	125.0
<b>State Revenue Subtotal</b>	<b>\$ 666.0</b>	<b>\$ 1.0</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 150.0</b>	<b>\$ -</b>	<b>\$ 175.0</b>	<b>\$ 175.0</b>	<b>\$ 165.0</b>
<b>Required New Revenue</b>	<b>\$ 1,376.0</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 218.2</b>	<b>\$ 314.1</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 511.9</b>	<b>\$ 331.7</b>	<b>\$ -</b>
<b>TOTAL SOURCES</b>	<b>\$ 7,072.6</b>	<b>\$ 1.8</b>	<b>\$ 4.3</b>	<b>\$ 192.7</b>	<b>\$ 198.5</b>	<b>\$ 427.7</b>	<b>\$ 344.9</b>	<b>\$ 592.0</b>	<b>\$ 914.6</b>	<b>\$ 1,256.1</b>	<b>\$ 2,040.7</b>	<b>\$ 1,099.4</b>

<b>Total Project Cost:</b>	Phase 2 project with \$5,674 million cost per Measure M (2015\$). Life of Project budget pending.
<b>Description:</b>	Phase 2 from San Fernando Valley to Westwood with connections to existing and planned Metro bus and rail lines, including the Orange, Purple and Expo Lines. A feasibility study to identify rail alternatives is underway with work concluding in Summer/ Fall 2019.
<b>Funding Status:</b>	Funding limit of \$1,000 million in Measure R for "San Fernando Valley I-405 Corridor Connection" beginning FY2030; \$3,134 million in LRTP revenue, and \$2,540 million in Measure M plus inflation for "Sepulveda Pass Transit Corridor (Ph 2)" beginning FY2024 for construction; \$6.7 million feasibility study grant awarded Nov 2017.
<b>Subregion:</b>	San Fernando Valley, Westside
<b>Metro Project Number:</b>	#460305

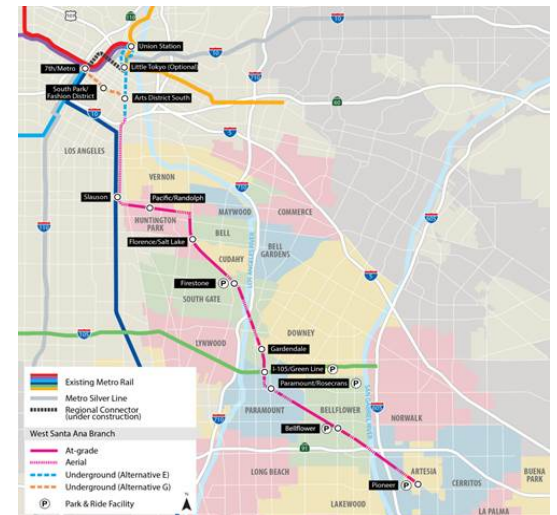




## West Santa Ana Branch to Downtown LA

10-YEAR CASH FLOW (\$ in millions)	Years Prior-'28	Prior Years	2018 2019	2019 2020	2020 2021	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027	2027 2028
<b>USES OF FUNDS</b>												
Construction costs	\$ 4,420.8	-	-	-	-	157.4	243.1	417.3	644.8	885.5	1,368.1	704.6
Preconstruction costs	\$ 426.0	8.8	24.8	36.0	194.4	162.0	-	-	-	-	-	-
Grant Anticipation Debt Service	\$ 200.0	-	-	-	-	-	-	-	-	-	100.0	100.0
<b>TOTAL USES</b>	<b>\$ 5,046.7</b>	<b>\$ 8.8</b>	<b>\$ 24.8</b>	<b>\$ 36.0</b>	<b>\$ 194.4</b>	<b>\$ 319.3</b>	<b>\$ 243.1</b>	<b>\$ 417.3</b>	<b>\$ 644.8</b>	<b>\$ 885.5</b>	<b>\$ 1,468.1</b>	<b>\$ 804.6</b>
<b>SOURCES OF FUNDS</b>												
<b>Federal Revenue</b>												
Section 5309 New Starts	\$ 681.1	-	-	-	-	81.1	100.0	100.0	100.0	100.0	100.0	100.0
Capital Grant Receipt Revenue Bonds	\$ 630.4	-	-	-	-	-	-	-	-	-	425.0	205.3
Other Federal Funds	\$ 1.3	-	1.3	-	-	-	-	-	-	-	-	-
<b>Federal Revenue Subtotal</b>	<b>\$ 1,312.7</b>	<b>\$ -</b>	<b>\$ 1.3</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 81.1</b>	<b>\$ 100.0</b>	<b>\$ 100.0</b>	<b>\$ 100.0</b>	<b>\$ 100.0</b>	<b>\$ 525.0</b>	<b>\$ 305.3</b>
<b>Local Revenue</b>												
Measure R - Transit Capital (35%)	\$ 240.0	7.4	-	24.5	19.5	-	-	-	79.2	108.4	1.0	-
Measure R - Highway Projects (20%)	\$ 108.4	-	-	-	-	-	-	1.3	10.5	38.0	54.0	4.7
Prop C - Discretionary (40%)	\$ 234.8	-	-	-	-	-	-	-	-	62.0	72.8	100.0
Prop C - Transit-Related Highway (25%)	\$ 3.9	1.4	-	-	2.6	-	-	-	-	-	-	-
Local Agency Transit Project Contributions	\$ 145.4	-	-	-	-	-	-	-	145.4	-	-	-
Measure M -Transit Construction (35%)	\$ 1,780.3	-	10.6	-	15.0	40.7	62.9	6.7	223.7	352.5	673.5	394.6
Measure R - Admin (1.5%)	\$ 0.5	-	0.5	-	-	-	-	-	-	-	-	-
<b>Local Revenue Subtotal</b>	<b>\$ 2,513.4</b>	<b>\$ 8.8</b>	<b>\$ 11.1</b>	<b>\$ 24.5</b>	<b>\$ 37.1</b>	<b>\$ 40.7</b>	<b>\$ 62.9</b>	<b>\$ 8.0</b>	<b>\$ 458.8</b>	<b>\$ 560.9</b>	<b>\$ 801.3</b>	<b>\$ 499.2</b>
<b>State Revenue</b>												
Transit and Intercity Rail Capital Program (TIRCP)	\$ 300.0	-	-	-	-	-	-	100.0	10.3	\$ 100.0	89.7	-
SB1 - Local Partnership Program	\$ 23.9	-	12.4	11.6	-	-	-	-	-	\$ -	-	-
<b>State Revenue Subtotal</b>	<b>\$ 323.9</b>	<b>\$ -</b>	<b>\$ 12.4</b>	<b>\$ 11.6</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 100.0</b>	<b>\$ 10.3</b>	<b>\$ 100.0</b>	<b>\$ 89.7</b>	<b>\$ -</b>
<b>Required New Revenue</b>	<b>\$ 896.7</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 157.3</b>	<b>\$ 197.5</b>	<b>\$ 80.2</b>	<b>\$ 209.4</b>	<b>\$ 75.7</b>	<b>\$ 233.0</b>	<b>\$ 52.1</b>	<b>\$ -</b>
<b>TOTAL SOURCES</b>	<b>\$ 5,046.7</b>	<b>\$ 8.8</b>	<b>\$ 24.8</b>	<b>\$ 36.0</b>	<b>\$ 194.4</b>	<b>\$ 319.3</b>	<b>\$ 243.1</b>	<b>\$ 417.3</b>	<b>\$ 644.8</b>	<b>\$ 993.9</b>	<b>\$ 1,468.1</b>	<b>\$ 804.5</b>

<b>Total Project Cost (First Phase):</b>	Combination of FY 2028 and FY 2041 segments totaling \$4 billion (2015\$) per Ordinance. Life of Project budget pending.
<b>Description:</b>	New light rail transit line that would connect downtown Los Angeles to southeast LA County on 20-mile corridor. There are two segments identified in Measure M.
<b>Funding Status:</b>	Measure M funding of \$1,435 million (2015\$) for both segments, plus inflation adjustments. Measure R funding of \$240 million, plus \$108 million that was not used on the I-5 South HOV Lanes from I-605 to Orange County Line. Awarded TIRCP funding of \$300 million in April 2018; allocated \$24 million from Local Partnership Program.
<b>Subregion:</b>	Central City, Gateway Cities
<b>Metro Project Number:</b>	#460201





Revenues by Major Category  
Pillar Projects Financial Forecast

(\$ in millions)	TOTAL (FY19-FY28)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>SALES TAX, TDA, STA REVENUES</b>											
Proposition A	\$ 7,640.5	643.6	666.3	692.9	718.5	744.9	773.2	802.9	834.2	865.4	898.6
Proposition C	\$ 8,086.8	701.3	701.7	730.4	756.8	785.1	815.6	848.0	881.5	914.2	952.2
Measure R	\$ 8,557.8	737.3	744.7	774.4	803.1	832.6	864.2	897.4	932.4	967.2	1,004.4
Measure M	\$ 8,441.1	711.0	736.1	765.5	793.8	823.0	854.2	887.1	921.6	956.0	992.8
Transportation Development Act(TDA)	\$ 4,598.2	386.3	401.2	417.2	432.6	448.5	465.4	483.3	502.1	520.8	540.8
State Transit Assistance (STA)	\$ 1,899.5	167.2	169.7	179.6	186.2	189.3	193.4	198.3	202.7	206.9	206.3
<b>Subtotal, Sales Tax, TDA, STA Revenues</b>	<b>\$ 39,224.0</b>	<b>\$ 3,346.6</b>	<b>\$ 3,419.6</b>	<b>\$ 3,560.1</b>	<b>\$ 3,691.0</b>	<b>\$ 3,823.5</b>	<b>\$ 3,966.1</b>	<b>\$ 4,117.0</b>	<b>\$ 4,274.5</b>	<b>\$ 4,430.6</b>	<b>\$ 4,595.1</b>
<b>OPERATING &amp; OTHER REVENUE</b>											
Passenger Fares	\$ 3,984.9	301.2	311.3	338.6	356.0	377.4	410.3	424.1	450.9	472.0	543.1
ExpressLanes Tolls	\$ 657.0	62.8	63.4	64.1	64.7	65.3	66.0	66.7	67.3	68.0	68.7
Advertising	\$ 304.1	24.7	25.5	26.5	27.1	28.7	34.2	34.2	34.3	34.3	34.4
Other Revenue	\$ 1,761.6	\$ 155.6	\$ 102.2	\$ 89.6	\$ 128.3	\$ 157.3	\$ 237.3	\$ 525.8	\$ 175.1	\$ 96.1	\$ 94.3
<b>Subtotal, Operating &amp; Other Revenue</b>	<b>\$ 6,707.6</b>	<b>\$ 544.4</b>	<b>\$ 502.5</b>	<b>\$ 518.7</b>	<b>\$ 576.2</b>	<b>\$ 628.7</b>	<b>\$ 747.8</b>	<b>\$ 1,050.8</b>	<b>\$ 727.6</b>	<b>\$ 670.4</b>	<b>\$ 740.5</b>
<b>CAPITAL &amp; DEBT FINANCING RESOURCES</b>											
Grant Receipts	\$ 21,484.3	1,862.0	1,848.7	2,161.1	1,846.0	1,951.5	1,917.5	2,051.1	2,183.1	3,059.0	2,604.2
Bond Proceeds and TIFIA	\$ 15,695.3	506.2	2,013.6	1,134.4	1,114.0	936.8	1,855.4	2,175.8	2,852.5	2,292.7	813.9
Prior Year Carryover	\$ 261.0	446.5	(337.0)	355.7	227.4	152.6	(10.6)	(202.6)	(723.0)	83.0	269.0
<b>Subtotal, Capital &amp; Debt Financing Resources</b>	<b>\$ 37,440.6</b>	<b>\$ 2,814.7</b>	<b>\$ 3,525.4</b>	<b>\$ 3,651.2</b>	<b>\$ 3,187.4</b>	<b>\$ 3,041.0</b>	<b>\$ 3,762.3</b>	<b>\$ 4,024.3</b>	<b>\$ 4,312.6</b>	<b>\$ 5,434.7</b>	<b>\$ 3,687.1</b>
<b>Required New Revenue <sup>(1)</sup></b>	<b>\$ 3,562.6</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 157.3</b>	<b>\$ 415.7</b>	<b>\$ 394.3</b>	<b>\$ 279.4</b>	<b>\$ 393.3</b>	<b>\$ 755.3</b>	<b>\$ 1,048.6</b>	<b>\$ 118.8</b>
<b>TOTAL REVENUES</b>	<b>\$ 86,934.8</b>	<b>\$ 6,705.7</b>	<b>\$ 7,447.5</b>	<b>\$ 7,887.2</b>	<b>\$ 7,870.3</b>	<b>\$ 7,887.5</b>	<b>\$ 8,755.6</b>	<b>\$ 9,585.4</b>	<b>\$ 10,070.0</b>	<b>\$ 11,584.3</b>	<b>\$ 9,141.4</b>

Notes:

1. Unidentified funding required for Pillar Projects and other impacted Metro projects.

**Revenues by Major Category**  
**Short Range Financial Forecast**

(\$ in millions)	TOTAL (FY19-FY28)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>SALES TAX, TDA, STA REVENUES</b>											
Proposition A	\$ 7,640.5	643.6	666.3	692.9	718.5	744.9	773.2	802.9	834.2	865.4	898.6
Proposition C	\$ 8,086.8	701.3	701.7	730.4	756.8	785.1	815.6	848.0	881.5	914.2	952.2
Measure R	\$ 8,557.8	737.3	744.7	774.4	803.1	832.6	864.2	897.4	932.4	967.2	1,004.4
Measure M	\$ 8,441.1	711.0	736.1	765.5	793.8	823.0	854.2	887.1	921.6	956.0	992.8
Transportation Development Act (TDA)	\$ 4,598.2	386.3	401.2	417.2	432.6	448.5	465.4	483.3	502.1	520.8	540.8
State Transit Assistance (STA)	\$ 1,899.5	167.2	169.7	179.6	186.2	189.3	193.4	198.3	202.7	206.9	206.3
<b>Subtotal, Sales Tax, TDA, STA Revenues</b>	<b>\$ 39,224.0</b>	<b>\$ 3,346.6</b>	<b>\$ 3,419.6</b>	<b>\$ 3,560.1</b>	<b>\$ 3,691.0</b>	<b>\$ 3,823.5</b>	<b>\$ 3,966.1</b>	<b>\$ 4,117.0</b>	<b>\$ 4,274.5</b>	<b>\$ 4,430.6</b>	<b>\$ 4,595.1</b>
<b>OPERATING &amp; OTHER REVENUE</b>											
Passenger Fares	\$ 3,973.2	302.6	320.7	340.8	361.3	377.4	413.2	425.1	451.6	474.4	506.2
ExpressLanes Tolls	\$ 657.0	62.8	63.4	64.1	64.7	65.3	66.0	66.7	67.3	68.0	68.7
Advertising	\$ 304.1	24.7	25.5	26.5	27.1	28.7	34.2	34.2	34.3	34.3	34.4
Other Revenue	\$ 1,217.3	147.9	109.3	81.6	117.7	144.4	222.0	124.6	88.5	72.8	108.5
<b>Subtotal, Operating &amp; Other Revenue</b>	<b>\$ 6,151.5</b>	<b>\$ 538.0</b>	<b>\$ 519.0</b>	<b>\$ 512.9</b>	<b>\$ 570.8</b>	<b>\$ 615.9</b>	<b>\$ 735.3</b>	<b>\$ 650.6</b>	<b>\$ 641.7</b>	<b>\$ 649.5</b>	<b>\$ 717.8</b>
<b>CAPITAL &amp; DEBT FINANCING RESOURCES</b>											
Grant Receipts	\$ 17,380.1	1,799.2	1,827.7	2,246.2	1,655.8	1,581.5	1,483.6	1,863.7	1,878.3	1,681.7	1,362.4
Bond Proceeds and TIFIA	\$ 7,834.1	759.1	1,504.5	855.6	684.9	504.6	1,022.0	971.6	792.0	613.7	126.0
Prior Year Carryover	\$ 480.7	322.1	221.7	197.8	87.8	17.3	(42.3)	(75.0)	(77.7)	(147.6)	(23.4)
<b>Subtotal, Capital &amp; Debt Financing Resources</b>	<b>\$ 25,694.9</b>	<b>\$ 2,880.4</b>	<b>\$ 3,553.9</b>	<b>\$ 3,299.6</b>	<b>\$ 2,428.5</b>	<b>\$ 2,103.4</b>	<b>\$ 2,463.4</b>	<b>\$ 2,760.4</b>	<b>\$ 2,592.5</b>	<b>\$ 2,147.8</b>	<b>\$ 1,465.0</b>
<b>TOTAL REVENUES</b>	<b>\$ 71,070.4</b>	<b>\$ 6,765.1</b>	<b>\$ 7,492.5</b>	<b>\$ 7,372.7</b>	<b>\$ 6,690.3</b>	<b>\$ 6,542.7</b>	<b>\$ 7,164.8</b>	<b>\$ 7,527.9</b>	<b>\$ 7,508.7</b>	<b>\$ 7,227.9</b>	<b>\$ 6,777.9</b>

**Revenues by Major Category**  
**Comparison: SRFF vs. Pillar Projects Financial Forecast**

(\$ in millions)	TOTAL (FY19-FY28)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>SALES TAX, TDA, STA REVENUES</b>											
Proposition A	\$ -	-	-	-	-	-	-	-	-	-	-
Proposition C	\$ -	-	-	-	-	-	-	-	-	-	-
Measure R	\$ -	-	-	-	-	-	-	-	-	-	-
Measure M	\$ -	-	-	-	-	-	-	-	-	-	-
Transportation Development Act(TDA)	\$ -	-	-	-	-	-	-	-	-	-	-
State Transit Assistance (STA)	\$ -	-	-	-	-	-	-	-	-	-	-
<b>Subtotal, Sales Tax, TDA, STA Revenues</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>OPERATING &amp; OTHER REVENUE</b>											
Passenger Fares	\$ 11.7	(1.4)	(9.4)	(2.2)	(5.3)	-	(2.9)	(1.0)	(0.6)	(2.4)	36.9
ExpressLanes Tolls	\$ -	-	-	-	-	-	-	-	-	-	-
Advertising	\$ -	-	-	-	-	-	-	-	-	-	-
Other Revenue <sup>(1)</sup>	\$ 544.3	\$ 7.8	\$ (7.1)	\$ 8.0	\$ 10.7	\$ 12.9	\$ 15.3	\$ 401.2	\$ 86.6	\$ 23.3	\$ (14.2)
<b>Subtotal, Operating &amp; Other Revenue</b>	<b>\$ 556.0</b>	<b>\$ 6.4</b>	<b>\$ (16.4)</b>	<b>\$ 5.7</b>	<b>\$ 5.3</b>	<b>\$ 12.9</b>	<b>\$ 12.4</b>	<b>\$ 400.2</b>	<b>\$ 85.9</b>	<b>\$ 20.9</b>	<b>\$ 22.7</b>
<b>CAPITAL &amp; DEBT FINANCING RESOURCES</b>											
Grant Receipts	\$ 4,104.2	62.7	21.0	(85.1)	190.2	370.0	433.9	187.4	304.9	1,377.3	1,241.9
Bond Proceeds and TIFIA	\$ 7,861.2	(252.9)	509.0	278.8	429.1	432.3	833.4	1,204.2	2,060.5	1,678.9	687.8
Prior Year Carryover	\$ (219.7)	124.4	(558.6)	157.9	139.6	135.3	31.7	(127.6)	(645.3)	230.6	292.4
<b>Subtotal, Capital &amp; Debt Financing Resources</b>	<b>\$ 11,745.7</b>	<b>\$ (65.8)</b>	<b>\$ (28.6)</b>	<b>\$ 351.5</b>	<b>\$ 758.9</b>	<b>\$ 937.7</b>	<b>\$ 1,299.0</b>	<b>\$ 1,264.0</b>	<b>\$ 1,720.1</b>	<b>\$ 3,286.9</b>	<b>\$ 2,222.1</b>
<b>Required New Revenue</b>	<b>\$ 3,562.6</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 157.3</b>	<b>\$ 415.7</b>	<b>\$ 394.3</b>	<b>\$ 279.4</b>	<b>\$ 393.3</b>	<b>\$ 755.3</b>	<b>\$ 1,048.6</b>	<b>\$ 118.8</b>
<b>TOTAL REVENUES</b>	<b>\$ 15,864.4</b>	<b>\$ (59.4)</b>	<b>\$ (45.0)</b>	<b>\$ 514.5</b>	<b>\$ 1,179.9</b>	<b>\$ 1,344.9</b>	<b>\$ 1,590.9</b>	<b>\$ 2,057.4</b>	<b>\$ 2,561.3</b>	<b>\$ 4,356.4</b>	<b>\$ 2,363.5</b>

Notes:

1. Includes 3% Local Agency Contributions.

Expenditures by Major Category  
Pillar Projects Financial Forecast

(\$ in millions)	TOTAL (FY19-FY28)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>METRO OPERATIONS</b>											
Bus	\$ 14,225.2	1,225.3	1,263.5	1,325.9	1,400.2	1,429.8	1,459.4	1,487.5	1,515.1	1,544.3	1,574.1
Rail	\$ 8,011.9	568.5	559.5	666.5	692.6	728.6	802.9	848.6	889.4	976.2	1,279.2
Regional Rail	\$ 850.2	78.0	74.6	78.7	81.4	84.7	86.7	88.6	90.6	92.5	94.4
<b>Subtotal-Metro Operations</b>	<b>\$ 23,087.3</b>	<b>\$ 1,871.9</b>	<b>\$ 1,897.6</b>	<b>\$ 2,071.1</b>	<b>\$ 2,174.2</b>	<b>\$ 2,243.0</b>	<b>\$ 2,349.0</b>	<b>\$ 2,424.8</b>	<b>\$ 2,495.1</b>	<b>\$ 2,613.0</b>	<b>\$ 2,947.7</b>
<b>METRO CAPITAL</b>											
Bus Capital	\$ 3,429.0	217.6	387.2	368.9	253.4	223.7	324.1	476.9	344.1	461.5	371.7
Rail Capital	\$ 31,766.5	2,127.6	2,615.7	2,633.0	2,750.6	2,605.0	2,954.0	3,431.0	4,188.2	5,606.1	2,855.3
Regional Rail	\$ 435.9	18.3	26.1	90.0	30.2	31.3	40.6	43.6	47.0	52.6	56.2
Highway	\$ 5,849.3	499.9	521.9	619.1	541.1	650.3	907.8	887.5	630.1	346.7	245.0
<b>Subtotal-Metro Capital</b>	<b>\$ 41,480.7</b>	<b>\$ 2,863.3</b>	<b>\$ 3,550.9</b>	<b>\$ 3,711.0</b>	<b>\$ 3,575.3</b>	<b>\$ 3,510.3</b>	<b>\$ 4,226.4</b>	<b>\$ 4,838.9</b>	<b>\$ 5,209.5</b>	<b>\$ 6,466.8</b>	<b>\$ 3,528.2</b>
<b>SUBSIDY FUNDING PROGRAMS</b>											
Bus Operations	\$ 6,318.5	541.9	570.1	588.8	605.1	622.6	640.6	658.8	677.9	696.8	715.8
Bus Capital	\$ 1,253.6	111.7	132.7	132.0	136.6	117.5	122.1	121.5	125.7	124.7	129.0
Rail Capital	\$ 160.0	12.2	14.8	18.8	27.5	15.7	9.8	12.5	10.2	10.3	28.2
Highway	\$ 3,455.6	340.0	356.5	377.8	332.1	332.8	340.3	342.3	320.0	334.6	379.3
Call for Projects	\$ 713.6	74.5	90.1	98.6	103.7	71.4	108.1	107.2	20.0	20.0	20.0
<b>Subtotal-Subsidy Funding Programs</b>	<b>\$ 11,901.3</b>	<b>\$ 1,080.4</b>	<b>\$ 1,164.1</b>	<b>\$ 1,215.9</b>	<b>\$ 1,205.0</b>	<b>\$ 1,160.1</b>	<b>\$ 1,220.9</b>	<b>\$ 1,242.3</b>	<b>\$ 1,153.8</b>	<b>\$ 1,186.5</b>	<b>\$ 1,272.3</b>
<b>AGENCY WIDE</b>											
Administration	\$ 1,486.3	231.1	124.5	119.5	129.5	127.6	142.0	146.3	150.7	155.1	159.8
Capital	\$ 474.1	97.0	54.1	37.7	22.7	26.3	25.2	45.2	45.2	75.2	45.2
<b>Subtotal-Agency Wide</b>	<b>\$ 1,960.4</b>	<b>\$ 328.2</b>	<b>\$ 178.6</b>	<b>\$ 157.3</b>	<b>\$ 152.3</b>	<b>\$ 153.8</b>	<b>\$ 167.2</b>	<b>\$ 191.6</b>	<b>\$ 196.0</b>	<b>\$ 230.4</b>	<b>\$ 205.0</b>
<b>OTHER PROGRAMS/EXPENDITURE</b>											
Congestion Management	\$ 732.8	90.4	67.4	68.3	69.4	70.4	71.4	72.4	73.4	74.4	75.4
Other	\$ 55.7	2.8	-	3.6	3.7	5.1	6.3	7.4	8.0	7.9	10.9
Debt Service	\$ 7,716.6	468.7	588.9	659.9	690.4	744.9	714.3	808.0	934.2	1,005.3	1,101.9
<b>Subtotal-Other Programs/Expenditure</b>	<b>\$ 8,505.2</b>	<b>\$ 561.9</b>	<b>\$ 656.3</b>	<b>\$ 731.9</b>	<b>\$ 763.5</b>	<b>\$ 820.4</b>	<b>\$ 792.0</b>	<b>\$ 887.8</b>	<b>\$ 1,015.6</b>	<b>\$ 1,087.6</b>	<b>\$ 1,188.2</b>
<b>TOTAL EXPENDITURES</b>	<b>\$ 86,934.8</b>	<b>\$ 6,705.7</b>	<b>\$ 7,447.5</b>	<b>\$ 7,887.2</b>	<b>\$ 7,870.3</b>	<b>\$ 7,887.5</b>	<b>\$ 8,755.6</b>	<b>\$ 9,585.4</b>	<b>\$ 10,070.0</b>	<b>\$ 11,584.3</b>	<b>\$ 9,141.4</b>

Expenditures by Major Category  
Short Range Financial Forecast

(\$ in millions)	TOTAL (FY19-FY28)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>METRO OPERATIONS</b>											
Bus	\$ 14,225.2	1,225.3	1,263.5	1,325.9	1,400.2	1,429.8	1,459.4	1,487.5	1,515.1	1,544.3	1,574.1
Rail	\$ 7,967.1	568.5	631.8	683.6	733.4	728.6	816.0	855.7	892.2	991.6	1,065.9
Regional Rail	\$ 846.1	78.0	73.7	77.8	81.1	84.3	86.4	88.3	90.2	92.1	94.1
<b>Subtotal, Metro Operations</b>	<b>\$ 23,038.4</b>	<b>\$ 1,871.9</b>	<b>\$ 1,969.0</b>	<b>\$ 2,087.4</b>	<b>\$ 2,214.6</b>	<b>\$ 2,242.7</b>	<b>\$ 2,361.7</b>	<b>\$ 2,431.4</b>	<b>\$ 2,497.5</b>	<b>\$ 2,628.1</b>	<b>\$ 2,734.0</b>
<b>METRO CAPITAL</b>											
Bus Capital	\$ 3,431.4	217.8	387.4	369.1	253.5	223.8	324.1	476.9	344.1	461.5	373.1
Rail Capital	\$ 17,736.0	2,198.0	2,703.7	2,238.1	1,654.0	1,528.1	1,665.5	1,579.3	1,883.8	1,412.0	873.5
Regional Rail	\$ 435.9	18.3	26.1	90.0	30.2	31.3	40.6	43.6	47.0	52.6	56.2
Highway	\$ 5,325.2	494.4	469.5	573.0	529.4	496.9	725.0	852.2	541.2	366.2	277.5
<b>Subtotal, Metro Capital</b>	<b>\$ 26,928.5</b>	<b>\$ 2,928.6</b>	<b>\$ 3,586.6</b>	<b>\$ 3,270.3</b>	<b>\$ 2,467.1</b>	<b>\$ 2,280.1</b>	<b>\$ 2,755.2</b>	<b>\$ 2,952.0</b>	<b>\$ 2,816.0</b>	<b>\$ 2,292.2</b>	<b>\$ 1,580.3</b>
<b>SUBSIDY FUNDING PROGRAMS</b>											
Bus Operations	\$ 6,301.5	541.9	567.0	585.7	603.6	621.0	639.0	657.3	676.4	695.3	714.3
Bus Capital	\$ 1,253.6	111.7	132.7	132.0	136.6	117.5	122.1	121.5	125.7	124.7	129.0
Rail Capital	\$ 170.9	13.6	16.0	20.1	27.8	17.2	9.8	11.5	10.3	10.5	34.1
Highway	\$ 3,388.6	331.5	299.5	338.9	329.9	333.5	340.3	342.2	320.0	334.5	418.2
Call for Projects	\$ 452.9	79.1	82.7	71.3	46.7	20.7	51.5	40.9	20.0	20.0	20.0
<b>Subtotal, Subsidy Funding Programs</b>	<b>\$ 11,567.6</b>	<b>\$ 1,077.8</b>	<b>\$ 1,097.8</b>	<b>\$ 1,147.9</b>	<b>\$ 1,144.7</b>	<b>\$ 1,109.9</b>	<b>\$ 1,162.8</b>	<b>\$ 1,173.5</b>	<b>\$ 1,152.4</b>	<b>\$ 1,185.1</b>	<b>\$ 1,315.6</b>
<b>AGENCY WIDE</b>											
Administration	\$ 1,486.5	231.1	124.5	119.7	129.5	127.6	142.0	146.3	150.7	155.1	159.8
Capital	\$ 386.1	97.0	41.1	24.7	9.7	13.3	12.2	32.2	40.2	70.2	45.2
<b>Subtotal, Agency-wide</b>	<b>\$ 1,872.6</b>	<b>\$ 328.2</b>	<b>\$ 165.6</b>	<b>\$ 144.5</b>	<b>\$ 139.3</b>	<b>\$ 140.8</b>	<b>\$ 154.2</b>	<b>\$ 178.6</b>	<b>\$ 191.0</b>	<b>\$ 225.4</b>	<b>\$ 205.0</b>
<b>OTHER PROGRAMS/EXPENDITURE</b>											
Congestion Management	\$ 732.8	90.4	67.4	68.3	69.4	70.4	71.4	72.4	73.4	74.4	75.4
Other	\$ 19.7	2.8	-	0.8	0.1	0.6	1.3	2.4	3.0	2.9	5.9
Debt Service	\$ 6,910.9	465.4	606.0	653.5	655.1	698.2	658.1	717.6	775.4	819.8	861.7
<b>Subtotal-Other Programs/Expenditure</b>	<b>\$ -</b>										
<b>TOTAL EXPENDITURES</b>	<b>\$ 71,070.4</b>	<b>\$ 6,765.1</b>	<b>\$ 7,492.5</b>	<b>\$ 7,372.7</b>	<b>\$ 6,690.3</b>	<b>\$ 6,542.7</b>	<b>\$ 7,164.8</b>	<b>\$ 7,527.9</b>	<b>\$ 7,508.7</b>	<b>\$ 7,227.9</b>	<b>\$ 6,777.9</b>

## Expenditures by Major Category

Comparison: SRFF vs. Pillar Projects Financial Forecast

(\$ in millions)	TOTAL (FY19-FY28)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>METRO OPERATIONS</b>											
Bus	\$ -	-	-	-	-	-	-	-	-	-	-
Rail	\$ 44.8	-	(72.3)	(17.2)	(40.8)	-	(13.0)	(7.0)	(2.8)	(15.4)	213.3
Regional Rail	\$ 4.1	-	0.9	0.9	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<b>Subtotal-Metro Operations</b>	<b>\$ 48.9</b>	<b>\$ -</b>	<b>\$ (71.4)</b>	<b>\$ (16.3)</b>	<b>\$ (40.4)</b>	<b>\$ 0.3</b>	<b>\$ (12.7)</b>	<b>\$ (6.7)</b>	<b>\$ (2.5)</b>	<b>\$ (15.1)</b>	<b>\$ 213.6</b>
<b>METRO CAPITAL</b>											
Bus Capital	\$ (2.3)	(0.2)	(0.2)	(0.2)	(0.1)	(0.1)	(0.0)	(0.1)	0.0	0.0	(1.4)
Rail Capital	\$ 14,030.5	(70.4)	(88.0)	394.8	1,096.6	1,076.9	1,288.5	1,851.7	2,304.5	4,194.1	1,981.9
Regional Rail	\$ -	-	-	-	-	-	-	-	-	-	-
Highway	\$ 524.1	5.4	52.5	46.1	11.7	153.4	182.7	35.3	88.9	(19.5)	(32.5)
<b>Subtotal-Metro Capital</b>	<b>\$ 14,552.2</b>	<b>\$ (65.2)</b>	<b>\$ (35.7)</b>	<b>\$ 440.7</b>	<b>\$ 1,108.2</b>	<b>\$ 1,230.2</b>	<b>\$ 1,471.2</b>	<b>\$ 1,886.9</b>	<b>\$ 2,393.5</b>	<b>\$ 4,174.6</b>	<b>\$ 1,948.0</b>
<b>SUBSIDY FUNDING PROGRAMS</b>											
Bus Operations	\$ 17.0	-	3.1	3.1	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Bus Capital	\$ -	-	-	-	-	-	-	-	-	-	-
Rail Capital	\$ (10.9)	(1.4)	(1.2)	(1.3)	(0.4)	(1.4)	0.0	0.9	(0.1)	(0.2)	(5.9)
Highway	\$ 67.0	8.5	57.0	38.9	2.2	(0.7)	(0.0)	0.0	0.0	0.1	(38.9)
Call for Projects	\$ 260.7	(4.6)	7.4	27.3	56.9	50.7	56.6	66.3	-	-	-
<b>Subtotal-Subsidy Funding Programs</b>	<b>\$ 333.7</b>	<b>\$ 2.5</b>	<b>\$ 66.2</b>	<b>\$ 68.0</b>	<b>\$ 60.3</b>	<b>\$ 50.1</b>	<b>\$ 58.2</b>	<b>\$ 68.8</b>	<b>\$ 1.4</b>	<b>\$ 1.4</b>	<b>\$ (43.3)</b>
<b>AGENCY WIDE</b>											
Administration	\$ (0.2)	-	-	(0.2)	-	-	-	-	-	-	-
Capital	\$ 88.0	-	13.0	13.0	13.0	13.0	13.0	13.0	5.0	5.0	-
<b>Subtotal-Agency Wide</b>	<b>\$ 87.8</b>	<b>\$ -</b>	<b>\$ 13.0</b>	<b>\$ 12.8</b>	<b>\$ 13.0</b>	<b>\$ 13.0</b>	<b>\$ 13.0</b>	<b>\$ 13.0</b>	<b>\$ 5.0</b>	<b>\$ 5.0</b>	<b>\$ -</b>
<b>OTHER PROGRAMS/EXPENDITURE</b>											
Congestion Management	\$ -	-	-	-	-	-	-	-	-	-	-
Other	\$ 36.0	-	-	2.9	3.6	4.5	5.0	5.0	5.0	5.0	5.0
Debt Service	\$ 805.8	3.3	(17.2)	6.4	35.3	46.8	56.2	90.4	158.8	185.5	240.2
<b>Subtotal-Other Programs/Expenditure</b>	<b>\$ 8,505.2</b>	<b>\$ 561.9</b>	<b>\$ 656.3</b>	<b>\$ 731.9</b>	<b>\$ 763.5</b>	<b>\$ 820.4</b>	<b>\$ 792.0</b>	<b>\$ 887.8</b>	<b>\$ 1,015.6</b>	<b>\$ 1,087.6</b>	<b>\$ 1,188.2</b>
<b>TOTAL EXPENDITURES</b>	<b>\$ 15,864.4</b>	<b>\$ (59.4)</b>	<b>\$ (45.0)</b>	<b>\$ 514.5</b>	<b>\$ 1,179.9</b>	<b>\$ 1,344.9</b>	<b>\$ 1,590.9</b>	<b>\$ 2,057.4</b>	<b>\$ 2,561.3</b>	<b>\$ 4,356.4</b>	<b>\$ 2,363.5</b>

Expenditures by Major Category  
Pillar Projects Financial Forecast

(\$ in millions)	TOTAL (FY19-FY28)	TOTAL (FY29-FY38)	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
<b>METRO OPERATIONS</b>												
Bus	\$ 14,225.2	17,797.1	1,630.8	1,662.2	1,694.2	1,726.9	1,760.2	1,794.1	1,828.6	1,863.9	1,899.8	1,936.4
Rail	\$ 8,011.9	15,130.2	1,397.8	1,423.7	1,444.0	1,504.5	1,497.9	1,525.6	1,553.8	1,566.6	1,593.4	1,622.9
Regional Rail	\$ 850.2	1,068.3	96.4	98.6	100.8	103.1	105.4	107.8	110.3	112.8	115.3	117.9
<b>Subtotal-Metro Operations</b>	<b>\$ 23,087.3</b>	<b>\$ 33,995.6</b>	<b>\$ 3,125.0</b>	<b>\$ 3,184.4</b>	<b>\$ 3,239.0</b>	<b>\$ 3,334.5</b>	<b>\$ 3,363.5</b>	<b>\$ 3,427.5</b>	<b>\$ 3,492.8</b>	<b>\$ 3,543.2</b>	<b>\$ 3,608.5</b>	<b>\$ 3,677.2</b>
<b>METRO CAPITAL</b>												
Bus Capital	\$ 3,429.0	2,761.4	431.9	352.5	219.9	234.4	180.3	317.3	87.4	134.9	272.8	530.0
Rail Capital	\$ 31,766.5	5,873.2	406.3	362.7	371.4	537.4	617.5	650.0	918.1	489.7	940.1	580.0
Regional Rail	\$ 435.9	829.2	60.3	65.8	70.2	75.2	80.4	85.7	91.1	95.9	100.1	104.6
Highway	\$ 5,849.3	5,033.6	283.2	399.8	612.8	460.2	375.8	568.2	604.3	730.5	521.5	477.2
<b>Subtotal-Metro Capital</b>	<b>\$ 41,480.7</b>	<b>\$ 14,497.4</b>	<b>\$ 1,181.6</b>	<b>\$ 1,180.8</b>	<b>\$ 1,274.3</b>	<b>\$ 1,307.2</b>	<b>\$ 1,254.0</b>	<b>\$ 1,621.2</b>	<b>\$ 1,700.9</b>	<b>\$ 1,451.1</b>	<b>\$ 1,834.4</b>	<b>\$ 1,691.7</b>
<b>SUBSIDY FUNDING PROGRAMS</b>												
Bus Operations	\$ 6,318.5	8,436.2	736.3	758.2	780.7	804.8	829.5	854.9	880.8	906.0	930.0	955.0
Bus Capital	\$ 1,253.6	1,439.1	128.0	155.3	155.1	160.1	134.8	139.1	138.3	142.6	141.9	143.9
Rail Capital	\$ 160.0	386.2	31.3	33.0	36.3	34.5	38.3	41.6	39.9	40.7	46.1	44.5
Highway	\$ 3,455.6	4,163.7	405.9	413.0	405.6	447.6	408.1	430.1	373.8	433.8	417.7	427.9
Call for Projects	\$ 713.6	295.4	-	-	-	-	25.0	50.0	50.0	50.0	61.9	58.4
<b>Subtotal-Subsidy Funding Programs</b>	<b>\$ 11,901.3</b>	<b>\$ 14,720.6</b>	<b>\$ 1,301.6</b>	<b>\$ 1,359.6</b>	<b>\$ 1,377.7</b>	<b>\$ 1,447.1</b>	<b>\$ 1,435.6</b>	<b>\$ 1,515.7</b>	<b>\$ 1,482.8</b>	<b>\$ 1,573.2</b>	<b>\$ 1,597.7</b>	<b>\$ 1,629.7</b>
<b>AGENCY WIDE</b>												
Administration	\$ 1,486.3	1,968.6	164.8	172.6	183.1	189.1	195.2	201.6	208.0	209.0	219.6	225.5
Capital	\$ 474.1	1,119.9	75.2	47.7	102.7	127.7	127.7	127.7	127.7	127.7	127.7	127.7
<b>Subtotal-Agency Wide</b>	<b>\$ 1,960.4</b>	<b>\$ 3,088.4</b>	<b>\$ 240.0</b>	<b>\$ 220.4</b>	<b>\$ 285.9</b>	<b>\$ 316.8</b>	<b>\$ 323.0</b>	<b>\$ 329.3</b>	<b>\$ 335.7</b>	<b>\$ 336.8</b>	<b>\$ 347.4</b>	<b>\$ 353.3</b>
<b>OTHER PROGRAMS/EXPENDITURE</b>												
Congestion Management	\$ 732.8	815.9	76.5	77.5	78.6	79.8	80.9	82.1	83.3	84.5	85.7	87.0
Other	\$ 55.7	109.9	11.6	12.2	12.1	13.3	13.5	13.7	13.5	7.9	5.7	6.5
Debt Service	\$ 7,716.6	13,994.6	1,146.6	1,207.3	1,249.9	1,272.4	1,304.4	1,497.8	1,680.3	1,585.0	1,554.1	1,496.7
<b>Subtotal-Other Programs/Expenditure</b>	<b>\$ 8,505.2</b>	<b>\$ 14,920.4</b>	<b>\$ 1,234.6</b>	<b>\$ 1,297.1</b>	<b>\$ 1,340.7</b>	<b>\$ 1,365.4</b>	<b>\$ 1,398.8</b>	<b>\$ 1,593.6</b>	<b>\$ 1,777.1</b>	<b>\$ 1,677.4</b>	<b>\$ 1,645.5</b>	<b>\$ 1,590.2</b>
<b>TOTAL EXPENDITURES</b>	<b>\$ 86,934.8</b>	<b>\$ 81,222.4</b>	<b>\$ 7,082.9</b>	<b>\$ 7,242.3</b>	<b>\$ 7,517.5</b>	<b>\$ 7,771.0</b>	<b>\$ 7,774.9</b>	<b>\$ 8,487.3</b>	<b>\$ 8,789.3</b>	<b>\$ 8,581.8</b>	<b>\$ 9,033.5</b>	<b>\$ 8,942.1</b>

**Expenditures by Major Category**  
**Short Range Financial Forecast**

	TOTAL (FY19-FY28)	TOTAL (FY29-FY38)	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
<b>METRO OPERATIONS</b>												
Bus	\$ 14,225.2	17,797.1	1,630.8	1,662.2	1,694.2	1,726.9	1,760.2	1,794.1	1,828.6	1,863.9	1,899.8	1,936.4
Rail	\$ 7,967.1	12,388.0	1,067.7	1,115.0	1,125.1	1,179.7	1,167.1	1,188.7	1,328.4	1,314.0	1,377.0	1,525.4
Regional Rail	\$ 846.1	1,065.0	96.1	98.2	100.4	102.7	105.1	107.5	109.9	112.4	115.0	117.6
<b>Subtotal, Metro Operations</b>	<b>\$ 23,038.4</b>	<b>\$ 31,250.0</b>	<b>\$ 2,794.5</b>	<b>\$ 2,875.4</b>	<b>\$ 2,919.7</b>	<b>\$ 3,009.3</b>	<b>\$ 3,032.3</b>	<b>\$ 3,090.2</b>	<b>\$ 3,267.0</b>	<b>\$ 3,290.3</b>	<b>\$ 3,391.8</b>	<b>\$ 3,579.3</b>
<b>METRO CAPITAL</b>												
Bus Capital	\$ 3,431.4	2,640.8	333.3	323.7	221.2	235.8	181.8	317.9	88.0	135.6	273.5	529.8
Rail Capital	\$ 17,736.0	18,572.4	1,135.1	1,185.1	1,279.7	1,621.2	2,259.5	2,992.0	2,721.7	2,169.4	1,926.6	1,281.9
Regional Rail	\$ 435.9	829.2	60.3	65.8	70.2	75.2	80.4	85.7	91.1	95.9	100.1	104.6
Highway	\$ 5,325.2	4,925.6	282.9	367.9	561.0	388.3	390.8	537.0	773.5	733.9	490.8	399.4
<b>Subtotal, Metro Capital</b>	<b>\$ 26,928.5</b>	<b>\$ 26,968.0</b>	<b>\$ 1,811.7</b>	<b>\$ 1,942.5</b>	<b>\$ 2,132.2</b>	<b>\$ 2,320.6</b>	<b>\$ 2,912.5</b>	<b>\$ 3,932.6</b>	<b>\$ 3,674.3</b>	<b>\$ 3,134.8</b>	<b>\$ 2,791.0</b>	<b>\$ 2,315.7</b>
<b>SUBSIDY FUNDING PROGRAMS</b>												
Bus Operations	\$ 6,301.5	8,420.8	734.7	756.7	779.2	803.3	827.9	853.3	879.3	904.5	928.5	953.5
Bus Capital	\$ 1,253.6	1,439.1	128.0	155.3	155.1	160.1	134.8	139.1	138.3	142.6	141.9	143.9
Rail Capital	\$ 170.9	389.2	33.6	34.6	37.1	36.7	37.8	40.4	40.1	41.3	44.0	43.8
Highway	\$ 3,841.5	4,406.1	405.7	412.8	405.3	447.4	445.7	468.9	413.7	474.9	460.1	471.5
Call for Projects	\$ -	-	-	-	-	-	25.0	50.0	50.0	50.0	61.9	58.4
<b>Subtotal, Subsidy Funding Programs</b>	<b>\$ 11,567.6</b>	<b>\$ 14,655.2</b>	<b>\$ 1,302.0</b>	<b>\$ 1,359.3</b>	<b>\$ 1,376.7</b>	<b>\$ 1,447.5</b>	<b>\$ 1,471.2</b>	<b>\$ 1,551.7</b>	<b>\$ 1,521.3</b>	<b>\$ 1,613.3</b>	<b>\$ 1,636.4</b>	<b>\$ 1,671.1</b>
<b>AGENCY WIDE</b>												
Administration	\$ 1,486.5	1,968.6	164.8	172.6	183.1	189.1	195.2	201.6	208.0	209.0	219.6	225.5
Capital	\$ 386.1	909.9	75.2	47.7	102.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7
<b>Subtotal, Agency-wide</b>	<b>\$ 1,872.6</b>	<b>\$ 2,878.4</b>	<b>\$ 240.0</b>	<b>\$ 220.4</b>	<b>\$ 285.9</b>	<b>\$ 286.8</b>	<b>\$ 293.0</b>	<b>\$ 299.3</b>	<b>\$ 305.7</b>	<b>\$ 306.8</b>	<b>\$ 317.4</b>	<b>\$ 323.3</b>
<b>OTHER PROGRAMS/EXPENDITURE</b>												
Congestion Management	\$ 732.8	815.9	76.5	77.5	78.6	79.8	80.9	82.1	83.3	84.5	85.7	87.0
Other	\$ 19.7	74.9	6.6	7.2	7.1	8.3	8.5	8.7	8.5	7.9	5.7	6.5
Debt Service	\$ 6,910.9	10,901.7	870.2	912.3	961.7	990.3	1,061.7	1,118.6	1,156.6	1,292.6	1,286.7	1,250.9
<b>Subtotal-Other Programs/Expenditure</b>	<b>\$ 7,663.4</b>	<b>\$ 11,792.5</b>	<b>\$ 953.2</b>	<b>\$ 997.0</b>	<b>\$ 1,047.5</b>	<b>\$ 1,078.4</b>	<b>\$ 1,151.2</b>	<b>\$ 1,209.4</b>	<b>\$ 1,248.4</b>	<b>\$ 1,385.1</b>	<b>\$ 1,378.1</b>	<b>\$ 1,344.3</b>
<b>TOTAL EXPENDITURES</b>	<b>\$ 71,070.4</b>	<b>\$ 87,544.1</b>	<b>\$ 7,101.5</b>	<b>\$ 7,394.6</b>	<b>\$ 7,762.0</b>	<b>\$ 8,142.6</b>	<b>\$ 8,860.2</b>	<b>\$ 10,083.2</b>	<b>\$ 10,016.8</b>	<b>\$ 9,730.3</b>	<b>\$ 9,514.6</b>	<b>\$ 9,233.7</b>



**Expenditures by Major Category**

20 Year Comparison: SRRF vs. Pillar Projects Financial Forecast

(\$ in millions)	TOTAL (FY19-FY28)	TOTAL (FY29-FY38)	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
<b>METRO OPERATIONS</b>												
Bus	\$ -	-	-	-	-	-	-	-	-	-	-	-
Rail	\$ 44.8	2,742.2	330.1	308.7	318.9	324.8	330.8	336.9	225.4	252.6	216.4	97.5
Regional Rail	\$ 4.1	3.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<b>Subtotal-Metro Operations</b>	<b>\$ 48.9</b>	<b>\$ 2,745.6</b>	<b>\$ 330.5</b>	<b>\$ 309.0</b>	<b>\$ 319.2</b>	<b>\$ 325.1</b>	<b>\$ 331.2</b>	<b>\$ 337.3</b>	<b>\$ 225.8</b>	<b>\$ 252.9</b>	<b>\$ 216.7</b>	<b>\$ 97.9</b>
<b>METRO CAPITAL</b>												
Bus Capital	\$ (2.3)	120.7	98.5	28.8	(1.3)	(1.4)	(1.5)	(0.5)	(0.6)	(0.7)	(0.8)	0.2
Rail Capital	\$ 14,030.5	(12,699.2)	(728.8)	(822.4)	(908.3)	(1,083.9)	(1,642.0)	(2,342.0)	(1,803.6)	(1,679.7)	(986.5)	(701.9)
Regional Rail	\$ -	-	-	-	-	-	-	-	-	-	-	-
Highway	\$ 524.1	108.0	0.2	32.0	51.7	71.9	(15.0)	31.2	(169.2)	(3.3)	30.7	77.7
<b>Subtotal-Metro Capital</b>	<b>\$ 14,552.2</b>	<b>\$ (12,470.5)</b>	<b>\$ (630.1)</b>	<b>\$ (761.7)</b>	<b>\$ (857.9)</b>	<b>\$ (1,013.4)</b>	<b>\$ (1,658.5)</b>	<b>\$ (2,311.3)</b>	<b>\$ (1,973.4)</b>	<b>\$ (1,683.8)</b>	<b>\$ (956.6)</b>	<b>\$ (624.0)</b>
<b>SUBSIDY FUNDING PROGRAMS</b>												
Bus Operations	\$ 17.0	15.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Bus Capital	\$ -	-	-	-	-	-	-	-	-	-	-	-
Rail Capital	\$ (10.9)	(3.0)	(2.2)	(1.5)	(0.8)	(2.2)	0.5	1.2	(0.2)	(0.6)	2.1	0.7
Highway	\$ (385.9)	(242.4)	0.2	0.2	0.2	0.2	(37.6)	(38.7)	(39.9)	(41.1)	(42.3)	(43.6)
Call for Projects	\$ 713.6	295.4	-	-	-	-	-	-	-	-	-	-
<b>Subtotal-Subsidy Funding Programs</b>	<b>\$ 333.7</b>	<b>\$ 65.4</b>	<b>\$ (0.5)</b>	<b>\$ 0.2</b>	<b>\$ 0.9</b>	<b>\$ (0.4)</b>	<b>\$ (35.6)</b>	<b>\$ (36.0)</b>	<b>\$ (38.5)</b>	<b>\$ (40.1)</b>	<b>\$ (38.7)</b>	<b>\$ (41.4)</b>
<b>AGENCY WIDE</b>												
Administration	\$ (0.2)	-	-	-	-	-	-	-	-	-	-	-
Capital	\$ 88.0	210.0	-	-	-	30.0	30.0	30.0	30.0	30.0	30.0	30.0
<b>Subtotal-Agency Wide</b>	<b>\$ 87.8</b>	<b>\$ 210.0</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 30.0</b>	<b>\$ 30.0</b>	<b>\$ 30.0</b>	<b>\$ 30.0</b>	<b>\$ 30.0</b>	<b>\$ 30.0</b>	<b>\$ 30.0</b>
<b>OTHER PROGRAMS/EXPENDITURE</b>												
Congestion Management	\$ -	-	-	-	-	-	-	-	-	-	-	-
Other	\$ 36.0	35.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	-	-	-
Debt Service	\$ 805.8	3,092.8	276.4	295.0	288.2	282.0	242.6	379.2	523.7	292.4	267.5	245.9
<b>Subtotal-Other Programs/Expenditure</b>	<b>\$ 841.8</b>	<b>\$ 3,127.8</b>	<b>\$ 281.4</b>	<b>\$ 300.0</b>	<b>\$ 293.2</b>	<b>\$ 287.0</b>	<b>\$ 247.6</b>	<b>\$ 384.2</b>	<b>\$ 528.7</b>	<b>\$ 292.4</b>	<b>\$ 267.5</b>	<b>\$ 245.9</b>
<b>TOTAL EXPENDITURES</b>	<b>15,864.4</b>	<b>\$ (6,321.7)</b>	<b>\$ (18.6)</b>	<b>\$ (152.4)</b>	<b>\$ (244.5)</b>	<b>\$ (371.6)</b>	<b>\$ (1,085.3)</b>	<b>\$ (1,595.9)</b>	<b>\$ (1,227.5)</b>	<b>\$ (1,148.6)</b>	<b>\$ (481.1)</b>	<b>\$ (291.6)</b>

**CONSTRUCTABILITY ANALYSIS - PROJECT INFORMATION**

Project	Scope	P3 Status	Schedules	Cost Estimate	Major Risks	Acceleration strategies
<b>Eastside Extension</b>	<p>1) SR 60 LRT Alternative: SR 60 would extend the existing Metro Gold Line Eastside Extension from the Atlantic/Pomona Station, approximately 6.9 miles to Peck Rd. in the City of South El Monte.</p> <p>2) Washington LRT Alternative: Washington Alternative extends the existing Metro Gold Line Eastside Extension from the Atlantic/Pomona Station, approximately 9.5 miles to Lambert Rd. in the City of Whittier.</p> <p>3) Combined Alternative: The Combined Alternative is the full build out of both the SR 60 and Washington Alternatives.</p>	P3 not being considered for this project	<p>Planning/Environmental Complete: 2023</p> <p>Preliminary Engineering Complete: 2024</p> <p>Construction Substantial Completion: 2029-2030</p> <p>Anticipated Revenue Operation Date (One Alignment): 2029-2031</p>	<p>1) SR 60 LRT Alternative: The capital cost in 2015 dollars is estimated at \$3B billion.</p> <p>2) Washington LRT Alternative: The capital cost in 2015 dollars is estimated at \$3B</p>	<p>1) Increase in labor and material costs due to market forces</p> <p>2) Coordination with multiple cooperating agencies including FTA, Environmental Protection Agency, US Army Core of Engineer, and Caltrans</p> <p>3) Define and analyze tunneling methods, portals, and construction staging areas</p> <p>4) Third Party Permits and Approvals</p>	<p>1) Advance PE to begin shortly after the LPA</p> <p>2) Advance utility design to procure and perform advanced utility relocation</p>
<b>Green Line Extension</b>	The Green Line Extension to Torrance Supplemental Alternatives Analysis (AA) encompasses a 4.6-mile-long study area presumed to be LRT. It extends from the existing Redondo Beach Marine Station toward the Torrance Regional Transit Center (RTC) using the Metro owned Harbor Subdivision Railroad Corridor.	P3 not being considered for this project	<p>Planning/Environmental Complete: 2022</p> <p>Preliminary Engineering Complete: 2023</p> <p>Construction Substantial Completion: 2028-2029</p> <p>Anticipated Revenue Operation Date: 2028-2030</p>	Project Cost in 2015 dollars \$893M to \$1.2Billion	<p>1) Increase in labor and material costs due to market forces</p> <p>2) Coordination with BNSF on Metro ROW</p> <p>3) Adjacent communities are not supportive of the Metro ROW alignment</p> <p>4) Pressure to study underground alternatives</p> <p>5) Third Party Permits and Approvals</p>	<p>1) Shorten the environmental phase by clearing via CEQA process only as opposed to both CEQA &amp; NEPA</p> <p>2) Exercise option to start PE shortly after the LPA</p> <p>3) Advance utility design to procure and perform advanced utility relocation</p> <p>4) Advance railroad track design to procure and perform advanced track relocation</p>
<b>West Santa Ana Branch</b>	The West Santa Ana Branch Project (WSAB) is identified in Measure M as a proposed 20-mile Light Rail Transit (LRT) line with 12 planned stations that would connect the cities of southeast Los Angeles County (LA County) to downtown Los Angeles and the Metro rail network.	Currently in the Risk Assessment phase which is step 5 of the 10 step P3 development process.	<p>Planning/Environmental Complete: 2021</p> <p>Preliminary Engineering Complete: N/A</p> <p>Construction Substantial Completion: 2027-2029</p> <p>Anticipated Revenue Operation Date: 2028-2030</p>	The current updated end-to-end project capital cost for the two alternatives (Alternatives E & G) is estimated at \$6.5 to \$6.6B (in 2018 dollars). Does not reflect potential costs for First Last Mile and UPRR ROW costs.	<p>1) Increase labor and material costs due to market forces</p> <p>2) Negotiations with UPRR and relocation of active freight tracks</p> <p>3) Lack of availability of utility resources to relocate utilities.</p> <p>4) Third Party Permits and Approvals</p>	<p>1) Shorten the environmental phase by coordinating with cooperating partners to reduce multiple review cycles</p> <p>2) Advance utility design to procure and perform advanced utility relocation</p> <p>3) Advance railroad track design to procure and perform advanced track relocation</p> <p>4) Shorten alignment to viable MOS</p>
<b>Sepulveda Pass Transit</b>	Metro is conducting a Feasibility Study to identify and evaluate a range of high-capacity rail transit alternatives between the San Fernando Valley and LAX. For Valley-Westside phase, concepts run between the Metrolink Van Nuys Station and the Expo Line. There are three heavy rail concepts and one monorail/rubber tire concept.	The Project has been identified as a potential P3, step 1 in the P3 development Process, and a Market Sounding has been conducted to assess bidder interest in a PDA contract to develop the project.	<p>Planning/Environmental Complete: 2024</p> <p>Preliminary Engineering Complete: 2024</p> <p>Construction Substantial Completion: 2033-2034</p> <p>Anticipated Revenue Operation Date: 2033-2035</p>	The Sepulveda Transit Corridor is part of the Measure M expenditure plan, with approximately \$5.7 billion allocated for the Valley-Westside portion of the project.	<p>1) Increase in labor and material costs due to market forces</p> <p>2) Constructing an alignment in proximity to water infrastructure on Sepulveda Boulevard or Van Nuys Boulevard.</p> <p>3) Constructing an alignment through environmentally sensitive areas in the Santa Monica Mountains.</p> <p>4) Identifying location for maintenance and storage facility site.</p> <p>5) Third Party Permits and Approvals</p>	<p>1) Advance PE to overlap with Environmental phase</p> <p>2) Procure several TBMs to shorten tunneling duration</p>



# Twenty-Eight by '28 Financial Forecast and Constructability Analysis

July 18, 2019



**Metro**

# Overview

- Motion 32.4 (Feb 2019) directs staff to prepare a financial forecast and constructability analysis:
  - prioritize 4 “pillar projects”
  - new public and private financing
  - P3 efficiencies

# Financial Forecast Results – Capital Costs

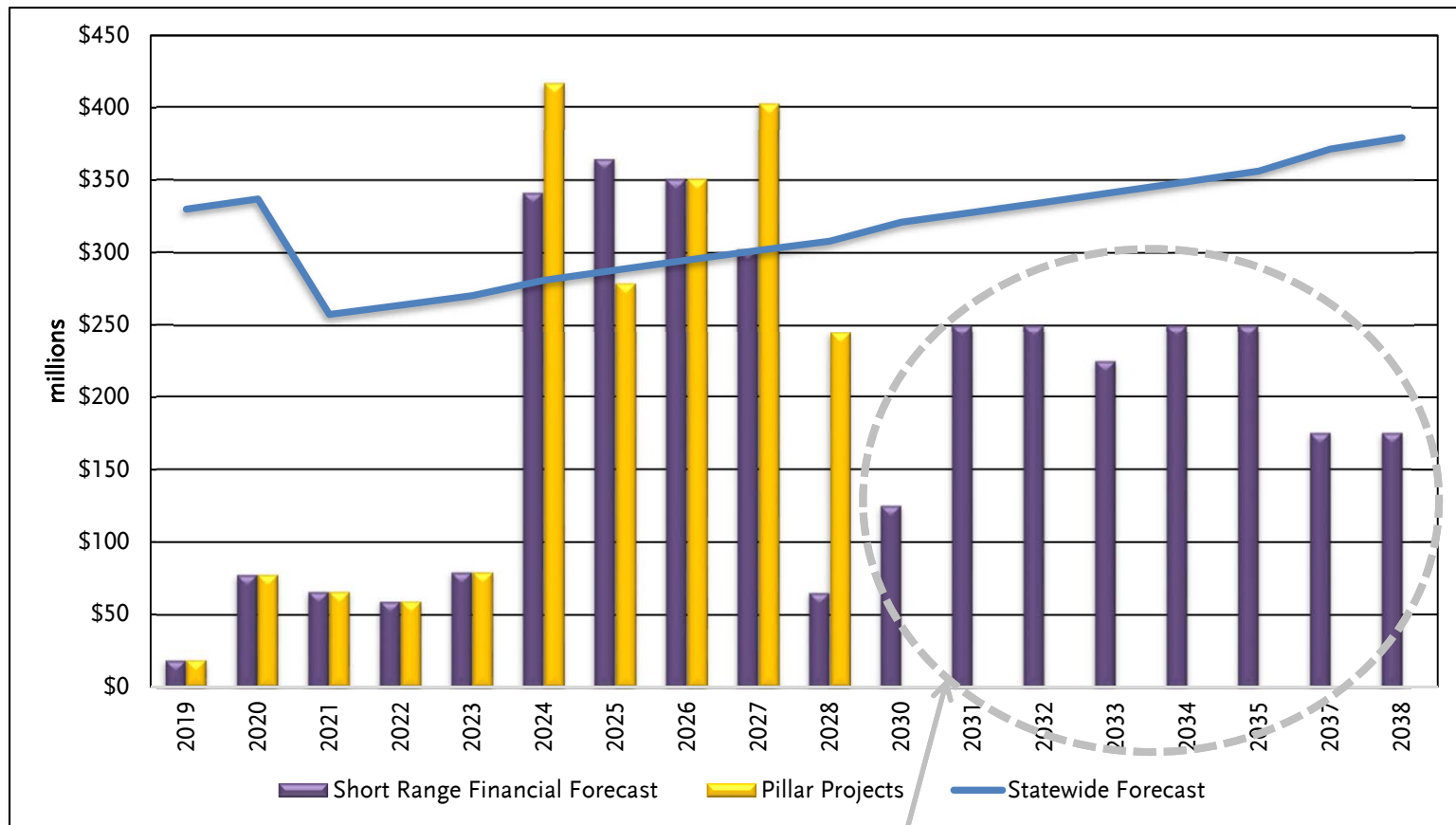
Estimated Accelerated Capital Cost and Available Funding “Pillar Projects” (\$ in millions)				
Pillar Projects	Total Capital Cost	Metro Local Funding	State and Federal Funding	Funding Surplus/ (Shortfall)
Gold Line Eastside Extension Phase 2	\$3,637.7	\$2,179.8	\$385.7	\$(1,072.2)
Green Line Extension to Torrance	1,086.0	854.7	231.3	-
Sepulveda Transit Corridor	8,572.6	3,448.6	3,748.1	(1,376.0)
West Santa Ana Branch to Downtown LA	5,565.6	2,513.4	2,155.5	(896.7)
<b>TOTAL</b>	<b>\$18,862.0</b>	<b>\$8,996.5</b>	<b>\$6,520.7</b>	<b>\$(3,344.8)</b>

# Financial Forecast Results – Operating Costs

- Opening of pillar projects in FY 2028:
  - higher operating costs of \$300 million per year
  - estimated shortfall of \$1.2 billion over next 10 years (FY 2029 to FY 2038)
- Funding for operations limited by each ordinance



# Reduction in Funding from Acceleration



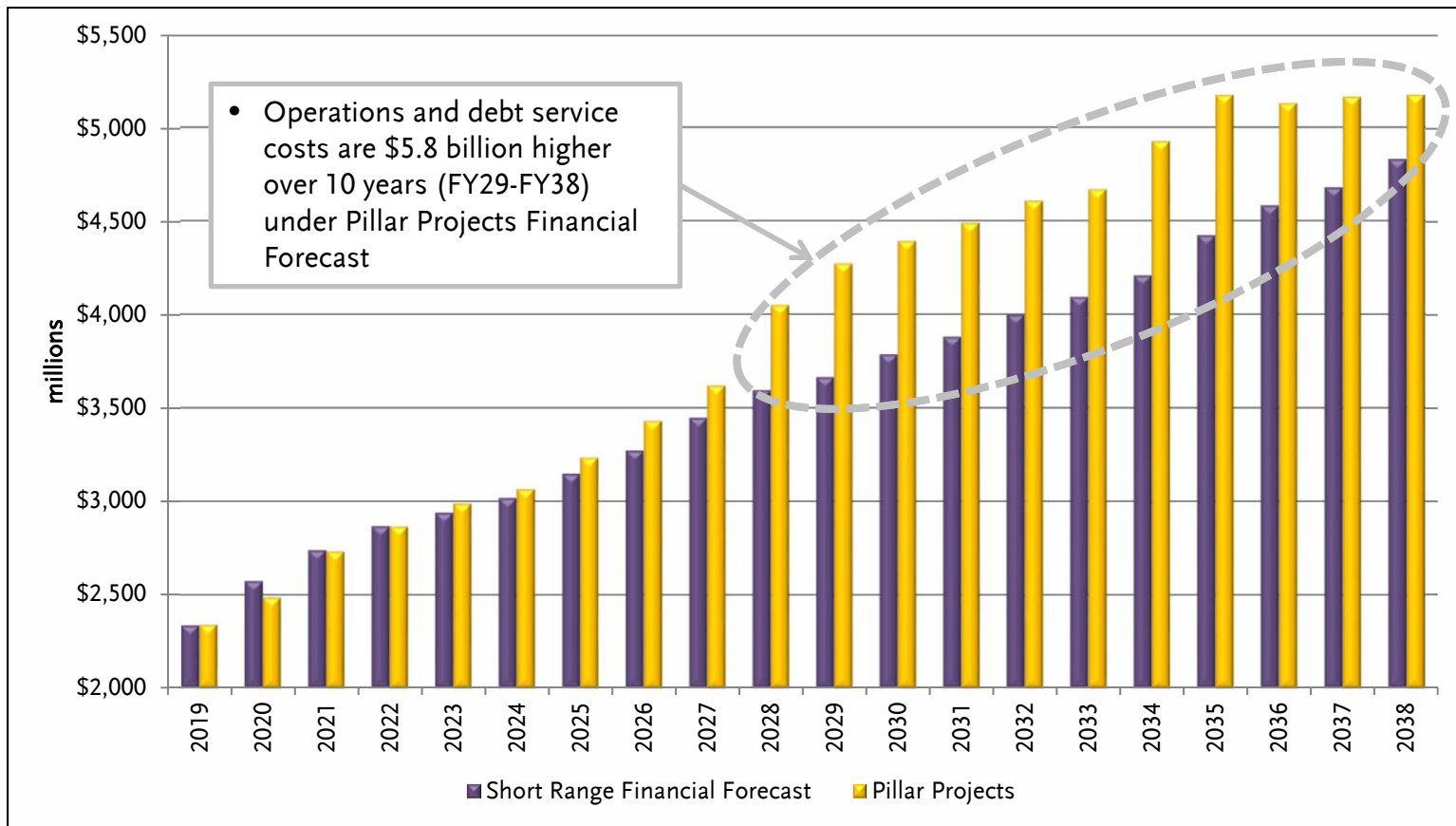
• Not possible to accelerate; Metro must apply for future grant cycles.

## Increased Debt Financing

- The amount of debt financing is \$10.0 billion greater
- This occurs because:
  - Metro receives a limited amount of sales tax each year
  - Planned new federal grants payout a limited amount each year
- Subordinate debt would be required



# Operations and Debt Service Comparison



# Constructability Analysis

- Environmental and engineering work must be accelerated
- Construction must begin by 2023
- Faster regulatory review and approval is key
- Current market conditions are increasing pricing

## Actions That Metro Can Take

- Pursue new revenue
- Reevaluate Board policy
- Change project delivery process
- Change regulatory process



## Board Report

File #: 2019-0202, File Type: Contract

Agenda Number: 32.

### CONSTRUCTION COMMITTEE JULY 18, 2019

**SUBJECT: EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR**

**ACTION: NEGOTIATE AND EXECUTE PROFESSIONAL SERVICES CONTRACT**

#### **RECOMMENDATION**

AUTHORIZE:

- A. the Chief Executive Officer to negotiate and execute a cost-plus fixed fee Contract No. AE58083E0129 with Gannett Fleming to perform professional services including design advancement for the design build delivery process, support during the solicitation process, and design support during construction for the East San Fernando Valley Transit Corridor Project in an amount not-to-exceed \$61,974,852, subject to resolution of any protests; and
- B. Contract Modification Authority in the amount of \$12,394,970 (20% of the not-to-exceed contract value) and authorize the CEO to execute individual Contract Modifications within the Board approved Contract Modification Authority.

#### **BACKGROUND**

The East San Fernando Valley (ESFV) Transit Corridor Project (Project) is a light rail system that will extend north from the Van Nuys Metro Orange Line station to the Sylmar/San Fernando Metrolink Station, a total of 9.2 miles. Light rail trains will operate in the median of Van Nuys Boulevard for 6.7 miles to San Fernando Road. From there, they will transition onto existing Metro right-of-way and follow a shared corridor with Metrolink and freight for 2.5 miles to the Sylmar/San Fernando Metrolink Station.

The environmental document includes 14 at-grade stations with an end-to-end travel time of approximately 37 minutes. Daily boarding is anticipated to exceed 30,000 by the year 2040. Currently, ridership volume on Metro buses operating along Van Nuys Blvd is significant, only slightly behind ridership volumes on the Metro Orange Line. Stations will be strategically located to access the Orange Line and in close proximity to Metro Local and Rapid east/west bus service to enable convenient connections.

On June 28, 2018, the Metro Board approved the Locally Preferred Alternative (LPA) as Alternative 4:

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Light Rail Transit (LRT). The Final Environmental Impact Statement (EIS) / Environmental Impact Report (EIR) are expected to be presented to the Metro Board for certification in winter 2019 along with the FTA issuing a Record of Decision (ROD).

Groundbreaking for construction is scheduled to begin in 2022 with substantial completion in 2028, enabling the Project to be open for the 2028 Summer Olympic and Paralympic Games. The schedule for completing preliminary engineering and preparing solicitation documents will be critical to achieve groundbreaking in 2022 and completion in time for the Olympics.

## **ISSUE**

Five (5) bidders responded to a request for proposal for professional services for the ESFV project to advance the design, provide technical support and provide design services during construction. Staff has reviewed the proposals and is recommending the subject firm as best qualified to provide the required work based on the selection criteria. The scope of work for the Project will consist of advancing the design (Phase 1), solicitation support (Phase 2), and design services during construction (Phase 3). The following explains the three phases:

### **1. Phase 1 - Design Advancement to Support DB Delivery**

The ESFV Consultant shall advance the design of the Project's LPA for incorporation into the Design Build (DB) technical documents. It is anticipated Phase 1 will take approximately 24 months to complete. This phase also includes supporting a separate contract for advanced utility relocation, which is anticipated to take approximately 6 months and overlaps with advancing the mainline design. The ESFV Consultant shall also coordinate with other Metro contracts and consultants, such as the Metro Orange Line Improvements Project, Sepulveda Transit Corridor, Metro Outreach Consultant and Metro Systems Consultant.

### **2. Phase 2 - Design Build Solicitation Support**

The ESFV Consultant shall provide support to Metro during the solicitation process for a design build contractor, such as developing technical documents for the contract solicitation, participating in the pre-proposal/bid conference and providing responses to Metro staff for bidders'/proposers' technical questions. It is anticipated Phase 2 will span over approximately 12 months after Phase 1 concludes.

### **3. Phase 3 - Design Support During Construction**

The ESFV Consultant shall provide design services during construction to Metro during the construction of the Project. These tasks include reviewing and responding to Request for Information (RFI's) and submittals; attending construction meetings; support installation oversight

and integration support. It is anticipated Phase 3 will span over approximately 72 months (6 years) after Phase 2 concludes and that the ESFV Consultant shall be in the field at a Metro shared facility.

In addition to the phases described above, staff anticipates engineering may be needed for items such as first-last-mile, and geotechnical investigations. Further engineering work may also be required to produce a separate package beyond the scope of this authorization for advanced utility relocation. Staff may return to the Board at a later date to seek authorization for funding to pursue these items.

Commencement of each Phase of the work will be contingent upon written authorization by the Metro Contracting Officer to proceed. In addition, Metro staff is analyzing the potential for this Project to be delivered as a Public Private Partnership (P3). If the Metro Board determines that this Project will be a P3, Metro staff will work with the ESFV Consultant to determine the course of action required for developing a P3 procurement.

This Board Action requests authorization in the amount of \$74,369,822 including \$61,974,852 for the ESFV Consultant contract and \$12,394,970 for contract modification authority. The Small Business Enterprise goal for this Professional Services contract is 25% and the Disabled Veteran Business Enterprise is 3%.

### **DETERMINATION OF SAFETY IMPACT**

Approval of this item will have no impact on safety.

### **FINANCIAL IMPACT**

This project is funded on a fiscal year basis under Project number 465521 East San Fernando Valley Transit Corridor, cost center 8510, under various accounts including Professional/Technical Services. This Contract is authorized to expend up to a cumulative amount of \$21.2M through the FY19 and FY20 49 period. This is a multi-year project requiring expenditure authorizations in fiscal year increments until a Board Authorized Life of Project Budget is adopted. It is the responsibility of the Cost Center Manager, Project Manager and Chief Program Management Officer to budget for this project in the future fiscal years and within the cumulative budget limit for the affected fiscal year.

Sources of funds for the recommended actions are Measure M 35% and State Grants. There is no impact to Operations eligible funding. No other funds were considered.

### **ALTERNATIVES CONSIDERED**

The Board may choose not to execute this Contract. This alternative is not recommended as this

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would delay advancing design and construction, and ultimately opening of the ESFV project within the 2028 schedule.

### **NEXT STEPS**


Upon Board approval, this Professional Services Contract and Phase 1, advancement of the design to support the DB procurement process, will begin and conclude in approximately 24 months. Phase 2, support for DB procurement, will commence after written authorization from Metro Contracting Officer and conclude in approximately 12 months. In 2022, the conclusion of Phase 2, the selected DB contractor will commence groundbreaking and Phase 3 for this Contract will begin. In 2028, the Project will be in service and this Contract will end.

### **ATTACHMENTS**

Attachment A - Procurement Summary  
Attachment B - DEOD Summary  
Attachment C - Contract schedule

Prepared by: Rick Meade, Senior Executive Officer, (213) 922-7917

Reviewed by: Richard Clarke, Chief Program Management Officer, (213) 922-7557  
Debra Avila, Chief Vendor/Contract Management Officer (213) 418-3051



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Phillip A. Washington  
Chief Executive Officer

## PROCUREMENT SUMMARY

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR PROJECT  
AE58083E0129

1.	<b>Contract Number:</b> AE58083E0129	
2.	<b>Recommended Vendor:</b> Gannett Fleming, Inc.	
3.	<b>Type of Procurement (check one):</b> <input type="checkbox"/> IFB <input type="checkbox"/> RFP <input checked="" type="checkbox"/> RFP-A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	<b>Procurement Dates:</b>	
	<b>A. Issued:</b> November 16, 2018	
	<b>B. Advertised/Publicized:</b> November 18, 2018	
	<b>C. Pre-Proposal Conference:</b> December 11, 2018	
	<b>D. Proposals Due:</b> March 18, 2019	
	<b>E. Pre-Qualification Completed:</b> July 1, 2019	
	<b>F. Conflict of Interest Form Submitted to Ethics:</b> June 6, 2019	
	<b>G. Protest Period End Date:</b> Est. July 22, 2019	
5.	<b>Solicitations Picked up/Downloaded:</b> 41	<b>Proposals Received:</b> 5
6.	<b>Contract Administrator:</b> Helen Gates-Bryant	<b>Telephone Number:</b> 213-922-1269
7.	<b>Project Manager:</b> Monica Born	<b>Telephone Number:</b> 213-418-3097

**A. Procurement Background**

This Board Action is to approve Contract No. AE58083E0129 issued in support of the East San Fernando Valley Transit Corridor Project, a proposed light rail system that will extend north from the Van Nuys Metro Orange Line Station to the Sylmar/San Fernando Metrolink Station, a total of 9.2 miles. The project will be delivered in three phases: Preliminary Engineering (PE); Solicitation Support (SS); and Design Support During Construction Services (DSDC). Board approval of contract award is subject to resolution of any properly submitted protest.

The RFP was issued in accordance with Metro's Acquisition Policy and California Government Code §4525-4525.9. The contract type is a Cost Reimbursable, specifically a Cost Plus Fixed Fee.

Eight (8) amendments were issued during the solicitation phase of this RFP:

- Amendment No. 1, issued on December 10, 2018 clarified location of Pre-Proposal Conference;
- Amendment No. 2, issued on December 17, 2018 clarified time proposals are due;
- Amendment No. 3, issued on December 21, 2018 clarified proposal due date;
- Amendment No. 4, issued on February 4, 2019 changed the date proposals were due;



- Amendment No. 5, issued on February 8, 2019 clarified/revise solicitation document (including submittal requirements, SOW, and evaluation criteria)
- Amendment No. 6, issued on February 12, 2019 clarified/revise solicitation document (including submittal requirements and evaluation criteria)
- Amendment No. 7, issued on February 22, 2019 to change the date proposals were due
- Amendment No. 8, issued on February 25, 2019 clarified/revise solicitation documents (including submittal requirements, and evaluation criteria)

A total of five (5) proposals were received on March 18, 2019. Metro held a pre-proposal conference on December 11, 2018, with a total of seventy (70) people in attendance. Metro had representation from the Risk Management, Ethics, Pre-Qualification, Project Management and DEOD, to highlight the main elements of the RFP including the Small Business Enterprise (SBE) goal of twenty-five percent (25 %) and the Disabled Veteran Business Enterprise (DVBE) goal of three (3%) of the Total Estimated Cost. A total of forty-four (44) questions were received between the issuance of the solicitation and the RFP due date. All questions were addressed by four (4) separate Question and Answer memorandums and the Amendments listed above.

On April 30, 2019, Metro held Oral Presentations with all five (5) proposing firms, at which time Metro received five (5) sealed cost proposals that remain unopened.

**B. Evaluation of Proposals**

A Proposal Evaluation Team (PET) consisting of staff from Executive Office, Transit Project Delivery; Transportation Planning, Systemwide; Executive Office, Transit Operations; Engineering Management; and Regional Rail, Project Engineering was convened and conducted a comprehensive technical evaluation of the proposals received.

The proposals were evaluated based on the following evaluation criteria and weights:

- Experience and Capabilities of the Firms on the Consultant’s Project Team 15 percent
- Key Personnel’s Skills and Experience 35 percent
- Effectiveness of Management Plan 20 percent
- Understanding of Work and Appropriateness of Approach for Implementation 25 percent
- Innovation 5 percent

The evaluation criteria are appropriate and consistent with criteria developed for other, similar Architect and Engineers (A&E) procurements. Several factors were considered when developing these weights, giving the greatest importance to the skills and experience of key personnel, particularly the Project Manager's technical and managerial experience, and capabilities on similar projects and phases of work. The understanding and approach to implementing the work, with emphasis on maintaining schedule and budget in managing the three phases of the project.

This is an A&E, qualifications based procurement; therefore, price cannot be used as an evaluation factor pursuant to state and federal law.

Of the five (5) proposals received, all five (5) were determined to be within the competitive range. The five (5) firms are listed below in alphabetical order:

1. AECOM
2. East Valley Transit Partnership (Joint Venture of HNTB Corporation; Parsons Transportation Group; and Valle & Associates)
3. Gannett Fleming, Inc.
4. Mott MacDonald LLC & STV, Joint Venture
5. Valley First Transit Partners (Joint Venture of WSP USA, Inc.; KOA Corporation; and RAW International)

All appointed PET representatives reviewed a list of the Proposers and their subconsultants; none were aware of any actual or potential conflict of interest that may arise due to their participation in the evaluation of the Proposals, then completed and certified the Declaration of Confidentiality / No Conflict of Interest form.

During the oral presentations, in general, each team's presentation addressed the requirements of the RFP, experience with all aspects of the required tasks, and stressed each firm's commitment to the success of the project. Also highlighted were staffing plans, work plans, and perceived project issues. Each team was asked questions relative to each firm's proposed alternatives and previous experience.

The PET evaluated and scored the capabilities of each proposer and its team of subconsultants, in accordance with the Evaluation Criteria in the RFP Documents.

### **Qualifications Summary of Recommended Firm:**

The PET ranked the proposals and assessed major strengths, weaknesses and associated risks of each of the Proposers to determine the most qualified firm. The evaluation performed by the PET determined Gannett Fleming, Inc., as the most qualified firm to provide Preliminary Engineering (PE), Solicitation Support (SS), and Design Support During Construction (DSDC), as provided in the RFP Scope of Services. What distinguished Gannett Fleming, Inc. was they demonstrated, through their written proposal and oral presentation, their extensive technical experience performing PE, SS and DSDC services and significant expertise in meeting the street-running, shared use corridor challenges identified in the Scope of Services. Gannett Fleming, Inc. also demonstrated an exceptionally thorough and comprehensive understanding of managing multiple deliverables. The team is highly experienced in delivering similar projects with an excellent record in client satisfaction on Metro projects Division 16 Southwestern Yard, Regional Connector, Willowbrook/Rosa Parks Station Improvements and similar projects around the U.S.

Furthermore, the recommended team demonstrated that it is versed in providing the Scope of Services related to this contract, and has the capabilities to provide staffing for the type of work that is required under this contract. Gannett Fleming, Inc. exceeds the requirements of the three highest weighted criteria. It shows the Team is exceptionally thorough and has a comprehensive understanding of Metro’s goals and methods, and resource allocation.

1	Firm	Average Score	Factor Weight	Weighted Average Score	Rank
2	<b>Gannett Fleming, Inc.</b>				
3	Experience and Capabilities of the Firms on the Consultant’s Project Team	84.20	15.00%	12.63	
4	Key Personnel’s Skills and Experience	86.26	35.00%	30.19	
5	Effectiveness of Management Plan	88.26	20.00%	17.65	
6	Understanding of Work and Appropriateness of Approach for Implementation	86.53	25.00%	21.63	
7	Innovation	73.40	5.00%	3.67	
8	<b>Total</b>		<b>100.00%</b>	<b>85.77</b>	<b>1</b>
9	<b>Mott MacDonald/STV, JV</b>				
10	Experience and Capabilities of the Firms on the Consultant’s Project Team	81.46	15.00%	12.22	
11	Key Personnel’s Skills and Experience	83.26	35.00%	29.14	

12	Effectiveness of Management Plan	82.40	20.00%	16.48	
13	Understanding of Work and Appropriateness of Approach for Implementation	84.86	25.00%	21.22	
	Innovation		5.00%	4.05	
14	<b>Total</b>		<b>100.00%</b>	<b>83.11</b>	<b>2</b>
15	<b>East Valley Transit Partnership, JV</b>				
16	Experience and Capabilities of the Firms on the Consultant's Project Team	87.26	15.00%	13.09	
17	Key Personnel's Skills and Experience	80.80	35.00%	28.28	
18	Effectiveness of Management Plan	82.33	20.00%	16.47	
19	Understanding of Work and Appropriateness of Approach for Implementation	80.60	25.00%	20.15	
	Innovation	86.00	5.00%	4.30	
20	<b>Total</b>		<b>100.00%</b>	<b>82.29</b>	<b>3</b>
20	<b>Valley First Transit Partners</b>				
21	Experience and Capabilities of the Firms on the Consultant's Project Team	83.53	15.00%	12.53	
22	Key Personnel's Skills and Experience	83.80	35.00%	29.33	
23	Effectiveness of Management Plan	78.93	20.00%	15.79	
24	Understanding of Work and Appropriateness of Approach for Implementation	82.60	25.00%	20.65	
	Innovation		5.00%	3.94	
25	<b>Total</b>		<b>100.00%</b>	<b>82.24</b>	<b>4</b>
26	<b>AECOM</b>				
27	Experience and Capabilities of the Firms on the Consultant's Project Team	84.60	15.00%	12.69	
28	Key Personnel's Skills and Experience	78.73	35.00%	27.56	
29	Effectiveness of Management Plan	78.66	20.00%	15.73	
30	Understanding of Work and Appropriateness of Approach for Implementation	86.46	25.00%	21.62	
31	Innovation	86.00	5.00%	4.30	
32	<b>Total</b>		<b>100.00%</b>	<b>81.90</b>	<b>5</b>

### **C. Cost Analysis**

The recommended cost has been determined to be fair and reasonable based upon a cost analysis of labor rates, indirect rates and other direct costs completed in accordance with Metro's Procurement Policies and Procedures. The analysis includes, among other things, a comparison with similar firms; an analysis of rates and factors for labor, and other direct cost upon which the consultant will base its billings. Metro negotiated and established provisional indirect (overhead) rates, plus a fixed fee based on the total estimated cost for the contract term to compensate the consultant. Additionally, direct labor (level of effort) was reduced in several disciplines within the scope of services. This in turn reduced overhead costs, subconsultant costs and fixed fee for the prime and subconsultants.

Audits will be completed, where required, for those firms without a current applicable audit of their indirect cost rates, other factors, and exclusion of unallowable costs, in accordance with Federal Acquisition Regulation (FAR) Part 31. In order to prevent any unnecessary delay in contract award, provisional overhead rates have been established subject to Contract adjustments. In accordance with FTA Circular 4220.1 f, if an audit has been performed by any other cognizant agency within the last twelve month period, Metro will receive and accept that audit report for the above purpose rather than perform another audit.

<b>Proposer Name</b>	<b>Proposal Amount</b>	<b>Metro ICE</b>	<b>Recommended NTE amount</b>
Gannett Fleming, Inc.	\$120,104,664.09	\$68,620,182.23	\$61,974,852

### **D. Background on Recommended Contractor**

The recommended firm, Gannett Fleming, Inc., located in Los Angeles, California, has been in business for 104 years and is a leader in the delivery of light rail transit projects. Gannett Fleming, Inc. ranks #8 for Mass Transit and Rail and has delivered a number of LRT projects in urban settings, similar to the location of the ESFV project. Additionally, their experience includes P3/Design Build, street-running and shared-use projects which are important elements within the scope of this project.

Gannett Fleming, Inc. has been delivering light rail systems in Los Angeles County for nearly 40 years, and the identified Project Manager, has successfully delivered Design Build light rail systems for more than 20 years. The multidisciplinary team includes 20 subconsultants that have a vast knowledge and experience with Metro, including work on the Metro Regional Connector Transit Corridor Project, the Crenshaw Southwestern Yard Division 16 Maintenance Facility, Willowbrook/Rosa Parks Station Improvements.

The Project Manager has managed large teams and transitioning light rail projects into viable transportation systems for 30 years. Delivering four operating Design

Build light rail projects on the Metro system. Served as Project Manager on the Pasadena Gold Line LRT, and Gold Line Eastside Extension LRT, as well as the Chief Project Officer on the Exposition Phase1 and Phase 2 LRT. The Project Manager's commitment to this project will be 100% availability.

The LRT Design Manager and the Project Manager have worked together for more than eight years, including Phase 2 of the Exposition LRT Project. The Station and Urban Design Manager has delivered transit projects in Los Angeles for the last 10 years. He currently serves as the design lead for Metro's Orange Line Grade Separation project and served as the Project Director for the Willowbrook/Rosa Parks Transit Station. Other Leads or Key Members of the team with multiple years of has experience working with Metro and in Los Angeles County, are the Maintenance Facility Design Manager, the Project Management and Controls Manager; and the Quality Control/Quality Assurance Manager.

## DEOD SUMMARY

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR /  
AE58083E0129**A. Small Business Participation**

The Diversity and Economic Opportunity Department (DEOD) established a 25% Small Business Enterprise (SBE) goal and a 3% Disabled Veteran Business Enterprise (DVBE) goal for this solicitation. Gannett Fleming, Inc. exceeded the goals by making a 25.29% SBE commitment and a 5.54% DVBE commitment.

<b>SMALL BUSINESS GOAL</b>	<b>25% SBE 3% DVBE</b>	<b>SMALL BUSINESS COMMITMENT</b>	<b>25.29% SBE 5.54% DVBE</b>
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	<b>SBE Subcontractors</b>	<b>% Committed</b>
1.	BA, Inc.	1.66%
2.	Diaz Consultants, Inc, dba Diaz Yourman & Associates	1.44%
3.	FPL & Associates, Inc.	5.96%
4.	Here Design Studio, LLC (Here LA)	0.60%
5.	Lenax Construction Services, Inc. (LENAX)	0.29%
6.	PacRim Engineering, Inc.	2.18%
7.	Ramos Consulting Services, Inc.	8.27%
8.	Sanchez/Kamps Associates Design dba SKA Design	0.59%
9.	Zephyr UAS, Inc.	4.30%
	<b>Total SBE Commitment</b>	<b>25.29%</b>

	<b>DVBE Subcontractors</b>	<b>% Committed</b>
1.	Casamar Group, LLC	5.54%
	<b>Total DVBE Commitment</b>	<b>5.54%</b>

**B. Prevailing Wage Applicability**

Prevailing Wage requirements are applicable to this project. DEOD will monitor contractors' compliance with the State of California Department of Industrial Relations (DIR), California Labor Code, and, if federally funded, the U S Department of Labor (DOL) Davis Bacon and Related Acts (DBRA). Trades that may be covered include: surveying, potholing, field, soils and materials testing, building construction inspection, construction management and other support trades.

**C. Living Wage Service Contract Worker Retention Policy Applicability**

The Living Wage / Service Contract Worker Retention Policy is not applicable to this contract.

**D. Project Labor Agreement/Construction Careers Policy**

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. Project Labor Agreement/Construction Careers Policy is applicable only to construction contracts that have a construction contract value in excess of \$2.5 million.



ESFV Consultant Schedule

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Phase 1		24 months									
Phase 2			12 months								
Phase 3				72 months							



## Board Report

File #: 2019-0480, File Type: Contract

Agenda Number: 34.

### CONSTRUCTION COMMITTEE JULY 18, 2019

**SUBJECT: AIRPORT METRO CONNECTOR**

**ACTION: APPROVE RECOMMENDATIONS**

#### **RECOMMENDATION**

AUTHORIZE:

- A. The Chief Executive Officer to execute a 5-year cost-plus fixed fee Contract No. PS58330MC075 with KDG+DE Construction Support Services to provide Construction Support Services for the Airport Metro Connector (AMC) 96th Street Transit Station Project, in an amount not-to-exceed \$25,943,154.86 and exercise 2 one-year options, when deemed appropriate; and
- B. Contract Modification Authority in the amount of \$5,188,630.97 or 20% of the not-to-exceed contract award value and authorize the CEO to execute individual Contract Modifications within the Board approved Contract Modification Authority.

#### **ISSUE**

A Construction Support Services Consultant (CSSC) is required to assist Metro Project staff in management oversight for construction of the AMC 96th Street Transit Station Project. Services will be provided from final design through pre-construction activities, construction, and contract close out.

The recommended Board action will provide funding through FY24 when construction of the Project must be complete in order to open for public service on the same schedule with Los Angeles World Airport's (LAWA) Automated People Mover.

#### **BACKGROUND**

On July 15, 2015, the Metro Board of Directors approved the award of a design contract for the AMC 96th Street Transit Station Project. This new Metro station that will be owned and operated by Metro is planned to connect with LAWA's future Automated People Mover (APM) system and the Crenshaw/LAX and Green line light rail systems. The APM will provide direct service to and from the AMC station and the terminal area at Los Angeles International Airport (LAX). The design for the AMC 96th Street Transit Station requires extensive coordination with LAWA during the environmental

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review, design and construction phases with particular focus on integration with LAWA's APM system.

## **DISCUSSION**

### Findings

AMC is a design-bid-build project, meaning that all design plans and specifications will be 100% completed by Metro's design consultants prior to award of a construction contract. As such, it is beneficial to have additional technical reviews of those technical bid documents by a consultant team to minimize risks to Metro during construction. The CSSC consultant will provide review support of the technical bid documents, administration, inspection services and technical support during final design, the bid period, construction, and close out phases of the project. The CSSC consultant will provide skilled individuals to assist Metro with the construction management of the project. The consultant team will reside in an integrated project field office with Metro staff.

### Considerations

The Board could direct Metro staff to perform construction support tasks with current in-house resources. However, this alternative would require Metro to divert resources from on-going projects and/or hire multiple full-time personnel that are not immediately available or funded. KDG + DE was selected based on qualification and price criteria used to evaluate a total of eight proposers. They have the experience and competence in construction support services, design-bid-build and integrated team structures on some of the most challenging and complex projects in Los Angeles County. In addition, a number of these projects are similar in scope to the Airport Metro Connector / 96th Street Transit Station.

## **DETERMINATION OF SAFETY IMPACT**

Approval of this item will have no impact on safety.

## **FINANCIAL IMPACT**

This project is funded on a fiscal year basis under Project number 860303 Airport Metro Connector Project (AMC), cost center 8510, under various accounts including Professional/Technical Services and ROW acquisitions. The CSSC contract work scope is planned and funded on an annual basis until the Life of Project Budget is established. The project is authorized to expend up to a cumulative amount of \$159.9M through the FY20 period. Approval of the recommendations will provide funding for the award of the Construction Support Services Consultant contract through FY24. This is a multi-year project requiring expenditure authorizations in fiscal year increments until a Board Authorized Life of Project Budget is adopted. It is the responsibility of the Project Manager and Chief Program Management Officer to budget for this project in future fiscal years.

### Impact to Budget

Through FY19, the sources of funds for the recommended actions are Measure M 35% and Cap & Trade Transit and Intercity Rail Capital Program (TIRCP). There is no impact to Operations eligible

funding. No other funds were considered.

### **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Approval of this recommendation supports the following Metro Strategic Plan Goal 1: Provide high quality mobility options that enable people to spend less time traveling. This contract action will help expand the transportation system with targeted infrastructure and service investments.

### **ALTERNATIVES CONSIDERED**

The Board could direct Metro staff to perform construction support tasks with current in-house resources. This alternative would require Metro to divert resources from on-going projects and/or hire multiple full time personnel that are not immediately available or funded.

### **NEXT STEPS**

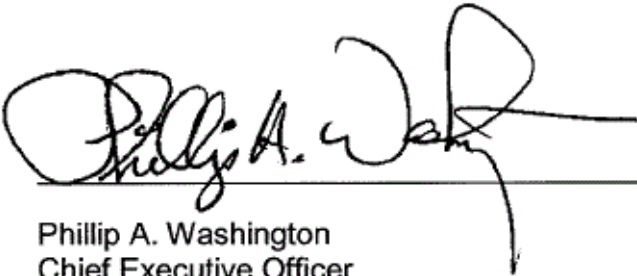
After Board approval of the recommended action, staff will complete the process to award and execute Contract No. PS58330MC075.

### **ATTACHMENTS**

Attachment A - Procurement Summary  
Attachment B - DEOD Summary

Prepared by: Robert Rincon, Deputy Executive Officer, Transit Project Delivery (213) 922-5451  
Timothy P. Lindholm, Executive Officer, Program Management (213) 922-7297  
Deneise Glover, Principal Contract Admin, Vendor/Contract Management (213) 922-5450

Reviewed by: Richard Clarke, Chief Program Management Officer (213) 922-7557  
Debra Avila, Chief Vendor/Contract Management Officer (213) 418-3051



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Phillip A. Washington  
Chief Executive Officer

## PROCUREMENT SUMMARY

**AIRPORT METRO CONNECTOR/96<sup>TH</sup> STREET TRANSIT STATION  
CONSTRUCTION SUPPORT SERVICES CONSULTANT  
CONTRACT NUMBER PS58330MC075**

1.	<b>Contract Number:</b> PS58330MC075	
2.	<b>Recommended Vendor:</b> KDG+DE Construction Support Services	
3.	<b>Type of Procurement (check one):</b> <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	<b>Procurement Dates:</b>	
	A. <b>Issued:</b> November 19, 2018	
	B. <b>Advertised/Publicized:</b> November 21, 2018	
	C. <b>Pre-Proposal Conference:</b> December 4, 2018	
	D. <b>Proposals Due:</b> January 9, 2018	
	E. <b>Pre-Qualification Completed:</b> May 16, 2019	
	F. <b>Conflict of Interest Form Submitted to Ethics:</b> June 6, 2019	
	G. <b>Protest Period End Date:</b> July 22, 2019	
5.	<b>Solicitations Picked up/Downloaded:</b> 175	<b>Proposals Received:</b> 8
6.	<b>Contract Administrator:</b> Deneise Glover	<b>Telephone Number:</b> 213-922-5450
7.	<b>Project Manager:</b> Robert Rincon	<b>Telephone Number:</b> 213-922-5451

**A. Procurement Background**

This Board Action is to approve Contract No. PS58330MC075, Construction Support Services Consultant Contract, for the construction of the AMC 96<sup>th</sup> Street Station Project for the connection to a future Automated People Mover (APM) to be built and operated by Los Angeles World Airports (LAWA).

The RFP was issued in accordance with Metro's Acquisition Policies and Procedures. Metro held a pre-proposal conference on December 4, 2018, in the Henry Huntington Conference Room on the 3rd floor of the Gateway Building. There were fifty one (51) representatives from various firms that attended the pre-proposal conference. One hundred seventy five (175) individuals from various firms picked up or downloaded the RFP Package.

Six amendments were issued during the solicitation phase of this RFP:

- Amendment No. 1, issued on November 20, 2018, to revised Submittal Requirements.
- Amendment No. 2, issued on November 27, 2018, to extend the due date.
- Amendment No. 3, issued on December 4, 2018, added various SBE/DVBE and submittal forms.
- Amendment No. 4, issued December 17, 2018, to extend the due date.
- Amendment No. 5, issued December 21, 2018, to revise Letter of Invitation,

Scope of Services, and revise Submittal Requirements.

- Amendment No. 6, issued December 24, 2018, to revise Submittal Requirements.

A total of eight (8) proposals were received on January 9, 2019, from the following firms, in alphabetical order:

1. ABA Global, Inc.
2. AECOM Technical Services, Inc.
3. Jenkins/Gales & Martinez, Inc.
4. KDG+DE Construction Support Services
5. Link2LA Partners, a Joint Venture
6. Marrs-Morgner Joint Venture
7. Safework, Inc., DBA SafeworkCM
8. STV Construction, Inc.

**B. Evaluation of Proposals**

A Proposal Evaluation Team (PET) consisting of staff from Metro Project Management and Project Engineering was convened and conducted a comprehensive evaluation of the proposals received.

The proposals were evaluated based on the following evaluation criteria and the associated weightings:

- Experience and Capabilities of the Firms Team..... (30%)
  - Key Personnel’s Skills and Experience..... (25%)
  - Project Understanding and Approach..... (35%)
  - Cost Proposal ..... (10%)
- Total 100%

The evaluation criteria are appropriate and consistent with criteria developed for other Professional Service procurements. Several factors were considered when developing the weightings, giving the greatest importance to the Project Understanding and Approach and Experience and Capabilities of the Firms Team and Key Personnel’s Skills and Experience.

During the months of January, February and March 2019, the PET evaluated the eight (8) written proposals. Of the eight (8) proposals received, four (4) were determined to be within the competitive range. The four (4) firms within the competitive range are listed below in alphabetical order:

1. AECOM Technical Services, Inc.
2. KDG+DE Construction Support Services
3. Link2LA Partners, a Joint Venture
4. Safework, Inc., DBA SafeworkCM

Four (4) firms were determined to be outside the competitive range and were not included for further consideration. Those firms were notified of the determination.

On April 16, 2019, the PET met with four (4) Proposers in the competitive range for oral presentations. The firms were given the opportunity to present on:

- 1) Effectiveness of Management Plan and 2) Understanding of Work and Appropriateness of Approach for Implementation.

The proposing firms had the opportunity to present their proposed project managers, key personnel, and some of their key members, as well as respond to the PET's questions. In general each presentation addressed the requirements of the RFP, experience with all aspects of the required and anticipated tasks, and stressed each proposer's commitment to the success of the contract.

### **Qualifications Summary of Firms within the Competitive Range:**

#### **KDG+DE Construction Support Services**

- KDG+DE's experience included a comprehensive understanding of facility and vertical construction.
- The Proposer has knowledge of LAWA program that is beneficial to Metro on AMC.
- KDG+DE's Systems RE and Inspector have a solid background and a thorough comprehensive understanding of the essential aspect of the project.
- The proposer integrates staff and promotes teamwork so it demonstrates a high probability of success.
- Project Manager showed exceptional understanding of resources, goals, schedules and stakeholders.
- The KDG+DE team showed amazing synergy in interviews. Answered all questions completely and with a thorough understanding of project.
- KDG+DE's proposal significantly exceeds the RFP minimum requirements in most areas. The proposed approach indicates an exceptionally thorough and comprehensive understanding of the contract goals, resources, schedules, and other aspects essential to a successful performance of the RFP.

#### **Safework, Inc., DBA SafeworkCM**

- The PM has extensive experience with Metro procedures and requirements, both of which demonstrates a thorough knowledge of project methods.

- The Administrative PM appears to have some facility experience which would be beneficial to advise Metro on AMC.
- The Proposer shows a positive attitude toward teamwork and relationships a significant factor for project success.
- The Proposer has extensive Metro and LAWA experience. This is a major strength for this project.

#### **AECOM Technical Services, Inc.**

- AECOM's proposal substantially meets the RFP minimum requirements in most major areas. The proposed approach indicates a thorough and comprehensive understanding of the contract goals, resources, schedules, and other aspects essential to the performance of the Services.
- The firm's proposal demonstrates a thorough understanding essential to the performance of the contract.
- The firm demonstrates successful experience with similar program type projects with other agencies.

#### **Link2LA Partners, a Joint Venture**

- Link2LA Partners, a Joint Venture's proposal substantially meets the RFP minimum requirements in most major areas. The proposed approach indicates a thorough and comprehensive understanding of the contract goals, resources, schedules, and other aspects essential to the performance of the Services.
- Good project experience on active rail yard.
- The firm's proposal lists technical knowledge and background of the AMC and familiarity with Metro exhibits a comprehensive understanding of the project.
- The firm demonstrates successful experience with similar program type projects with other agencies.

The Proposal Evaluation Team (PET) scored and ranked the four proposals within the competitive range, based on the evaluation criteria in the RFP, and assessed major strengths, weaknesses and associated risks of each of the Proposers to determine the most advantageous firm. The final scoring was based on evaluation of the written proposals, as supported by oral presentations, and clarifications received from the Proposers. The results of the final scoring are shown below:



1.	Firm	Average Score**	Factor Weight	Weighted Average Score *	Rank
<b>2.</b>	<b>KDG+DE Construction Support Services</b>				
3.	Experience and Capabilities of the Firms Team	89.83	30%	26.95	
4.	Key Personnel's Skills and Experience	89.00	25%	22.25	
5.	Project Understanding and Approach	89.94	35%	31.48	
6.	Cost Proposal	100.00	10%	10.00	
<b>7.</b>	<b>Total</b>		<b>100.0%</b>	<b>90.68</b>	<b>1</b>
<b>8.</b>	<b>Safework, Inc., DBA SafeworkCM</b>				
9.	Experience and Capabilities of the Firms Team	88.26	30%	26.48	
10.	Key Personnel's Skills and Experience	81.68	25%	20.42	
11.	Project Understanding and Approach	89.91	35%	31.47	
12.	Cost Proposal	89.62	10%	8.96	
<b>13.</b>	<b>Total</b>		<b>100.0%</b>	<b>87.33</b>	<b>2</b>
<b>14.</b>	<b>AECOM Technical Services, Inc.</b>				
15.	Experience and Capabilities of the Firms Team	89.10	30%	26.73	
16.	Key Personnel's Skills and Experience	82.68	25%	20.67	
17.	Project Understanding and Approach	88.00	35%	30.80	
18.	Cost Proposal	78.60	10%	7.86	
<b>19.</b>	<b>Total</b>		<b>100.0%</b>	<b>86.06</b>	<b>3</b>
<b>20.</b>	<b>Link2LA Partners, a Joint Venture</b>				
21.	Experience and Capabilities of the Firms Team	89.40	30%	26.82	
22.	Key Personnel's Skills and Experience	79.00	25%	19.75	
23.	Project Understanding and Approach	85.37	35%	29.88	
24.	Cost Proposal	88.04	10%	8.80	
<b>25.</b>	<b>Total</b>		<b>100%</b>	<b>85.25</b>	<b>4</b>

\* Weighted scores are rounded to the nearest second decimal point.

\*\* Cost proposals were based on the Proposers' rates for a sample level of effort of 9,888 hours only. Scores shown above for the cost proposals are based on formulae in the RFP where the highest score going to the lowest cost proposal.

### C. Cost/Price Analysis

Metro performed a cost analysis of labor rates comparing the four (4) proposals in the competitive range with one another as well as Metro's estimate. All proposals were based on direct labor rates, overhead rates, other direct costs, sub-consultant costs and fixed fee. The costs for the recommended firm were determined to be fair and reasonable.

	<b>Proposer Name</b>	<b>Proposal Amount <sup>(1)</sup></b>	<b>Metro ICE <sup>(2)</sup></b>	<b>Recommended NTE Amount <sup>(3)</sup></b>
1.	KDG+DE Construction Support Services	\$25,943,154.86	\$29,137,630.00	\$25,943,154.86
2.	Safework, Inc. DBA SafeworkCM	\$27,597,629.31		
3.	AECOM Technical Services, Inc.	\$33,005,216.58		
4.	Link2LA Partners, a Joint Venture	\$29,531,309.10		

Notes:

- <sup>(1)</sup> The proposal amounts shown were for evaluation purposes only and were based on the rates for a sample level of effort (9,888 hours, only) since there was no definable total level of effort for the Scope of Services. Hourly labor rates, overhead and fee were negotiated and determined to be fair and reasonable.
- <sup>(2)</sup> The amount \$25,943,154.86 is a Not-to-Exceed amount estimated for the basic term of the contract.
- <sup>(3)</sup> The amount of \$25,943,154.86 is the Not-to-Exceed amount for the basic term of the contract. Work will be funded according to an Annual Work Program. The total contract amount will be the aggregate value of all task orders negotiated with the Consultant through the term of the contract.

### D. Background on Recommended Contractor

The recommended firms, KDG, is located in Los Angeles, CA, and has over three decades of supporting both Metro and LAWA. KDG's staff members have over 18 years average experience in construction support services. KDG is a leader in the field of construction support services on behalf of the owners for public works, transit and the various delivery methods.

An established Minority and Women Business Enterprise (MBE/WBE) and a California-certified Small Business Enterprise (SBE), KDG has coordinated and managed the construction of more than \$800 million in public works and capital improvement projects over the past five years. KDG maintains an excellent reputation for leadership and long-term support on projects and its professional staff of civil, mechanical, and electrical engineers, project managers, construction managers, and certified inspectors are committed to delivering technical expertise and the highest level of service while minimizing risk.

Destination Enterprise (DE) was founded in 2005 and has provided construction management services on numerous landmark Metro rail projects including: the Red, Gold, The New Blue, and Purple lines, Expo Phases 1 and 2, and the Crenshaw/LAX Line. These projects all have similar elements to the AMC Station Project.

KDG's professional staff have the experience, capabilities and trust that our clients have come to expect and rely upon. They have a proven background in construction management, design-bid-build and integrated team structures on some of the most challenging and complex projects in Los Angeles County. A number of these projects being similar in scope to the Airport Metro Connector / 96th Street Transit Station. Our wealth of knowledge gained day in and day out directly benefits our Team and ultimately, Metro.

KDG+DE brings a robust staffing capability with longstanding local relationships with professional staff, and dedicated in-house talent management support. They have currently identified over 50 local transit specialists with extensive experience in design-bid-build work within an integrated client/consultant environment. We have identified expert staff in this proposal for the positions specified in Metro's RFP. Moreover, should additional staffing needs arise, our Team has the depth of resources to deliver additional experienced personnel to Metro. KDG+DE is also committed to utilizing Metro's Disadvantage Business Enterprises to meet the SBE goal of 27% and DVBE goal of 3%.

KDG has supported several Metro projects, including the Blue Line, Gold Line Eastside Extension, Green Line and the Red Line. Currently we are providing extensive construction management support to LAWA on the LAMP program. Our portfolio also includes the Tom Bradley International Terminal, the Bob Hope USO Theme Building, and the new Midfield Satellite Concourse.

**DEOD SUMMARY  
AIRPORT METRO CONNECTOR/96<sup>TH</sup> STREET TRANSIT STATION  
CONSTRUCTION SUPPORT SERVICES CONSULTANT /  
CONTRACT NUMBER PS58330MC075**

**A. Small Business Participation**

The Diversity and Economic Opportunity Department (DEOD) established a 27% Small Business Enterprise (SBE) goal and a 3% Disabled Veteran Business Enterprise (DVBE) for this solicitation. KDG+DE, comprised of an SBE Partner firm, Destination Enterprises, Inc., exceeded the SBE goal by making a 48.42% commitment. KDG+DE also exceeded the DVBE goal by making a 7.24% DVBE commitment.

<b>Small Business Goal</b>	<b>27% SBE</b>	<b>Small Business Commitment</b>	<b>48.42% SBE</b>
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	<b>SBE Prime and/or Subcontractors</b>	<b>% Committed</b>
1.	Destination Enterprises, Inc. (SBE Prime Partner)	39.98%
2.	Rohadfox Construction Control Services Corp.	8.44%
	<b>Total Commitment</b>	<b>48.42%</b>

<b>Small Business Goal</b>	<b>3% DVBE</b>	<b>Small Business Commitment</b>	<b>7.24% DVBE</b>
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	<b>DVBE Subcontractors</b>	<b>% Committed</b>
1.	V W & Associates, Inc. dba VIRTEK Company	7.24%
	<b>Total Commitment</b>	<b>7.24%</b>

**B. Living Wage and Service Contract Worker Retention Policy Applicability**

Living Wage and Service Contract Worker Retention Policy is not applicable to this contract.

**C. Prevailing Wage Applicability**

Prevailing Wage requirements are applicable to this project. DEOD will monitor contractors' compliance with the State of California Department of Industrial Relations (DIR), California Labor Code, and, if federally funded, the U S Department of Labor (DOL) Davis Bacon and Related Acts (DBRA). Trades that may be covered include: surveying, potholing, field, soils and materials testing, building construction inspection, construction management and other support trades.

**D. Project Labor Agreement/Construction Careers Policy**

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. Project Labor Agreement/Construction Careers Policy is applicable only to construction contracts that have a construction related value in excess of \$2.5 million.



## Board Report

File #: 2019-0502, File Type: Contract

Agenda Number: 35.

### CONSTRUCTION COMMITTEE JULY 18, 2019

**SUBJECT: SUPPLEMENTAL ENGINEERING SERVICES (SES) CONSULTANT SERVICE CONTRACT**

**ACTION: AWARD PROFESSIONAL SERVICES CONTRACT**

#### **RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to NEGOTIATE and EXECUTE:

- A. A three-year cost plus fixed fee type contract for AE59600 with HDR Engineering, Inc. for Supplemental Engineering Services for Engineering Design of Transit Rail Projects on a task order basis, plus two one-year options. The amount for the three-year base contract is \$50,000,000 and the amount for the two one-year options is \$20,000,000 for a total contract value not to exceed \$70,000,000; subject to resolution of protest(s), if any; and
- B. Individual Task Orders and modifications within the Board approved contract amount.

#### **ISSUE**

Metro's staff engineers, architects and CADD designers in the Engineering Group are currently fully engaged supporting our current Major Rail Transit Projects (Crenshaw, Regional connector and Purple Line sections 1, 2 and 3), Metro Emergency Security Operations Center (ESOC), Metro Capital Improvements projects (CIP) such as the Patsaouras Plaza project and the Willowbrook / Rosa Parks Station Improvement Project and the State of Good Repairs Projects (SOGP) such as the Metro Blue Line (MBL) Signaling Rehabilitation and Operational Improvements project, Metro Orange Line (MOL) Improvements and the I-210 Barriers Replacement project.

The passage of Measure M has added a considerable workload to the Metro Engineering group with projects that are starting or that are completing design in the next five years such as the Airport Metro Connector 96<sup>th</sup> Street Station (AMC), West Santa Ana Branch Transit Corridor, the Gold Line Foothill Extension to Claremont, and the BRT Connector Orange / Red Line to the Gold Line, which all have groundbreakings within the next five years.

In addition, important motions by Board of Directors require considerable engineering work to evaluate the feasibility and develop conceptual alternative designs to validate engineering solutions for the projects called by the motions: This includes, but not limited to the MBL Wardlow Grade

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Separation study, the MBL Washington/ Flower Wye Improvement or Grade Separation, and the Pico Station Grade Separation.

## **BACKGROUND**

The funding limit for our existing Supplemental Engineering Services (SES) contract (Contract No. AE36687) has almost reached its limit. This new SES will enable Metro the flexibility to supplement internal resources on an as-needed basis for the work detailed above, when we either do not have the sufficient capacity, or lack the particular expertise necessary to perform a particular specialty task in a timely manner. Metro Engineering staff does not possess the resources or, in some cases, technical expertise to carry out certain specialized tasks such as Traffic Control Plans, three-dimensional nonlinear soils-structure interaction analysis, Noise and Vibration Control or Corrosion Control. There is not currently a need for full-time resources for these specific specialties. Therefore, it is more efficient to use consultants on an as-needed basis.

## **DISCUSSION**

Metro Engineering has developed this SES Contract to supplement Metro's engineering efforts. The SES consultant team shall be capable of supporting its engineering group's technical disciplines. This Contract will be issued for a term of three years with two one-year optional extensions for a maximum total duration of five years. The Procurement Summary for this Contract is included as Attachment A.

This Contract called for the proposers to demonstrate their capabilities and technical expertise listed in the Statement of Work for this RFP. The technical proficiencies required for this SES contract (AE59600) are very comprehensive and include all engineering and specialties disciplines which Metro may require in support of its projects. These include the following:

### **General Services include:**

1. Preliminary and Final Design of Transit Rail Projects.
2. Design Review Support & Coordination for CIP projects & other special projects.
3. Production of Project Status, Technical and Engineering Reports.
4. Design of Structures, Stations and Guideways.
5. Facilities/Systems Interface Coordination.
6. Surveying Services.
7. Cost Estimating.
8. Intra/Inter Disciplinary Coordination.
9. Scheduling and Cost Management for Task Orders.
10. Post Design Services including; Bid and Design Support during Construction.
11. Administrative Tasks associated with General Engineering Support Services.

### **Specific Rail Facilities and Third Party Utility Design Services include:**

12. Engineering Services for Review and Approval of Metro Projects.
13. Development of Technical Specifications, Drawings and Reference Documents.

14. Engineering Services for support of Metro Rail Operations and Maintenance.
15. Land Surveying and Legal Description.
16. Potholing.
17. Geotechnical Services, Borings and Reports.
18. Civil & Utility Engineering
19. Drainage Design and Hydraulic Calculations.
20. Structural Engineering.
21. Bridges and Aerial Structure Design.
22. Tunnels, Trenches and Underground Station Design.
23. Track Work Engineering, Plan and Profile.
24. CPUC Grade Crossing Application including attendance to field diagnostic meetings.
25. Yard and Shop Rail Maintenance Facility Design.
26. Architectural Design.
27. Station Site Development.
28. Urban Design Integration.
29. Landscape Architecture.
30. Traffic Control Plans including Striping Drawings and Signal Drawings.
31. CADD and MicroStation Drawings.
32. BIM Services and Training.
33. Project Presentation including Three Dimensional Rendering.
34. Corrosion Control Measures and Cathodic Protection.
35. Value Engineering and Cost Reduction.
36. Noise and Vibration Analysis including Site Visits, Measurement and Mitigation.
37. Any other engineering or technical discipline not listed above that is ancillary to the Statement of Work and consistent with the general requirements of an approved Task Order.
38. HVAC design including HVAC and emergency ventilation.
39. Electrical Design.
40. Plumbing Design.
41. Fire Protection Design

### **DETERMINATION OF SAFETY IMPACT**

This SES Contract is not directly related to a specified safety issue. However, the services provided via this SES Contract will reduce Metro's dependency on limited internal resources and, thus, is generally in support of safety initiatives.

### **FINANCIAL IMPACT**

As specific engineering design or support needs arise, task orders will be issued and funded from the associated project budget, upon approval by the responsible Project Manager.

Since this is a multi-year project, the Chief Program Management Officer, Project Managers and respective Cost Center Managers will be responsible for budgeting for costs of future task orders



related to this contract.

**Impact to Budget**

The funding for the task orders are provided by the specific project requiring the services. The source for these funds are in line with the respective projects' funding plans and fund sources may consist of federal and/or state grants as well as local funds. Many of the state of good repair projects are funded with local funding sources that are eligible for rail and bus operations.

**IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Supporting this recommendation supports Metro's strategic plan goal 1. By supporting the recommendation for HDR Engineering, Inc. to provide supplemental engineering services, the Board is supporting strategic plan goal 1 which promotes trip reliability, reduces trip disruptions as well as deliver of world-class transit service by ensuring our transit assets are in a state of good repair.

**ALTERNATIVES CONSIDERED**

1. Solicit qualifications proposals for each individual task when the requirement arises: This alternative is not recommended as it would require extensive additional staff time to process each individual task and would result in project delays due to the lead time required to complete each procurement cycle. Additionally, procuring services on a per-assignment basis would impose significant additional burden on the Engineering and Vendor/Contract Management departments.
2. Utilize existing engineering staff to provide the required technical support: This alternative is also not feasible as Metro's current engineering capacity is fully utilized to support the existing major, CIP and SOGR projects. Due to these commitments, it is anticipated that the current staff would be challenged to provide the necessary additional technical support required for the up-coming capital projects which will be under concurrent development. If this alternative were exercised, Metro would need to hire additional staff with expertise in several currently underrepresented disciplines to perform this work. Such an action is not practical nor cost-effective.

**NEXT STEPS**

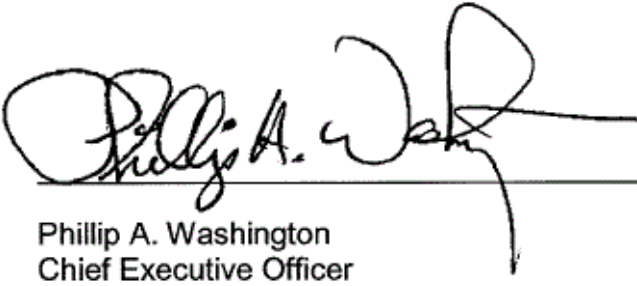
Upon Board approval, staff will complete the process to award the contract. Specific task orders will then be issued on an as needed basis.

**ATTACHMENTS**

Attachment A - Procurement Summary  
Attachment B -DEOD Summary

Prepared by: Androush Danielians, Executive Officer (213) 922-7598

Reviewed by: Debra Avila, Chief Vendor/Contract Management Officer (213) 418-3051  
Richard F. Clarke, Chief Program Management Officer (213) 922-7557



Phillip A. Washington  
Chief Executive Officer

## PROCUREMENT SUMMARY

SUPPLEMENTAL ENGINEERING SERVICES (SES) / TRANSIT RAIL PROJECTS  
AE59600

1.	<b>Contract Number:</b> AE59600	
2.	<b>Recommended Vendor:</b> HDR Engineering, Inc.	
3.	<b>Type of Procurement (check one):</b> <input type="checkbox"/> IFB <input type="checkbox"/> RFP <input checked="" type="checkbox"/> RFP-A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	<b>Procurement Dates:</b>	
	<b>A. Issued:</b> February 5, 2019	
	<b>B. Advertised/Publicized:</b> February 7, 2019	
	<b>C. Pre-Proposal Conference:</b> February 15, 2019	
	<b>D. Proposals Due:</b> March 21, 2019	
	<b>E. Pre-Qualification Completed:</b> July 1, 2019	
	<b>F. Conflict of Interest Form Submitted to Ethics:</b> June 14, 2019	
	<b>G. Protest Period End Date:</b> Est. July 22, 2019	
5.	<b>Solicitations Picked up/Downloaded:</b> 163	<b>Proposals Received:</b> 4
6.	<b>Contract Administrator:</b> Robert Romanowski	<b>Telephone Number:</b> 213-922-2633
7.	<b>Project Manager:</b> Hamid Mahramzadeh	<b>Telephone Number:</b> 213-922-7227

**A. Procurement Background**

This Board Action is to approve Contract No. AE59600 for Supplemental Engineering Services in support of Metro Engineering. Board approval of contract award is subject to resolution of any properly submitted protest.

The RFP was issued in accordance with Metro's Acquisition Policy and California Government Code §4525-4529.5 for Architectural and Engineering services. The contract type is a Cost Reimbursable, specifically a Cost Plus Fixed Fee.

Three (3) amendments were issued during the solicitation phase of this RFP:

- Amendment No. 1, issued on February 26, 2019 extended the Proposal Due Date;
- Amendment No. 2, issued on March 11, 2019 extended the Proposal Due Date; and
- Amendment No. 3, issued on March 13, 2019 clarified various Submittal Requirements and Evaluation Criteria.

A total of four (4) proposals were received on March 21, 2019. Metro held a pre-proposal conference on February 15, 2019, with a total of forty-two (42) firms in attendance. Metro had representations from Risk Management, Ethics, Pre-Qualification, Engineering, and DEOD, to highlight the main elements of the RFP including the Disadvantaged Business Enterprise (DBE) goal of thirty percent (30%)

of the Total Estimated Cost. A total of thirty-five (35) questions were received between the issuance of the solicitation and the RFP due date. All questions were addressed by issuance of a Question and Answer memorandum and the Amendments listed above.

On April 26, 2019, Metro held Oral Presentations with all four (4) proposing firms, at which time Metro received four (4) sealed cost proposals that remained unopened.

## **B. Evaluation of Proposals**

A Proposal Evaluation Team (PET) consisting of staff from Executive Office, Transit Project Delivery; Engineering Management; and Regional Rail, Project Engineering was convened and conducted a comprehensive technical evaluation of the proposals received.

The proposals were evaluated based on the following evaluation criteria and weights:

- Experience and Capabilities of the Firms on the Consultant's Project Team  
30 percent
- Key Personnel's Skills and Experience  
25 percent
- Effectiveness of Management Plan  
25 percent
- Understanding of Work and Appropriateness of Approach for Implementation  
20 percent

The evaluation criteria are appropriate and consistent with criteria developed for other, similar Architect and Engineering (A&E) procurements. Several factors were considered when developing these weights, giving the greatest importance to the experience and capabilities of the firms on the consultant's project team, key personnel's skills and experience, and understanding of the work and appropriateness of the approach to implementing the work.

This is an A&E, qualifications based procurement; therefore, price cannot be used as an evaluation factor pursuant to state and federal law.

All appointed PET representatives reviewed a list of the Proposers and their subconsultants; none were aware of any actual or potential conflict of interest that may arise due to their participation in the evaluation of the Proposals. Each then completed and certified the Declaration of Confidentiality / No Conflict of Interest form.

After the PET completed an initial evaluation of the written proposals of the four (4) proposals received, all four (4) were determined to be within the competitive range.

All four proposers were invited to make oral presentations to the PET. The four (4) firms within the competitive range are listed below in alphabetical order:

1. HDR Engineering, Inc.
2. STV, Incorporated
3. Transit SES Partners (a Joint Venture of PacRim Engineering, Inc. and Mott MacDonald, LLC)
4. T.Y. Lin International

In general, each team's presentation addressed the requirements of the RFP, experience with all aspects of the required Scope of Work, and stressed each firm's commitment to the success of the project. Also highlighted were staffing plans, work plans, and perceived project issues.

The PET evaluated the capabilities of each proposer and its team of subconsultants, in accordance with the Evaluation Criteria in the RFP for the following subject areas and their relative importance: 1) experience and capabilities of the firms on the consultant's project team; 2) key personnel's skills and experience; 3) Effectiveness of Management Plan; and 4) Understanding of Work and Appropriateness of Approach for Implementation.

#### **Qualifications Summary of Recommended Firm:**

The PET scored and ranked the proposals and assessed major strengths, weaknesses and associated risks of each of the Proposers to determine the most qualified firm. The evaluation performed by the PET determined HDR Engineering, Inc. as the most qualified firm to provide Supplemental Engineering Services / Transit Rail Projects, as provided in the RFP Scope of Work. What distinguished HDR Engineering, Inc. was they demonstrated, through their written proposal and oral presentation, their experience and capabilities are very good and exceeded the requirements of the RFP. HDR Engineering, Inc. also demonstrated an exceptionally thorough and comprehensive understanding of managing multiple task orders. The team is highly experienced in delivering similar projects with an excellent record in client satisfaction on similar projects around the U.S.

Furthermore, this team demonstrated that it is versed in providing the Scope of Work related to this contract, and has the capabilities to provide staffing for the type of work that is required under this contract. HDR Engineering Inc. significantly exceeds the requirements of the three highest weighted criteria.

	<b>Firm</b>	<b>Average Score</b>	<b>Factor Weight</b>	<b>Weighted Score</b>	<b>Rank</b>
	<b>HDR Engineering, Inc.</b>				
	Experience and Capabilities of the Firms on the Consultant's Project Team	91.06	30%	27.32	
	Key Personnel's Skills and Experience	88.40	25%	22.10	
	Effectiveness of Management Plan	90.60	25%	22.65	
	Understanding of Work and Appropriateness of Approach for Implementation	90.25	20%	18.05	
	<b>Total</b>		<b>100.00%</b>	<b>90.12</b>	<b>1</b>
	<b>Transit SES Partners (a Joint Venture of PacRim Engineering, Inc. and Mott MacDonald LLC)</b>				
	Experience and Capabilities of the Firms on the Consultant's Project Team	85.33	30%	25.60	
	Key Personnel's Skills and Experience	85.56	25%	21.39	
	Effectiveness of Management Plan	84.08	25%	21.02	
	Understanding of Work and Appropriateness of Approach for Implementation	86.75	20%	17.35	
	<b>Total</b>		<b>100.00%</b>	<b>85.36</b>	<b>2</b>
	<b>STV, Incorporated</b>				
	Experience and Capabilities of the Firms on the Consultant's Project Team	84.83	30%	25.45	
	Key Personnel's Skills and Experience	83.80	25%	20.95	
	Effectiveness of Management Plan	84.40	25%	21.10	
	Understanding of Work and Appropriateness of Approach for Implementation	87.25	20%	17.45	
	<b>Total</b>		<b>100.00%</b>	<b>84.95</b>	<b>3</b>
	<b>T.Y. Lin International</b>				
	Experience and Capabilities of the Firms on the Consultant's Project Team	81.30	30.00%	24.39	
	Key Personnel's Skills and Experience	83.68	25.00%	20.92	
	Effectiveness of Management Plan	84.24	25.00%	21.06	
	Understanding of Work and Appropriateness of Approach for Implementation	85.75	20.00%	17.15	
	<b>Total</b>		<b>100.00%</b>	<b>83.52</b>	<b>4</b>

### C. Cost Analysis

The costs have been determined to be fair and reasonable based upon a cost analysis of direct labor rates, indirect rates and other direct costs completed in accordance with Metro's Procurement Policies and Procedures. The analysis includes, among other things, a comparison with similar firms; an analysis of rates and factors for labor, and other direct cost upon which the consultant will base its billings. Metro negotiated and established provisional indirect (overhead) rates, plus a fixed fee based on the total estimated cost for the contract term to compensate the consultant

Audits will be completed, where required, for those firms without a current applicable audit of their indirect cost rates, other factors, and exclusion of unallowable costs, in accordance with Federal Acquisition Regulation (FAR) Part 31. In order to prevent any unnecessary delay in contract award, provisional overhead rates have been established subject to Contract adjustments. In accordance with FTA Circular 4220.1 f, if an audit has been performed by any other cognizant agency within the last twelve month period, Metro will receive and accept that audit report for the above purpose rather than perform another audit.

<b>Proposer Name</b>	<b>Proposal Amount</b>	<b>Metro ICE</b>	<b>Recommended NTE amount</b>
<u>HDR Engineering, Inc.</u>	N/A <sup>(1)</sup>	<b>\$69,291,681</b> <sup>(2)</sup>	<b>\$50,000,000</b> <sup>(3)</sup>

<sup>(1)</sup>A proposal amount is not applicable. This is a Cost Plus Fixed Fee (CPFF) Task Order Contract with no definable level of effort for the Scope of Work. Hourly labor rates, overhead rates, and fee were negotiated and determined to be fair and reasonable.

<sup>(2)</sup>Metro Independent Cost Estimate (ICE) for the three year base contract plus two one-year options.

<sup>(3)</sup>The amount of \$50,000,000 is V/CM's extraction from the Independent Cost Estimate (ICE) for the three year base contract period.

### D. Background on Recommended Contractor

The recommended firm, HDR Engineering, Inc., located in Los Angeles, has been in business for 46 years and is a leader in the delivery of rail transit projects.

The multidisciplinary team includes 29 subconsultants that have a vast knowledge and experience with Metro.

The Project Manager has managed engineering teams for 30 years. The Project Manager's commitment to this project will be 100% availability.

DEOD SUMMARY

**SUPPLEMENT ENGINEERING SERVICES (SES)/TRANSIT RAIL PROJECTS  
AE59600**

**A. Small Business Participation**

The Diversity and Economic Opportunity Department (DEOD) established a 30% Disadvantaged Business Enterprise (DBE) goal for this Project. HDR Engineering, Inc. made a 30% DBE commitment for this Task Order Contract.

In response to a specific Task Order request with a defined scope of work, the prime consultant will be required to identify DBE subcontractor activity and actual dollar value commitments for that Task Order. Overall DBE achievement in meeting the commitment will be determined based on the cumulative DBE participation of all Task Orders awarded.

Upon issuance of task orders, DEOD will track DBE utilization and participation through its tracking and monitoring system to key stakeholders over the contract to ensure that all parties are actively tracking Small Business progress. Metro Project Managers and Contract Administrators will have access to reporting system to review cumulative DBE performance for the overall contract.

<b>Small Business Goal</b>	<b>30% DBE</b>	<b>Small Business Commitment</b>	<b>30% DBE</b>
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	<b>DBE Subcontractors</b>	<b>Ethnicity</b>	<b>% Committed</b>
1	Ambient Energy, Inc.	Non-Minority Female	TBD
2	Amheart Solutions	Asian-Pacific	TBD
3	Anil Verma Associates	Sub-Asian	TBD
4	Arellano Associates	Hispanic American	TBD
5	Auriga	Sub-Asian	TBD
6	BA, Inc.	African-American	TBD
7	Earth Mechanics, Inc.	Sub-Asian	TBD
8	FMG Architects	Hispanic American	TBD
9	FPL and Associates, Inc.	Asian-Pacific	TBD
10	Lenax Construction Services, Inc.	Non-Minority Female	TBD
11	MA Engineering	Hispanic American	TBD



12	Martini Drilling Corp.	Hispanic American	TBD
13	Rail Surveyors and Engineers. Inc.	Asian-Pacific	TBD
14	Suenram & Associates	Non-Minority Female	TBD
15	T&T Public Relations, Inc.	African American	TBD
16	Tatsumi and Partners, Inc.	Asian-Pacific	TBD
17	Ted Tokio Tanaka Architects	Asian-Pacific	TBD
18	Terry A. Hayes Associates, Inc.	African American	TBD
19	The Alliance Group Enterprise, Inc.	Asian-Pacific	TBD
20	V&A, Inc.	Hispanic-American	TBD
21	VN Tunnel and Underground, Inc.	Asian-Pacific	TBD
	<b>Total DBE Commitment</b>		<b>30%</b>

**B. Living Wage and Service Contract Worker Retention Policy Applicability**

The Living Wage and Service Contract Worker Retention Policy is not applicable to this contract.

**C. Prevailing Wage Applicability**

Prevailing Wage requirements are applicable to this project. DEOD will monitor contractors' compliance with the State of California Department of Industrial Relations (DIR), California Labor Code, and, if federally funded, the U S Department of Labor (DOL) Davis Bacon and Related Acts (DBRA).

**D. Project Labor Agreement/Construction Careers Policy**

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. Project Labor Agreement/Construction Careers Policy is applicable only to construction contracts that have a construction related value in excess of \$2.5 million.



## File Summary

File Number	Title	Current Status
2019-0502	<p><b>Contract</b></p> <p>AUTHORIZE the Chief Executive Officer to NEGOTIATE and EXECUTE:</p> <p>A. A three-year cost plus fixed fee type contract for AE59600 with HDR Engineering, Inc. for Supplemental Engineering Services for Engineering Design of Transit Rail Projects on a task order basis, plus two one-year options. The amount for the three-year base contract is \$50,000,000 and the amount for the two one-year options is \$20,000,000 for a total contract value not to exceed \$70,000,000; subject to resolution of protest(s), if any; and</p> <p>B. Individual Task Orders and modifications within the Board approved contract amount.</p> <p><b>Introduced:</b> 6/17/2019 <b>Controlling Body:</b> Construction Committee</p> <p><b>Meeting Date:</b> 7/18/2019 <b>Sponsor(s):</b> Construction Committee</p> <p><b>Department:</b> Engineering and Construction (Department)</p> <p><b>Drafter:</b> fordo@metro.net</p>	<b>Agenda Ready</b>



## File Summary

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## Board Report

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File #: 2019-0502, File Type: Contract

Agenda Number: 35.

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### CONSTRUCTION COMMITTEE JULY 18, 2019

**SUBJECT: SUPPLEMENTAL ENGINEERING SERVICES (SES) CONSULTANT SERVICE CONTRACT**

**ACTION: AWARD PROFESSIONAL SERVICES CONTRACT**

#### **RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to NEGOTIATE and EXECUTE:

- A. A three-year cost plus fixed fee type contract for AE59600 with HDR Engineering, Inc. for Supplemental Engineering Services for Engineering Design of Transit Rail Projects on a task order basis, plus two one-year options. The amount for the three-year base contract is \$50,000,000 and the amount for the two one-year options is \$20,000,000 for a total contract value not to exceed \$70,000,000; subject to resolution of protest(s), if any; and
- B. Individual Task Orders and modifications within the Board approved contract amount.

#### **ISSUE**

Metro's staff engineers, architects and CADD designers in the Engineering Group are currently fully engaged supporting our current Major Rail Transit Projects (Crenshaw, Regional connector and Purple Line sections 1, 2 and 3), Metro Emergency Security Operations Center (ESOC), Metro Capital Improvements projects (CIP) such as the Patsaouras Plaza project and the Willowbrook / Rosa Parks Station Improvement Project and the State of Good Repairs Projects (SOGR) such as the Metro Blue Line (MBL) Signaling Rehabilitation and Operational Improvements project, Metro Orange Line (MOL) Improvements and the I-210 Barriers Replacement project.

The passage of Measure M has added a considerable workload to the Metro Engineering group with projects that are starting or that are completing design in the next five years such as the Airport Metro Connector 96<sup>th</sup> Street Station (AMC), West Santa Ana Branch Transit Corridor, the Gold Line Foothill Extension to Claremont, and the BRT Connector Orange / Red Line to the Gold Line, which all have groundbreakings within the next five years.

In addition, important motions by Board of Directors require considerable engineering work to evaluate the feasibility and develop conceptual alternative designs to validate engineering solutions for the projects called by the motions: This includes, but not limited to the MBL Wardlow Grade

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Separation study, the MBL Washington/ Flower Wye Improvement or Grade Separation, and the Pico Station Grade Separation.

## **BACKGROUND**

The funding limit for our existing Supplemental Engineering Services (SES) contract (Contract No. AE36687) has almost reached its limit. This new SES will enable Metro the flexibility to supplement internal resources on an as-needed basis for the work detailed above, when we either do not have the sufficient capacity, or lack the particular expertise necessary to perform a particular specialty task in a timely manner. Metro Engineering staff does not possess the resources or, in some cases, technical expertise to carry out certain specialized tasks such as Traffic Control Plans, three-dimensional nonlinear soils-structure interaction analysis, Noise and Vibration Control or Corrosion Control. There is not currently a need for full-time resources for these specific specialties. Therefore, it is more efficient to use consultants on an as-needed basis.

## **DISCUSSION**

Metro Engineering has developed this SES Contract to supplement Metro's engineering efforts. The SES consultant team shall be capable of supporting its engineering group's technical disciplines. This Contract will be issued for a term of three years with two one-year optional extensions for a maximum total duration of five years. The Procurement Summary for this Contract is included as Attachment A.

This Contract called for the proposers to demonstrate their capabilities and technical expertise listed in the Statement of Work for this RFP. The technical proficiencies required for this SES contract (AE59600) are very comprehensive and include all engineering and specialties disciplines which Metro may require in support of its projects. These include the following:

### **General Services include:**

1. Preliminary and Final Design of Transit Rail Projects.
2. Design Review Support & Coordination for CIP projects & other special projects.
3. Production of Project Status, Technical and Engineering Reports.
4. Design of Structures, Stations and Guideways.
5. Facilities/Systems Interface Coordination.
6. Surveying Services.
7. Cost Estimating.
8. Intra/Inter Disciplinary Coordination.
9. Scheduling and Cost Management for Task Orders.
10. Post Design Services including; Bid and Design Support during Construction.
11. Administrative Tasks associated with General Engineering Support Services.

### **Specific Rail Facilities and Third Party Utility Design Services include:**

12. Engineering Services for Review and Approval of Metro Projects.
13. Development of Technical Specifications, Drawings and Reference Documents.

14. Engineering Services for support of Metro Rail Operations and Maintenance.
15. Land Surveying and Legal Description.
16. Potholing.
17. Geotechnical Services, Borings and Reports.
18. Civil & Utility Engineering
19. Drainage Design and Hydraulic Calculations.
20. Structural Engineering.
21. Bridges and Aerial Structure Design.
22. Tunnels, Trenches and Underground Station Design.
23. Track Work Engineering, Plan and Profile.
24. CPUC Grade Crossing Application including attendance to field diagnostic meetings.
25. Yard and Shop Rail Maintenance Facility Design.
26. Architectural Design.
27. Station Site Development.
28. Urban Design Integration.
29. Landscape Architecture.
30. Traffic Control Plans including Striping Drawings and Signal Drawings.
31. CADD and MicroStation Drawings.
32. BIM Services and Training.
33. Project Presentation including Three Dimensional Rendering.
34. Corrosion Control Measures and Cathodic Protection.
35. Value Engineering and Cost Reduction.
36. Noise and Vibration Analysis including Site Visits, Measurement and Mitigation.
37. Any other engineering or technical discipline not listed above that is ancillary to the Statement of Work and consistent with the general requirements of an approved Task Order.
38. HVAC design including HVAC and emergency ventilation.
39. Electrical Design.
40. Plumbing Design.
41. Fire Protection Design

### **DETERMINATION OF SAFETY IMPACT**

This SES Contract is not directly related to a specified safety issue. However, the services provided via this SES Contract will reduce Metro's dependency on limited internal resources and, thus, is generally in support of safety initiatives.

### **FINANCIAL IMPACT**

As specific engineering design or support needs arise, task orders will be issued and funded from the associated project budget, upon approval by the responsible Project Manager.

Since this is a multi-year project, the Chief Program Management Officer, Project Managers and respective Cost Center Managers will be responsible for budgeting for costs of future task orders

related to this contract.

**Impact to Budget**

The funding for the task orders are provided by the specific project requiring the services. The source for these funds are in line with the respective projects' funding plans and fund sources may consist of federal and/or state grants as well as local funds. Many of the state of good repair projects are funded with local funding sources that are eligible for rail and bus operations.

**IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Supporting this recommendation supports Metro's strategic plan goal 1. By supporting the recommendation for HDR Engineering, Inc. to provide supplemental engineering services, the Board is supporting strategic plan goal 1 which promotes trip reliability, reduces trip disruptions as well as deliver of world-class transit service by ensuring our transit assets are in a state of good repair.

**ALTERNATIVES CONSIDERED**

1. Solicit qualifications proposals for each individual task when the requirement arises: This alternative is not recommended as it would require extensive additional staff time to process each individual task and would result in project delays due to the lead time required to complete each procurement cycle. Additionally, procuring services on a per-assignment basis would impose significant additional burden on the Engineering and Vendor/Contract Management departments.
2. Utilize existing engineering staff to provide the required technical support: This alternative is also not feasible as Metro's current engineering capacity is fully utilized to support the existing major, CIP and SOGR projects. Due to these commitments, it is anticipated that the current staff would be challenged to provide the necessary additional technical support required for the up-coming capital projects which will be under concurrent development. If this alternative were exercised, Metro would need to hire additional staff with expertise in several currently underrepresented disciplines to perform this work. Such an action is not practical nor cost-effective.

**NEXT STEPS**

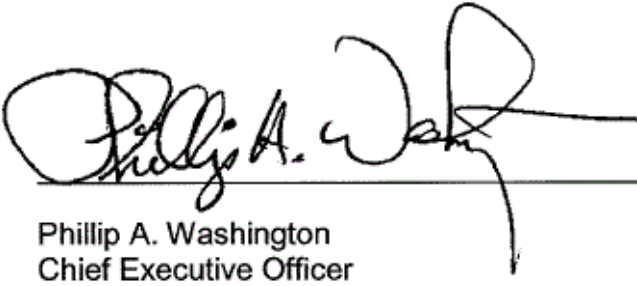
Upon Board approval, staff will complete the process to award the contract. Specific task orders will then be issued on an as needed basis.

**ATTACHMENTS**

Attachment A - Procurement Summary  
Attachment B -DEOD Summary

Prepared by: Androush Danielians, Executive Officer (213) 922-7598

Reviewed by: Debra Avila, Chief Vendor/Contract Management Officer (213) 418-3051  
Richard F. Clarke, Chief Program Management Officer (213) 922-7557



Phillip A. Washington  
Chief Executive Officer





## Board Report

File #: 2019-0490, File Type: Contract

Agenda Number: 15.

### PLANNING AND PROGRAMMING COMMITTEE

JULY 17, 2019

### CONSTRUCTION COMMITTEE

JULY 18, 2019

**SUBJECT: SEPULVEDA TRANSIT CORRIDOR PROJECT**

**ACTION: APPROVE CONTRACTING DELIVERY APPROACH**

#### **RECOMMENDATION**

CONSIDER:

- A. FINDING that use of a Pre-Development Agreement (PDA) approach pursuant to Public Utilities Code Section 130242 will achieve certain private sector efficiencies in the integration of the planning, design, and construction of the Sepulveda Transit Corridor Project (Project); and

(REQUIRES TWO-THIRDS VOTE OF THE BOARD)

- B. APPROVING the solicitation of PDA contract(s) with up to two responsible proposer(s), pursuant to Public Utilities Code Section 130242(e), with the proposer(s) chosen by utilizing a competitive process that employs objective selection criteria (in addition to price).

#### **ISSUE**

Metro is authorized to enter into a PDA pursuant to Public Utilities Code Section 130242(a) and Section 130242(e). Benefits of the PDA process include the optimization of project performance, risk, constructability, affordability, and delivery schedule through early design solutions, innovation, and private sector rigor and resources.

#### **BACKGROUND**

Metro is planning for the construction of the Sepulveda Transit Corridor, a fixed-guideway transit service running between the San Fernando Valley and Los Angeles International Airport (LAX), through the Westside of Los Angeles. Metro is currently conducting a Transit Feasibility Study (TFS)-the Alternatives Analysis phase of the planning process. This TFS will identify and evaluate a range of high-capacity fixed guideway transit alternatives for the Project such as, evaluating various transit modes, alignments generally following the I-405 corridor, and potential station locations. The

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alignments include potential connections to existing and planned Metro bus and rail lines, the LOSSAN corridor regional rail services, and several major activity centers. The Project is included on the Twenty-Eight by '28 list of projects scheduled to be completed in time for the 2028 Olympic and Paralympic Games.

## **DISCUSSION**

In 2016, Metro received three Unsolicited Proposals (UPs) for delivery of the Sepulveda Transit Corridor (Valley to Westside segment), each of which offered different approaches to achieve innovative, accelerated delivery of the project. Two of the three also proposed the use of a PDA to advance preliminary definition and design of the project, followed by project delivery through a potential public-private partnership, which would include the design, construction, finance, and potentially project operations and/or maintenance. The Metro Board previously directed Metro staff to "...proceed with all actions necessary to assist in the preparation of a Pre Development Agreement (PDA) to develop the [Sepulveda Transit Project]" in a motion made by Directors Richard Katz and Mel Wilson, approved at the December 13, 2012 Board meeting.

A PDA is a form of early contractor involvement where a private project developer participates in early project definition and design, in partnership with the project owner. Teams of firms that are awarded a PDA contract (PDA Contractor) would continue to provide technical work products including cost estimates, constructability reviews, technical analyses, etc. that support the ongoing development of the project as it progresses through environmental review and approval processes. When the project scope and design are sufficiently developed, a PDA Contractor will have the right to submit an offer to Metro for a firm fixed price for delivery. Metro would develop its own independent cost estimate and then, at its sole discretion, enter into negotiations with the PDA Contractor. If negotiations are successful, staff would bring a recommended contract action to the Board. If negotiations are not successful, Metro would use any relevant work products produced by the PDA Contractor and move forward with a competitive procurement for the work. Based on review of the UPs, Metro determined that a PDA could offer significant value as it works to balance the project's performance, construction costs, operations, maintenance and state-of-good-repair costs, and key project risks, particularly an accelerated schedule.

Metro anticipates selecting up to two PDA Contractors to identify and develop project concepts, likely involving distinct transit mode types. Selection of the PDA Contractor(s) will be based on technical, managerial and financial qualification factors that will be included in the solicitation. The selection of the Contractor(s) is subject to Board approval. Work products supporting development of the project will be reviewed and assessed by Metro staff to determine the extent to which they support Metro's project goals. The review and assessment will include performance (travel time, passenger throughput, etc.), feasibility/constructability, and other factors, as part of the environmental clearance process for the project. The environmental clearance process will be supported by a separate consulting contract.

The PDA project development period will include clear phases and milestones, each of which will allow Metro the opportunity to decline to continue its relationship with a PDA Contractor.

This process will occur in parallel to the process of developing a combined Environmental Impact

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Statement/Environmental Impact Report (EIS/EIR) to satisfy the requirements of NEPA and CEQA. The PDA Contractors will be expected to closely coordinate their ongoing efforts to advance the Project's design with Metro staff and Metro's environmental consultants to ensure robust public participation and strict adherence to all environmental permitting requirements. Staff has determined that the use of a PDA is not likely to negatively affect any of the major EIS/EIR process milestones that Metro projects typically must satisfy, including an initial scoping period, community meetings and comment periods, establishment by the Metro Board of a Locally Preferred Alternative (LPA), and certification of the Final EIR by the Metro Board and issuance of a Record of Decision for the project by the Federal Transit Administration. Additionally, provisions will be included in the Statement of Work to ensure that the EIS Consultant and each PDA Team maintain schedule coordination and will not be unduly delayed. The statements of work for both the PDA Contractors and EIS/EIR consultant will include defined mechanisms to ensure sufficient and thoughtful coordination of schedule and technical deliverables.

### **DETERMINATION OF SAFETY IMPACT**

This Board action will not have an impact on established safety standards for Metro's capital projects.

### **FINANCIAL IMPACT**

Recommendations A and B do not have a fiscal year budget impact at this time as the actions are requesting permission for project delivery approach. The Board would consider proposals from qualified proposers prior to award of any contract for a PDA. Measure M and Measure R expenditure plans allocate approximately \$10.8 billion (2015 \$) to the Project from 2024 through 2057 for new fixed-guideway transit service and express lanes between the San Fernando Valley and the Westside. The Sepulveda Transit Corridor project (460305) is allocated \$3.7 million in the FY20 budget. This project is currently funded on a Fiscal Year to Fiscal Year basis until such time that a Life of Project Budget (LOP) is adopted.

### **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Delivering this important Measure M projects as efficiently and effectively as possible is consistent with the following Vision 2028 goals:

- Goal 1 - Provide high-quality mobility options that enable people to spend less time traveling.
- Goal 2 - Deliver outstanding trip experiences for all users of the transportation system
- Goal 3 - Enhance communicates and lives through mobility and access to opportunity
- Goal 5 - Provide responsive, accountable, and trustworthy governance within the Metro organization

### **ALTERNATIVES CONSIDERED**

The Board may reject the recommendations to use a PDA to support the project's development and delivery. However, certain private sector efficiencies in the integration of project design with long-term operational performance and cost of ownership may not be achieved. Also, the opportunity to

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potentially identify strategies to improve performance, reduce costs, and accelerate project delivery utilizing this recommended method will not be available.

Metro staff explored delivering the Project utilizing Design/Bid/Build and Design/Build contracting, as well as a traditional hard-bid P3 (without early contractor involvement); however, these approaches would not benefit from contractor insights into project definition and design that could support more efficient achievement of Metro's project goals. Therefore, it is not recommended that either option be utilized.

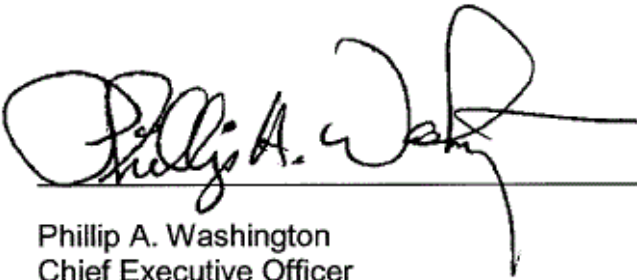
### **NEXT STEPS**

In order to support an efficient project development schedule that aligns with Metro's environmental clearance, engineering, and construction schedule, Metro will issue a solicitation in 2019 for the PDA contract.

Upon approval by the Board, staff will issue a competitive solicitation for a PDA contract(s). The proposal(s) will be selected by utilizing objective selection criteria, in addition to price. The process of evaluation, negotiations (if any), and decision to recommend award of the PDA contract(s) is anticipated to last into 2020. This procurement process will be conducted in parallel with an effort to procure a consulting team to support the environmental clearance of the project. Metro staff currently anticipates selection of up to two contractors by summer 2020, allowing for evaluation of their project concepts and selection of an LPA by 2023.

Prepared by: Colin Peppard, Senior Director, Special Projects (213) 418-3434

Reviewed by: Joshua Schank, Chief Innovation Officer, (213) 418-3345



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Phillip A. Washington  
Chief Executive Officer



# Sepulveda Transit Corridor Project



Planning & Programming Committee  
Agenda Item: 2019-0490

# Preliminary Development Agreement Summary

A PDA is a form of Early Contractor Involvement (ECI) in which a private developer participates in early project design

- > PDA teams compete for the right develop project design in collaboration with Metro and stakeholders
- > Limited right to submit an offer for firm fixed price delivery; competitive hard bid procurement if offer is not satisfactory

**Value proposition:** Contractor insights on critical early design decisions with incentive to optimize feasibility, improve performance, manage cost, accelerate delivery

# Why PDA for Sepulveda?

- > Once-in-a-generation opportunity to redefine mobility in one of America's most challenging travel corridors.
- > Balancing mobility and performance with risk, cost, and constructability is an extraordinary challenge.
- > A PDA allows Metro to tap into the best minds in the field to deliver the most for available project funding.

# Anticipated PDA Structure

Sepulveda PDA has been designed with a unique structure, involving two potential PDA Teams

- > Teams to support Transportation Solution Concept for subsequent development
- > Each team to refine concept to optimize feasibility
- > PDA Contractor work structured in five phases according to Metro's existing Project Development Process
- > Metro discretion to proceed after each phase of work



# Compensation and Risk Sharing

The goal of this PDA is to incentivize attainment of feasibility, not to offload project development costs

- > Objective: Incentive for the best teams to come to the table early, while limiting opportunities for “gaming”
- > Compensation priced by phase through PDA proposals
- > Deferred compensation: opportunity for PDA Team profit increases as project nears feasibility
- > Monthly subcontractor payment certification
- > Metro ownership of final technical work products to utilize as it sees fit

# Key Information

**No change to process of conducting public and stakeholder outreach**

- > All outreach to public and key project stakeholders will be conducted through Metro staff

**No change to Metro Board's role in project decisions**

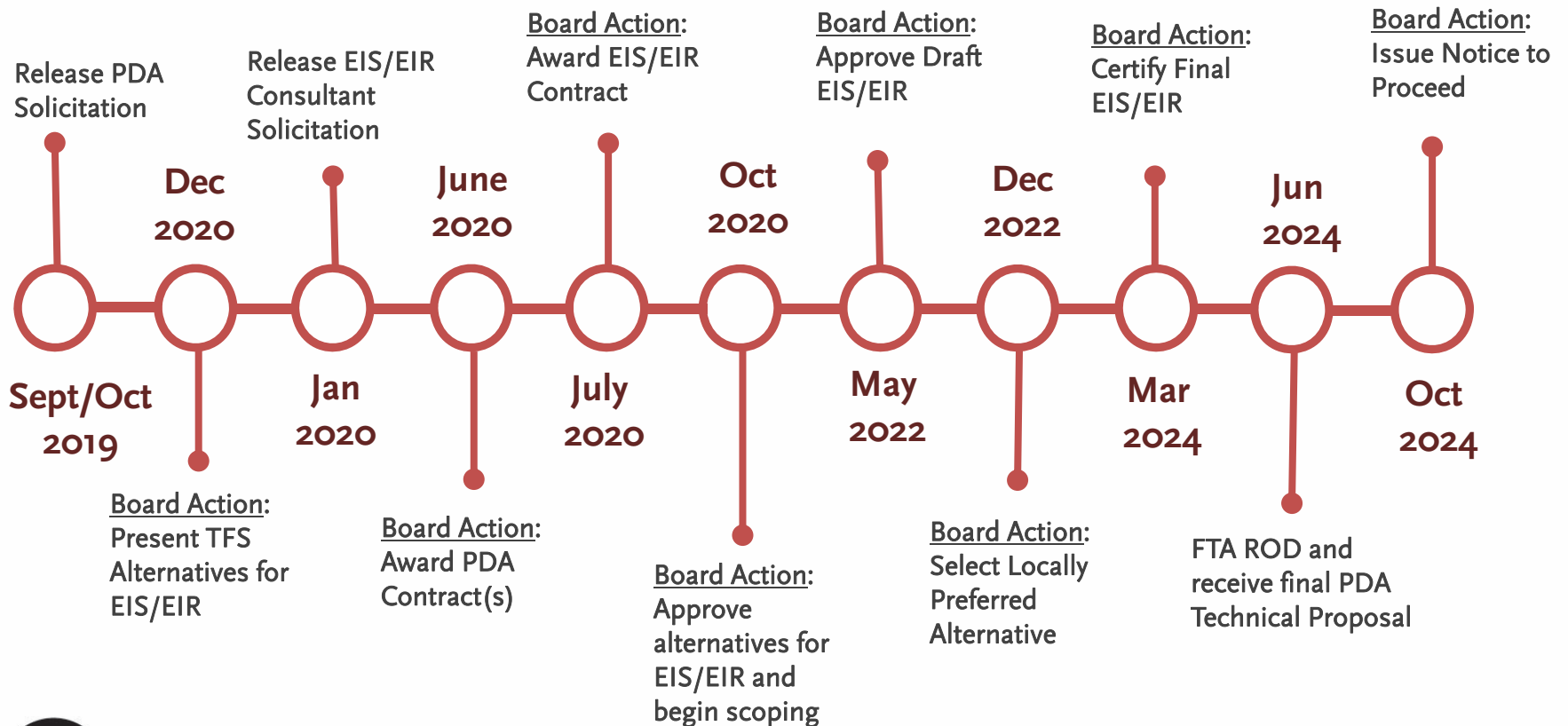
- > Approve PDA; Approve scoping; Select LPA; Approve delivery model ( $\frac{2}{3}$  vote), Authorize project delivery contract; Set life-of-project budget

**Small and Disadvantaged Business participation will be incorporated as with any project**

- > Metro DEOD will set SBE/DBE goals for each PDA phase



# Tentative Project Timeline



**Metro**

*\*Timeline assumes PDA Team continues supporting project development through final price proposal, with no external delays (e.g. litigation, etc.)*