State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

MEMORANDUM

TAB 82

To: CHAIR AND COMMISSIONERS
CALIFORNIA TRANSPORTATION COMMISSION

CTC Meeting: December 4-5, 2019

From: STEVEN KECK, Chief Financial Officer

Reference Number: 4.17, Action Item ***REPLACEMENT ITEM***

Prepared By: Ronald E. Sheppard, Chief (Acting)
Division of Rail and Mass Transportation

Subject: **LOCAL PARTERSHIP PROGRAM – SCOPE CHANGE AMENDMENT FOR THE METRO ORANGE LINE BUS RAPID TRANSIT IMPROVEMENT PROJECT RESOLUTION LPP-1920-02.**

ISSUE:

Should the California Transportation Commission (Commission) approve the Los Angeles County Metropolitan Transportation Authority's (LA Metro) request to amend the Metro Orange Line Bus Rapid Transit Improvements project (PPNO 5504) scope, programmed in the 2018 Local Partnership Competitive Program in Cycle 1?

RECOMMENDATION:

The California Department of Transportation (Department) recommends the Commission approve the request to amend the Metro Orange Line Bus Rapid Transit Improvements scope, programmed in the Cycle 1 2018 Local Partnership Competitive Program.

BACKGROUND:

On May 16, 2018, the Metro Orange Line Bus Rapid Transit Improvements project was adopted in the 2018 Local Partnership Competitive Program under Cycle 1. The project was programmed for $75,000,000 of Local Partnership Program Competitive funds for the construction phase. The project was selected from 90 project applications seeking in excess of over $900 million from the Local Partnership Program.

The original scope would have constructed a single aerial grade separation spanning over five intersections, constructed four-quadrant gate systems at 34 intersections along a 18-mile segment and elevated an existing bike path. On May 24, 2019, LA Metro submitted a scope change request for the Metro Orange Line Bus Rapid Transit Improvements project

(PPNO 5504). The proposed scope change will construct two separate aerial structures spanning over four intersections and one additional four-quadrant gate crossing in between the two aerial structures.

The proposed scope change is more cost-effective and an efficient design that will provide connectivity enhancements with other planned projects in the area; East San Fernando Valley Transit Corridor and Sepulveda Pass projects.

The Department and Commission staff discussed the proposed scope change and worked with LA Metro to resolve any questions and concerns regarding the request.

The Local Partnership Competitive Program provides discretionary funding for projects that excel through an evaluation process. And although the initial project was evaluated and scored based on the scope of work and project benefits, the proposed project scope change would have scored similarly to the initial project scope, because there are no changes to the benefits.

After thorough review and analysis of the scope change, and in consultation with Commission staff, the Department has determined that although the project design will change, there are no impacts to the project benefits. Therefore, the Department recommends Commission approval of the scope change.

Attachment:

- Attachment A: Department Analysis and Recommendations

Project Scope Change Request
Caltrans' Analysis and Recommendations

August 12, 2019

PROJECT NAME: Metro Orange Line Bus Rapid Transit Improvements
IMPLEMENTING AGENCY: LA County Metropolitan Transportation Authority (LA Metro)
PPNO: 5504
DATE OF AGENCY/CT COORDINATION MEETING: June 19 & July 8, 2019

APPROVED PROJECT DESCRIPTION (SCOPE): In Los Angeles County on the Metro Orange Line (MOL) route between the North Hollywood Station and Chatsworth Station, Bus Rapid Transit (BRT) improvements will be constructed. Construct one aerial grade-separated structure over five intersections (Van Nuys Boulevard, Vesper Avenue, Kester Avenue, City of LA Driveway, Sepulveda Boulevard, from Tyrone Avenue to Sepulveda Boulevard, with railroad type four quadrant gating systems at 34 intersections along a 18-mile segment of the MOL. Also, elevate existing bike path between Van Nuys and Sepulveda Boulevards to further enhance safety for bicyclists and pedestrian (Design-Build method).

NEW PROJECT DESCRIPTION (SCOPE): In Los Angeles County on the MOL route between the North Hollywood Station and Chatsworth Station, BRT improvements will be constructed. The scope includes construction of aerial grade separated structures that would elevate the busway and associated BRTstations at Van Nuys and Sepulveda Blvds. The aerial structure at Sepulveda spans over the city of Los Angeles' Bureau of Street Services Private Crossing, east of the Sepulveda grade separation, and returns to an at-grade alignment at Kester Blvd. The aerial structure at Van Nuys Blvd. also spans over Vesper Ave. and requires the closure of Tyrone Avenue, east of Van Nuys Blvd. An adjacent grade separated bicycle/pedestrian overcrossing that runs parallel to the Sepulveda and Van Nuys grade separations will also be constructed. The Project also includes installation of railroad-type gate systems at 35 MOL crossings along the MOL.

(New scope attached, revised PPR, Exhibit B).

Purpose

This document serves as supplemental information to the SCOPE CHANGE AMENDMENT REQUEST (attached) completed by LA Metro and submitted to Caltrans on August 8, 2019. *(Local Agency Letter attached, exhibit A)*

Caltrans' Recommendation(s)

As a result of Caltrans' review of the LA Metro's Scope Change Request documentation and subsequent discussion(s) with CTC and LA Metro staff, Caltrans recommends the following action:

APPROVE AS A MINOR SCOPE CHANGE

Scope to Be Changed

The following is a numbered list of proposed scope changes:

1. The scope change altered a busway grade separation from one bridge spanning over five intersections to two smaller bridges spanning over four intersections, adding a quadrant gate to an intersection in the middle of the five intersections, that was to be a grade separation in the original design.

Reason for the Scope Change

The reason given was that a new design was more cost-effective and efficient. The proposed modification reduced the cost of the project by 11 percent, without impacting operational benefits in travel time savings.

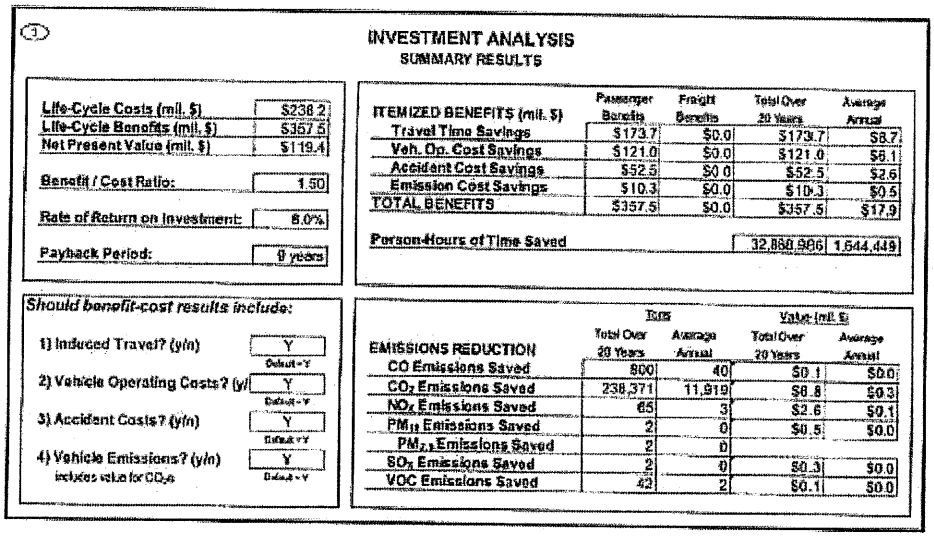
Summary of Caltrans Analysis

Caltrans supports this request for the following reasons:

As the circumstances surrounding the scope change were unforeseen at the time of application, and the benefits of the project are nearly the same after the design change, the California Department of Transportation recommends the California Transportation Commission approve the change in scope for the Metro Orange Line Bus Rapid Transit Improvement Project.

Proposed scope change affect to benefits:

Table 3. Original Benefit/Cost Analysis



INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$238.2
Life-Cycle Benefits (mil. $)	$357.5
Net Present Value (mil. $)	$119.4
Benefit / Cost Ratio:	1.50
Rate of Return on Investment:	8.0%
Payback Period:	9 years

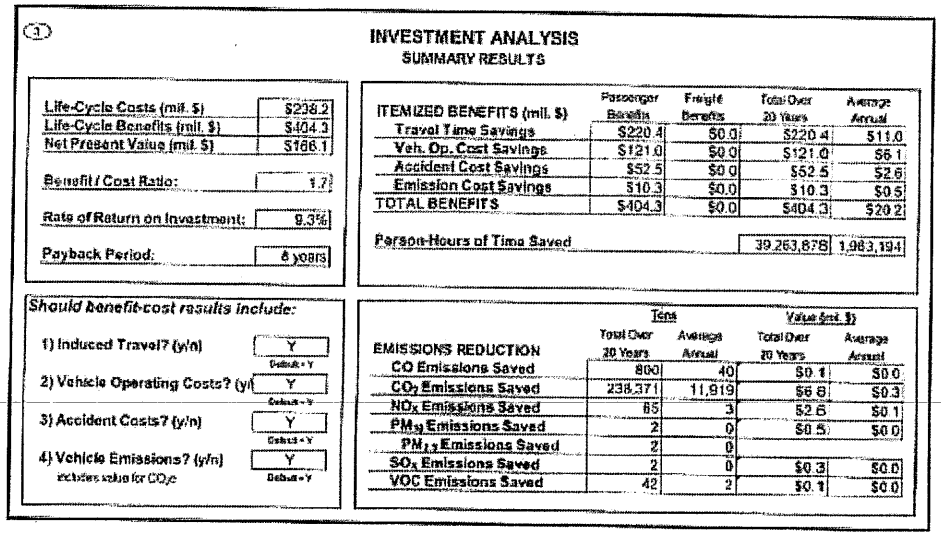
ITEMIZED BENEFITS (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$173.7	$0.0	$173.7	$8.7
Veh. Op. Cost Savings	$121.0	$0.0	$121.0	$6.1
Accident Cost Savings	$52.5	$0.0	$52.5	$2.6
Emission Cost Savings	$10.3	$0.0	$10.3	$0.5
TOTAL BENEFITS	$357.5	$0.0	$357.5	$17.9
Person-Hours of Time Saved			32,880,986	1,644,449

Should benefit-cost results include:

1) Induced Travel? (y/n)	Y (Default = Y)
2) Vehicle Operating Costs? (y/n)	Y (Default = Y)
3) Accident Costs? (y/n)	Y (Default = Y)
4) Vehicle Emissions? (y/n) includes value for CO_2e	Y (Default = Y)

EMISSIONS REDUCTION	Tons: Total Over 20 Years	Tons: Average Annual	Value ($mil.): Total Over 20 Years	Value ($mil.): Average Annual
CO Emissions Saved	800	40	$0.1	$0.0
CO_2 Emissions Saved	238,371	11,919	$6.8	$0.3
NO_x Emissions Saved	65	3	$2.6	$0.1
PM_{10} Emissions Saved	2	0	$0.5	$0.0
$PM_{2.5}$ Emissions Saved	2	0		
SO_x Emissions Saved	2	0	$0.3	$0.0
VOC Emissions Saved	42	2	$0.1	$0.0

Table 4. Revised Benefit/Cost Analysis for Scope Change



INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$238.2
Life-Cycle Benefits (mil. $)	$404.3
Net Present Value (mil. $)	$166.1
Benefit / Cost Ratio:	1.7
Rate of Return on Investment:	9.3%
Payback Period:	8 years

ITEMIZED BENEFITS (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$220.4	$0.0	$220.4	$11.0
Veh. Op. Cost Savings	$121.0	$0.0	$121.0	$6.1
Accident Cost Savings	$52.5	$0.0	$52.5	$2.6
Emission Cost Savings	$10.3	$0.0	$10.3	$0.5
TOTAL BENEFITS	$404.3	$0.0	$404.3	$20.2
Person-Hours of Time Saved			39,263,878	1,963,194

Should benefit-cost results include:

1) Induced Travel? (y/n)	Y (Default = Y)
2) Vehicle Operating Costs? (y/n)	Y (Default = Y)
3) Accident Costs? (y/n)	Y (Default = Y)
4) Vehicle Emissions? (y/n) includes value for CO_2e	Y (Default = Y)

EMISSIONS REDUCTION	Tons: Total Over 20 Years	Tons: Average Annual	Value ($mil.): Total Over 20 Years	Value ($mil.): Average Annual
CO Emissions Saved	800	40	$0.1	$0.0
CO_2 Emissions Saved	238,371	11,919	$6.8	$0.3
NO_x Emissions Saved	65	3	$2.6	$0.1
PM_{10} Emissions Saved	2	0	$0.5	$0.0
$PM_{2.5}$ Emissions Saved	2	0		
SO_x Emissions Saved	2	0	$0.3	$0.0
VOC Emissions Saved	42	2	$0.1	$0.0

Net Increase/No change/Net Decrease- The proposed scope change is expected to have minimal impact(s) on the project's potential as compared to the original scope.

Attachment B

Table 1. Comparison of Benefit/Cost Analysis Assumptions

Line #	Variable	Unit	Original Value* (from 2017 Analysis)	New Value (estimated from 2018 Analysis)
	Ridership Increase (also decrease in auto trips)	New MOL trips per day	10,100	No change
		New MOL trips per year	3,191,600	No change
1	MOL In-Vehicle Travel Time Change	Minutes per trip	North Hollywood to Canoga (12.7 miles) - 12.6	North Hollywood to Chatsworth (18 miles) - 16
	MOL Out-of-Vehicle Travel Time Change	Minutes per trip (Peak)	2	No change
		Minutes per trip (Off-Peak)	0	No change
1	Parallel Roadway Travel Time	Minutes per trip (bidirectional average)	North Hollywood to Canoga (12.7 miles) 42	North Hollywood to Chatsworth (18 miles) 54
	Trips during Peak Period	Percent	70%	No change
	Bus Vehicle Miles	Average weekday miles	6183.1	No change
		Average Saturday miles	3725.6	No change
		Average Sunday miles	3487.4	No change
		Annual total estimate	1,982,682	No change
	Change in Automobile VMT	Daily VMT change	- 81,756	No change
		Annual VMT change	- 25,834,896	No change
	Average automobile speed	Miles per hour	20	No change
3	Vehicles crossing gate quadrant streets	Number of daily vehicles	305,000	307,000 (with Kester)
		Number of annual vehicles	96,380,000	97,012,000
3	Vehicles crossing grade separation streets	Number of daily vehicles	45,000	43,000
		Number of annual vehicles	14,220,000	13,588,000
1-12	Change in average cross traffic delay for gate quadrants	Seconds of delay	7	12
	Change in average cross traffic delay for grade separations	Seconds of delay	- 5	No change

*Values shown in 2017 analysis represent the 12.7-mile E-W corridor (North Hollywood to Canoga).

(See attached analysis/revised project report, Exhibit C)

Additional Comments

Caltrans concurs with the information provided in Attachment 1 – SCOPE CHANGE AMENDMENT REQUEST. The agency has coordinated with Caltrans staff to provide the most accurate information possible.

Caltrans' Coordination with Requesting Agency

Caltrans and CTC staff met with LA Metro several times to discuss the project between January and August 2019.

Impact to Project Cost

LA Metro has indicated that while the new design of the project reduces the cost by 11 percent, the cost of the project is estimated between $320 to $393 million. LA Metro is prepared to cover any increase to the cost of the project.

Impact to Project Schedule

There are two new schedules for the project, as there will be two contract awards; one contract for the grade separation and one contract for the gating systems. The project will be delayed by 17 months as indicated by the dates in the revised PPR (exhibit B).

4. PROJECT SCHEDULE:

GRADE SEPARATIONS:

Project Milestone	Existing	Proposed
Project Study Report Approved		
Begin Environmental (PA&ED) Phase	06/15/2018	
Circulate Draft Environmental Document — Document Type		07/26/18
Draft Project Report		
End Environmental Phase (PA&ED Milestone)	07/31/2018	08/27/18
Begin Design (PS&E) Phase		11/01/18
End Design Phase (Ready to List for Advertisement Milestone)		08/30/20
Begin Right of Way Phase	10/31/2018	11/01/18
End Right of Way Phase (Right of Way Certification Milestone)	03/31/2020	06/30/21
Begin Construction Phase (Contract Award Milestone)	03/31/2020	08/01/21
End Construction Phase (Construction Contract Acceptance Milestone)	08/31/2023	02/28/25
Begin Closeout Phase	10/31/2023	03/01/25
End Closeout Phase (Closeout Report)	12/31/2024	12/31/25

GATES:

Project Milestone	Existing	Proposed
Project Study Report Approved		
Begin Environmental (PA&ED) Phase	06/15/2018	
Circulate Draft Environmental Document — Document Type		07/26/18
Draft Project Report		
End Environmental Phase (PA&ED Milestone)	07/31/2018	08/27/18
Begin Design (PS&E) Phase		11/01/18
End Design Phase (Ready to List for Advertisement Milestone)		02/28/21
Begin Right of Way Phase	10/31/2018	06/01/19
End Right of Way Phase (Right of Way Certification Milestone)	03/31/2020	06/30/21
Begin Construction Phase (Contract Award Milestone)	03/31/2020	03/01/22
End Construction Phase (Construction Contract Acceptance Milestone)	08/31/2023	02/28/25
Begin Closeout Phase	10/31/2023	03/01/25
End Closeout Phase (Closeout Report)	12/31/2024	12/31/25

ATTACHMENTS – Scope Change Amendment Request

1. Exhibit A, Local Agency Letter
2. Exhibit B, Revised Project Programming Request
3. Exhibit C, Analysis/Revised Project Report
4. Exhibit D, Caltrans Recommendation

ROAD REPAIR & ACCOUNTBILITY ACT OF 2017
LOCAL PARTNERSHIP COMPETITIVE PROGRAM
SCOPE CHANGE AMENDMENT REQUEST
METRO ORANGE LINE BUS RAPID TRANSIT IMPROVEMENTS

Exhibit A
LOCAL AGENCY
LETTER

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

Metro

August 8, 2019

Ms. Susan Bransen
Executive Director
California Transportation Commission
1120 "N" Street, MS 52
Sacramento, CA 95814

Attention: Angel Pyle, Caltrans

PROPOSED PROJECT SCOPE & SCHEDULE MODIFICATION FOR METRO ORANGE LINE BUS RAPID TRANSIT IMPROVEMENTS PROJECT
Local Partnership Program, Competitive Program Funding

Dear Ms. Bransen:

The Los Angeles County Metropolitan Transportation Authority (Metro) hereby submits its request for approval of a scope modification for the Metro Orange Line (MOL) Bus Rapid Transit (BRT) Improvements project. The project was awarded a $75,000,000 2018 Local Partnership Program – Competitive (LPP-C) grant award.

Proposed Scope Modification
The project scope as described in the original grant application consisted of constructing improvements along the 18-mile MOL Busway. The proposed 18-mile improvement project included a single one-mile aerial BRT and bike path grade separation spanning Sepulveda to Van Nuys Boulevards and railroad-type gating at 34 at-grade crossings along the entire 18-mile line. However, a more cost-effective and efficient design now includes separate aerial structures at each of these two crossings with one additional gated crossing in between. The proposed modification in scope reduced the project cost by approximately 11% without impacting the operational benefits in travel time savings. The cost reduction for the grade separation is needed to accommodate a revised cost estimate for the railroad-type gates that is higher than originally projected. This design direction came from evaluation of various configurations of aerial stations including connectivity with the East San Fernando Valley Transit Corridor and Sepulveda Pass projects. Attachment A presents the report approved by the Metro Board that describes the proposed scope as the conceptual project description.

Benefit/Cost Analysis Comparison
Metro staff prepared a comprehensive updated Benefit/Cost Analysis (BCA) using the Caltrans BCA model to compare the impacts of the original scope and proposed scope amendment (Attachment B). The results found that the BCA ratio improved from 1.5 to 1.7 when incorporating the impacts of the proposed scope modification. The new assumptions and BCA results for the proposed scope reflect not only the scope change, but also improved understanding of and data for the entire project.

The results of the updated BCA found no change in most variables between the original and proposed scope change. The variables that did show change originated from a different model. The original scope, methodology, assumptions and model approach were informed only by conceptual design. The BCA analysis for the proposed scope incorporated improved information for the project.

Schedule

We are enclosing the revised project programming requests (PPRs) to update the project scope of work, outputs/outcomes and milestone schedule. The schedule revisions are due to the delay of the main construction contract which is currently projected to be awarded in August 2021 which is inconsistent with the year LPP-C funds are programmed(FY2019/20). We understand from previous discussions with Caltrans staff that an extension request will need to be submitted in FY20 to accommodate this schedule change which is needed to accommodate better integration with the East San Fernando Valley Transit Corridor Project. We are expecting to complete the preliminary engineering (P/E) for the Sepulveda grade separation by summer 2019. The P/E on the Van Nuys grade separation will follow the P/E for Sepulveda in order to coordinate with the connecting East San Fernand Valley Transit Corridor Light Rail Station on Van Nuys Boulevard. We plan to include both grade separations in one contract, but we will evaluate the procurement strategy and may consider issuing a separate contract for each aerial structure. While the main construction contract is scheduled to begin in Fall of 2021, utility relocation and site work will commence as originally planned in FY20.

Budget

A preliminary rough order of magnitude (ROM) cost estimate of the recommended project, based on conceptual designs, currently ranges from $320 to $393 million. A refined cost estimate will be determined after completion of the preliminary engineering of the gated intersections and the grade separations. The project's funding plan currently includes $245.3 million in Measure M and $75 million in SB-1 Local Partnership Program (LPP) grant funds. Metro is committed to secure funds for any additional project costs above current programmed revenues.

To assist you in reviewing our request, we have attached a scope comparison table , project maps (original & revised scope) and revised PPRs (Attachment C) . We thank you for considering the modifications to our project scope. If you have any further questions, please contact me at (213) 922-2822 or Nela De Castro at (213) 922-6166.

Sincerely,

Cosett P. Stark

COSETTE P. STARK
Deputy Executive Officer
Grants Management and Oversight

Attachments

cc: Patrick Olsen, Scott Kingsbury, Arthur Murray, HQ

ROAD REPAIR & ACCOUNTBILITY ACT OF 2017
LOCAL PARTNERSHIP COMPETITIVE PROGRAM
SCOPE CHANGE AMENDMENT REQUEST
METRO ORANGE LINE BUS RAPID TRANSIT IMPROVEMENTS

Exhibit B
REVISED PROJECT PROGRAMMING REQUEST

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08)

General Instructions

Amendment (Existing Project) Yes					Date: 01/07/19	
District	**EA**	**Project ID**	**PPNO**	**MPO ID**	**Alt Proj. ID / prg.**	
07			5504			

County	**Route/Corridor**	**PM Bk**	**PM Ahd**	**Project Sponsor/Lead Agency**	
LA				Los Angeles County Metropolitan Transportation Authority	
				MPO	**Element**
				SCAG	MT

Project Manager/Contact	**Phone**	**E-mail Address**
Fulgene Asuncion	(213)922-3025	asuncionf@metro.net

Project Title

Metro Orange Line Bus Rapid Transit Improvements

Location (Project Limits), Description (Scope of Work)

Amended - Gates: In Los Angeles County on the Metro Orange Line (MOL) between the North Hollywood Station & Chatsworth Station, BRT improvements will be constructed. The scope includes construction of aerial grade separated structures that elevate the busway and associated BRT stations at Van Nuys & Sepulveda Blvds. The aerial structure at Sepulveda spans over the City of Los Angeles' Bureau of Street Services Private Crossing, east of the Sepulveda grade separation, & returns to an at-grade alignment at Kester Blvd. The aerial structure at Van Nuys Blvd. also spans over Vesper Ave. & requires closure of Tyrone Avenue, east of Van Nuys Blvd. An adjacent grade separated bike/ped overcrossing that runs parallel to the Sepulveda & Van Nuys grade separations will also be constructed. The Project includes installation of railroad-type gate systems at 35 crossings along the MOL.

Component	**Implementing Agency**
PA&ED	Los Angeles County Metropolitan Transportation Authority
PS&E	Los Angeles County Metropolitan Transportation Authority
Right of Way	Los Angeles County Metropolitan Transportation Authority
Construction	Los Angeles County Metropolitan Transportation Authority

Legislative Districts

Assembly:	45,46	**Senate:**	18,27	**Congressional:**	29,30

Project Benefits

The MOL is operating near capacity with standing passenger loads & very tight headways. To continue to meet demand, the project will provide gating & grade separation of the busway as an innovative, safe & cost-effective way to increase speed & thereby maximize roadway capacity. It will improve traffic flow, reduce traffic congestion in the community, improve transit operations & transit options for the community, which should reduce traffic collisions & greenhouse gas emissions. Ped/Bicycle Facilities miles constructed up to 1 mile.

Purpose and Need

The project will expand transit services, increase transit ridership, improve transit safety, enhance the access and convenience of the traveling public, and provide or facilitate a viable alternative to driving. Since the MOL is now at capacity with riders currently delayed by cross-traffic intrusions into the MOL busway, it is needed to improve operating speeds, ridership, capacity, schedule reliability and safety, while benefitting the surrounding community and ensuring cost effectiveness.

Category	**Outputs/Outcomes**	**Unit**	**Total**
Local streets and roads	Local road operational improvements	each	35

ADA Improvements No	Bike/Ped Improvements Yes	Reversible Lane analysis N
Inc. Sustainable Communities Strategy Goals Y	Reduces Greenhouse Gas Emissions Y	

Project Milestone	**Existing**	**Proposed**
Project Study Report Approved		
Begin Environmental (PA&ED) Phase	06/15/2018	
Circulate Draft Environmental Document **Document Type**		07/26/18
Draft Project Report		
End Environmental Phase (PA&ED Milestone)	07/31/2018	08/27/18
Begin Design (PS&E) Phase		11/01/18
End Design Phase (Ready to List for Advertisement Milestone)		02/28/21
Begin Right of Way Phase	10/31/2018	06/01/19
End Right of Way Phase (Right of Way Certification Milestone)	03/31/2020	06/30/21
Begin Construction Phase (Contract Award Milestone)	03/31/2020	03/01/22
End Construction Phase (Construction Contract Acceptance Milestone)	08/31/2023	02/28/25
Begin Closeout Phase	10/31/2023	03/01/25
End Closeout Phase (Closeout Report)	12/31/2024	12/31/25

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STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08)

Complete this page for amendments only

Date: 01/07/19

District	County	Route	EA	Project ID	PPNO	Alt. ID
07	LA				5504	

SECTION 1 - All Projects

Project Background

Programming Change Requested

Reason for Proposed Change

Previously, a single aerial grade separation spanning Van Nuys Boulevard to Sepulveda Boulevard was proposed, but based on conceptual design, a more cost-effective and efficient design now will include separate aerial structures at each of these two arterial street crossings.

If proposed change will delay one or more components, clearly explain 1) reason the delay, 2) cost increase related to the delay, and 3) how cost increase will be funded

Design of Van Nuys grade separation will start once the East San Fernando Valley Transit Corridor Project environmentally clears the scope for the terminal station connection at the Orange Line Van Nuys station. Also, the completion of real estate acquisitions will take longer than the initial anticipated completion date.

Other Significant Information

SECTION 2 - For SB1 Projects Only

Project Amendment Request (Please follow the individual SB1 program guidelines for specific criteria)

SECTION 3 - All Projects

Approvals

I hereby certify that the above information is complete and accurate and all approvals have been obtained for the processing of this amendment request.*

Name (Print or Type)	Signature	Title	Date
Cosette P, Stark	Cosette P. Stark	DEO, Grants Management & Oversight	8/8/2019

Attachments

1) Concurrence from Implementing Agency and/or Regional Transportation Planning Agency
2) Project Location Map

Additional Information

Emissions Reduction Savings from Caltrans Life-Cycle Benefit-Cost Analysis Model v6.2
(Tons over 20 years / Millions of dollars over 20 years)

CO - 800 / $0.1
CO2 - 238,371 / $6.8
NO x - 65 / $2.6
PM10 - 2 / $0.5
PM2.5 - 2
SO x - 2 / $0.3
VOC - 42 / $0.1

The latest operations and traffic analysis for the proposed scope change did not result in a change to the assumptions used to calculate the original emissions reduction figures. The emissions reductions are a result of ridership increases/mode shifts and VMT reduction produced by creating more free-flowing conditions on the Orange Line. The proposed scope change does not change the ability of the project to create more free-flowing conditions on the Orange Line. Therefore, GHG emissions reduction is not expected to change from the original project.

Environmental Document Type: Statutory Exemption: PRC 21080(b)(11)/CEQA Guidelines 15275(a) - 8/27/18

(Gates) 07-LA-Metro_Orange Line BRT_PPR - REVISED 08-09-2019.xls

District	County	Route	EA	Project ID	PPNO	Alt. ID
07	LA, ,	, ,			5504	
Project Title:	Metro Orange Line Bus Rapid Transit Improvements					

Existing Total Project Cost ($1,000s)									
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Implementing Agency
E&P (PA&ED)	14,000							14,000	Los Angeles County Metropolitan
PS&E									Los Angeles County Metropolitan
R/W SUP (CT)									Los Angeles County Metropolitan
CON SUP (CT)									Los Angeles County Metropolitan
R/W		6,000						6,000	Los Angeles County Metropolitan
CON			295,300					295,300	Los Angeles County Metropolitan
TOTAL	14,000	6,000	295,300					315,300	
Proposed Total Project Cost ($1,000s)									**Notes**
E&P (PA&ED)	1,215	350						1,565	The original PPR has $320.3M as the total cost.
PS&E		2,500	9,500					12,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W			1,000					1,000	
CON			65,435					65,435	
TOTAL	1,215	2,850	75,935					80,000	

Fund No. 1:	State SB1 LPP - Local Partnership Program - Competitive program (LPP-C)								Program Code
Existing Funding ($1,000s)									30.10.724.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			75,000					75,000	
TOTAL			75,000					75,000	
Proposed Funding ($1,000s)									**Notes**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 2:	Local Funds - Local Transportation Funds (LTF)								Program Code
Existing Funding ($1,000s)									20.10.400.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)	14,000							14,000	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W		6,000						6,000	
CON			220,300					220,300	
TOTAL	14,000	6,000	220,300					240,300	
Proposed Funding ($1,000s)									**Notes**
E&P (PA&ED)	1,215	350						1,565	
PS&E		2,500	9,500					12,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W			1,000					1,000	
CON			65,435					65,435	
TOTAL	1,215	2,850	75,935					80,000	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08)

General Instructions

Amendment (Existing Project) Yes					Date: 01/07/19	
District	**EA**	**Project ID**	**PPNO**	**MPO ID**	**Alt Proj. ID / prg.**	
07			5504			

County	**Route/Corridor**	**PM Bk**	**PM Ahd**	**Project Sponsor/Lead Agency**	
LA				Los Angeles County Metropolitan Transportation Authority	
				MPO	**Element**
				SCAG	MT

Project Manager/Contact	**Phone**	**E-mail Address**
Fulgene Asuncion	(213)922-3025	asuncionf@metro.net

Project Title

Metro Orange Line Bus Rapid Transit Improvements

Location (Project Limits), Description (Scope of Work)

Amended - Grade Separations: In Los Angeles County on the Metro Orange Line (MOL) between the North Hollywood Station & Chatsworth Station, BRT improvements will be constructed. The scope includes construction of aerial grade separated structures that elevate the busway and associated BRT stations at Van Nuys & Sepulveda Blvds. The aerial structure at Sepulveda spans over the City of Los Angeles' Bureau of Street Services Private Crossing, east of the Sepulveda grade separation, & returns to an at-grade alignment at Kester Blvd. The aerial structure at Van Nuys Blvd. also spans over Vesper Ave. & requires closure of Tyrone Avenue, east of Van Nuys Blvd. An adjacent grade separated bike/ped overcrossing that runs parallel to the Sepulveda & Van Nuys grade separations will also be constructed. The Project includes installation of railroad-type gate systems at 35 crossings along the MOL.

Component	**Implementing Agency**
PA&ED	Los Angeles County Metropolitan Transportation Authority
PS&E	Los Angeles County Metropolitan Transportation Authority
Right of Way	Los Angeles County Metropolitan Transportation Authority
Construction	Los Angeles County Metropolitan Transportation Authority

Legislative Districts

Assembly:	45,46	**Senate:**	18,27	**Congressional:**	29,30

Project Benefits

The MOL is operating near capacity with standing passenger loads and very tight headways. To continue to meet demands, the project will provide gating and grade separation of the busway as an innovative, safe and cost-effective way to increase speed and thereby maximize roadway capacity. It will improve traffic flow, reduce traffic congestion in the community, improve transit operations and transit options for the community, which should reduce traffic collisions and vehicle greenhouse gas emissions.

Purpose and Need

The project will expand transit services, increase transit ridership, improve transit safety, enhance the access and convenience of the traveling public, and provide or facilitate a viable alternative to driving. Since the MOL is now at capacity with riders currently delayed by cross-traffic intrusions into the MOL busway, it is needed to improve operating speeds, ridership, capacity, schedule reliability and safety, while benefitting the surrounding community and ensuring cost effectiveness.

Category	**Outputs/Outcomes**	**Unit**	**Total**
Intercity Rail/Mass Trans	At-grade crossings eliminated	each	4
Local streets and roads	Pedestrian/Bicycle facilities miles constructed	Miles	1
Intercity Rail/Mass Trans	New bridges	each	2

ADA Improvements No	Bike/Ped Improvements Yes	Reversible Lane analysis N
Inc. Sustainable Communities Strategy Goals Y	Reduces Greenhouse Gas Emissions Y	

Project Milestone	**Existing**	**Proposed**
Project Study Report Approved		
Begin Environmental (PA&ED) Phase	06/15/2018	
Circulate Draft Environmental Document **Document Type**		07/26/18
Draft Project Report		
End Environmental Phase (PA&ED Milestone)	07/31/2018	08/27/18
Begin Design (PS&E) Phase		11/01/18
End Design Phase (Ready to List for Advertisement Milestone)		08/30/20
Begin Right of Way Phase	10/31/2018	11/01/18
End Right of Way Phase (Right of Way Certification Milestone)	03/31/2020	06/30/21
Begin Construction Phase (Contract Award Milestone)	03/31/2020	08/01/21
End Construction Phase (Construction Contract Acceptance Milestone)	08/31/2023	02/28/25
Begin Closeout Phase	10/31/2023	03/01/25
End Closeout Phase (Closeout Report)	12/31/2024	12/31/25

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(Gates) 07-LA-Metro_Orange Line BRT_PPR - REVISED 08-09-2019.xls

District	County	Route	EA	Project ID	PPNO	Alt. ID
07	LA, ,	, ,			5504	
Project Title	Metro Orange Line Bus Rapid Transit Improvements					

Existing Total Project Cost ($1,000s)									
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Implementing Agency
E&P (PA&ED)	14,000							14,000	Los Angeles County Metropolitan
PS&E									Los Angeles County Metropolitan
R/W SUP (CT)									Los Angeles County Metropolitan
CON SUP (CT)									Los Angeles County Metropolitan
R/W		6,000						6,000	Los Angeles County Metropolitan
CON			295,300					295,300	Los Angeles County Metropolitan
TOTAL	14,000	6,000	295,300					315,300	
Proposed Total Project Cost ($1,000s)									**Notes**
E&P (PA&ED)	1,215	350						1,565	The original PPR has $320.3M as the total cost.
PS&E		2,500	9,500					12,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W			1,000					1,000	
CON			65,435					65,435	
TOTAL	1,215	2,850	75,935					80,000	

Fund No. 1:	State SB1 LPP - Local Partnership Program - Competitive program (LPP-C)								Program Code
Existing Funding ($1,000s)									30.10.724.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			75,000					75,000	
TOTAL			75,000					75,000	
Proposed Funding ($1,000s)									**Notes**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 2:	Local Funds - Local Transportation Funds (LTF)								Program Code
Existing Funding ($1,000s)									20.10.400.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)	14,000							14,000	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W		6,000						6,000	
CON			220,300					220,300	
TOTAL	14,000	6,000	220,300					240,300	
Proposed Funding ($1,000s)									**Notes**
E&P (PA&ED)	1,215	350						1,565	
PS&E		2,500	9,500					12,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W			1,000					1,000	
CON			65,435					65,435	
TOTAL	1,215	2,850	75,935					80,000	

Additional Information

Emissions Reduction Savings from Caltrans Life-Cycle Benefit-Cost Analysis Model v6.2
(Tons over 20 years / Millions of dollars over 20 years)

CO - 800 / $0.1
CO2 - 238,371 / $6.8
NO x - 65 / $2.6
PM10 - 2 / $0.5
PM2.5 - 2
SO x - 2 / $0.3
VOC - 42 / $0.1

The latest operations and traffic analysis for the proposed scope change did not result in a change to the assumptions used to calculate the original emissions reduction figures. The emissions reductions are a result of ridership increases/mode shifts and VMT reduction produced by creating more free-flowing conditions on the Orange Line. The proposed scope change does not change the ability of the project to create more free-flowing conditions on the Orange Line. Therefore, GHG emissions reduction is not expected to change from the original project.

Environmental Document Type: Statutory Exemption: PRC 21080(b)(11)/CEQA Guidelines 15275(a) - 8/27/18

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08)

Complete this page for amendments only

Date: 01/07/19

District	County	Route	EA	Project ID	PPNO	Alt. ID
07	LA				5504	

SECTION 1 - All Projects

Project Background

Programming Change Requested

Reason for Proposed Change

Previously, a single aerial grade separation spanning Van Nuys Boulevard to Sepulveda Boulevard was proposed, but based on conceptual design, a more cost-effective and efficient design will include separate aerial structures at each of these two arterial street crossings.

If proposed change will delay one or more components, clearly explain 1) reason the delay, 2) cost increase related to the delay, and 3) how cost increase will be funded

Design of the Van Nuys grade separation will start once the East San Fernando Valley Transit Corridor Project environmentally clears the scope for the terminal station connection at the Orange Line Van Nuys station. Also, the completion of real estate acquisitions will take longer than the initial anticipated completion date.

Other Significant Information

SECTION 2 - For SB1 Projects Only

Project Amendment Request (Please follow the individual SB1 program guidelines for specific criteria)

SECTION 3 - All Projects

Approvals

I hereby certify that the above information is complete and accurate and all approvals have been obtained for the processing of this amendment request.*

Name (Print or Type)	Signature	Title	Date
Cosette P. Stark	Cosette P. Stark	DEO, Grants Management & Oversight	8/8/2019

Attachments

1) Concurrence from Implementing Agency and/or Regional Transportation Planning Agency
2) Project Location Map

ROAD REPAIR & ACCOUNTBILITY ACT OF 2017
LOCAL PARTNERSHIP COMPETITIVE PROGRAM
SCOPE CHANGE AMENDMENT REQUEST
METRO ORANGE LINE BUS RAPID TRANSIT IMPROVEMENTS

Exhibit C
ANALYSIS/REVISED
PROJECT REPORT

METRO ORANGE LINE (MOL)
BUS RAPID TRANSIT (BRT) IMPROVEMENTS

PROJECT REPORT

Project Report

APPROVAL RECOMMENDED:

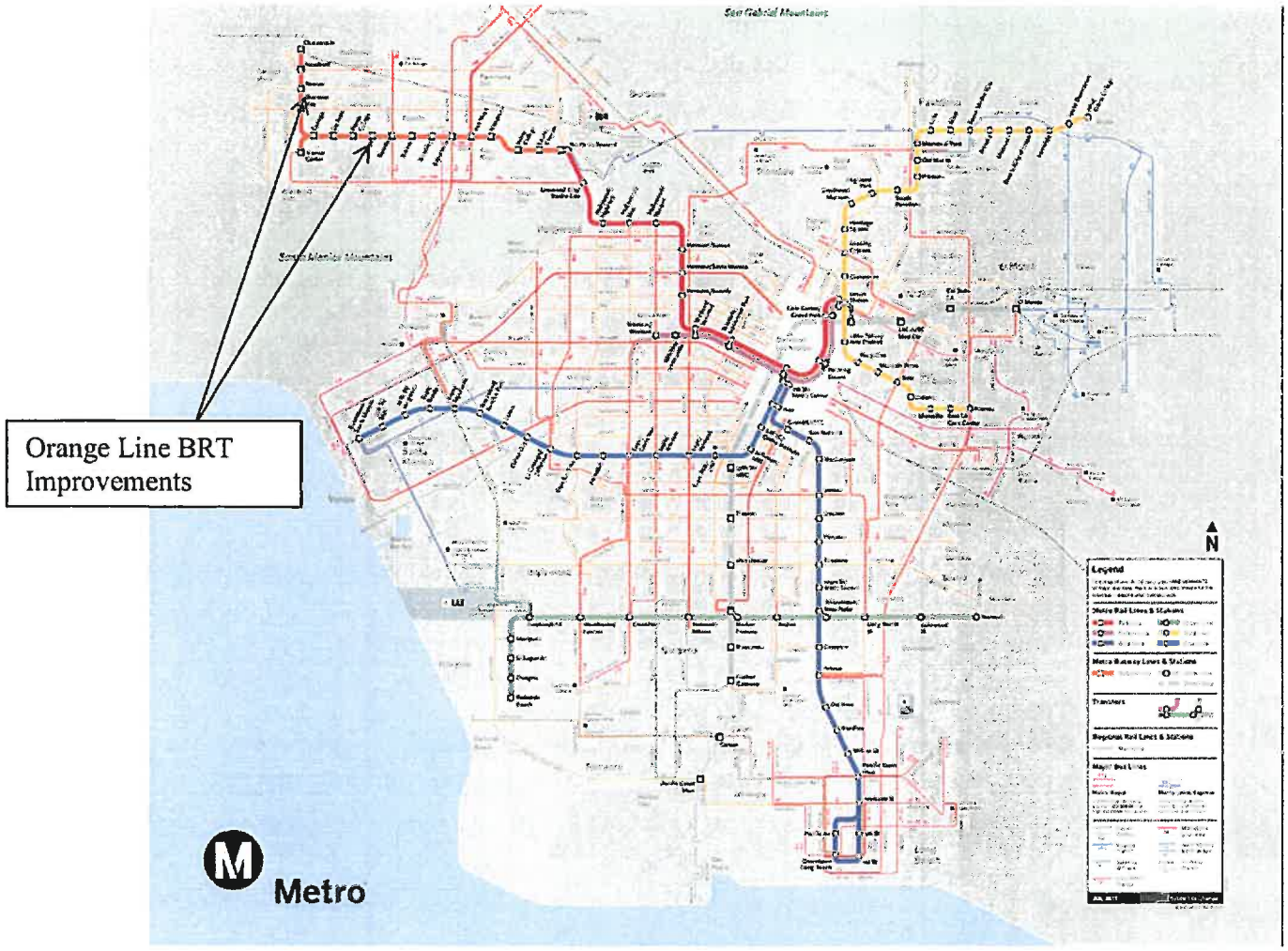
Hitesh Patel, Project Manager

PROJECT APPROVED:

David Mieger, Executive Officer

May 21, 2019
Date

Vicinity Map



1. INTRODUCTION:

Project Location:

The project is located in the City of Los Angeles, in the central part of Los Angeles County, approximately 20 miles northwest of downton Los Angeles in CALTRANS District 7. The corridor connects major activity areas through the heart of the San Fernando Valley, including Warner Center, Pierce College, the Sepulveda Basin Recreation Area, the Valley Government Center in Van Nuys, Valley College, and the North Hollywood Arts District.

The nearly 18-mile Metro Orange Line Bus Rapid Transit (MOL BRT) runs north-south along a two-lane, dedicated busway from the Metrolink Chatsworth Sation to Canoga Station for four miles and runs east-west for approximately 14 miles from the

Canoga Station to the Metro Red Line North Hollywood Station. The MOL encompasses 17 stations and runs parallel to Chandler Boulevard, Oxnard Street and Victory Boulevard and Canoga Avenue. There is also a bikeway running adjacent to the MOL busway that is comprised of two segments: Class II bike lanes from the North Hollywood Station to Coldwater Canyon Avenue, and a Class I dedicated bicycle path adjacent to the MOL busway from Coldwater Canyon on the east/west segment to Prairie on the north/south segment.

Project Description:

The MOL route is one of the most successful transit services in the Metro transit system, providing a vital, high-capacity transit link for an estimated 23,000 weekday daily riders and serving as a viable transportation alternative for those who would otherwise travel on the parallel U.S. Route 101, one of the top ten most congested highways in California. The line opened on October 29, 2005, and was extended to Chatsworth on June 30, 2012. The MOL runs from the North Hollywood Station, which connects to Metro's Red Line Subway system terminating at LA Union Station, and to the Chatsworth Station on the west.

The MOL BRT Improvements project includes grade separated structures that would elevate the busway, bike path, and associated stations at Van Nuys and Sepulveda Boulevards. The Project also includes railroad-type gate systems at 35 MOL crossings along the line (Attachment A). Gating and grade separations will help reduce the incidents of collisions between vehicles and MOL buses, allowing an increase in the speeds of buses along the corridor to reduce travel times.

Purpose and Need:

Passenger volumes are near capacity in certain segments with buses carrying approximately 1,300 passengers per hour per direction, exceeding Metro Transit Service Policy that directs that BRT service carry 1,100 riders per hour per direction. As the MOL serves a dense and growing corridor, ridership demand is expected to continue to grow over the next 10 years.

Metro currently operates three-door, 60-foot articulated buses on the MOL, with a seating capacity of 57 passengers, providing a total of 411 weekday bus trips (206 eastbound and 205 westbound). The MOL has 43 at-grade crossings, five pedestrian crossings, and is complemented by an 8.2-mile bikeway located adjacent to the busway.

Red lights at intersection crossings result in overall delays of six to ten minutes. In addition, serious safety concerns exist along the Project corridor due to excessive traffic violations and collisions at intersections. The Project corridor has nineteen red light photo enforcement cameras, which recorded, on average, 5,000 to 6,000 traffic violations of cars illegally entering the busway each month during 2018. The proposed four-quadrant gating-system will prevent cars from entering the busway,

drastically reducing opportunities for collisions. Therefore, the purpose and need for the Project is to improve operating speeds, ridership, capacity, and safety on the MOL, while benefitting the surrounding community and ensuring cost effectiveness.

2. PREFERRED ALTERNATIVE:

The Metro Orange Line 2017 Technical Study evaluated the feasibility of grade separation improvements at key intersections and other improvements that would enhance existing bus service, performance, and ridership. Other improvements considered included minor street closures, better transit signal priority technology, improved bus signal communication, and a four quadrant gating system. At the conclusion of the feasibility study, several packages of improvements were identified and among the packages of improvements, a single recommended option was developed. This alternative would address the operational needs of Orange Line buses and passengers, and improve safety at all the intersections.

The preferred alternative would provide the maximum potential improvement for the entire MOL corridor, as it allows for additional features that restrict and limit potential conflicting vehicular, pedestrian, and bicycle movements across the busway at the highest number of crossings. The combination of grade separations and gate systems would significantly impede the ability of cross-street traffic and pedestrians to illegally cross the busway while a bus is approaching or within the crossing, which would result in a significant reduction of bus-involved collisions.

This alternative is recommended because:

- It achieves superior and significant travel time savings for MOL of up to 16 minutes/29 percent each direction;
- Ridership could be increased by approximately 39 percent;
- It readies the transportation corridor for LRT conversion;
- Safety is markedly improved by nearly eliminating vehicular intrusions into the busway;

Moreover, this alternative provides commensurate improvements to the adjacent regionallysignificant active transportation facility, in furtherance of first-last mile connectivity to transit. It also accommodates two other planned, intersecting transit: East San Fernando Valley and Sepulveda Pass Transit Corridors.

3. SCOPE:

<u>Railroad Type Gates at 35 intersections along the OL:</u>
Metro has performed a detailed traffic analysis in close coordination with the Los Angeles Department of Transportation (LADOT) and is currently working with LADOT to address traffic impacts and additional delays due to gates. Metro will

explore operating buses less frequently with longer headways with two-vehicle platoons to increase passenger capacity while minimizing the frequency of gate activation and resulting delays to cross traffic. Coordination with the City of Los Angeles is also underway in implementing a pilot installation of railroad gates at a non-public, traffic signal-controlled intersection on the MOL to test and verify the reliable activation and proper operation of gates for BRT application.

Van Nuys BRT Grade Separation (GS):
The MOL GS structure would elevate the busway and the associated station at Van Nuys Blvd. The MOL developed and coordinated six concepts for connecting the MOL Aerial Station with the ESFV Light Rail Transit (LRT) project. The preliminary engineering for the Van Nuys Grade Separation is planned to commence after the ESFV Light Rail Transit (LRT) project has analyzed the connectivity options and incorporated the selected option in the ESFV Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR).

Sepulveda BRT Separation:
The MOL GS structure would elevate the busway and the associated station at Sepulveda Blvd. Preliminary engineering is currently underway for the Sepulveda Grade Separation and will be coordinated with the Sepulveda Transit Corridor feasibility study.

Bike Path Grade Separations at Van Nuys and Sepulveda Blvds.
The Bike Path GS structure would elevate the bike path at Van Nuys and Sepulveda Blvds. The at-grade bike path will be maintained. The design of Bike Path GS will be developed in coordination and in parallel with the Van Nuys GS and Sepulveda GS.

3. PROJECT COST AND FUNDING

A preliminary rough order of magnitude (ROM) cost estimate of the recommended Project, based on conceptual designs, currently ranges from $320 to $393 million. A refined cost estimate will be determined after completion of the preliminary engineering of the gated intersections and the GS. The Project is currently funded with $245.3 million in Measure M and $75 million in SB-1 Local Partnership Program (LPP) Grant funds. Metro is committed to fund any cost increases to the Project above current programmed revenues.

4. PROJECT SCHEDULE:

GRADE SEPARATIONS:

Project Milestone	Existing	Proposed
Project Study Report Approved		
Begin Environmental (PA&ED) Phase	06/15/2018	
Circulate Draft Environmental Document (Document Type)		07/26/18
Draft Project Report		
End Environmental Phase (PA&ED Milestone)	07/31/2018	08/27/18
Begin Design (PS&E) Phase		11/01/18
End Design Phase (Ready to List for Advertisement Milestone)		08/30/20
Begin Right of Way Phase	10/31/2018	11/01/18
End Right of Way Phase (Right of Way Certification Milestone)	03/31/2020	06/30/21
Begin Construction Phase (Contract Award Milestone)	03/31/2020	08/01/21
End Construction Phase (Construction Contract Acceptance Milestone)	08/31/2023	02/28/25
Begin Closeout Phase	10/31/2023	03/01/25
End Closeout Phase (Closeout Report)	12/31/2024	12/31/25

GATES:

Project Milestone	Existing	Proposed
Project Study Report Approved		
Begin Environmental (PA&ED) Phase	06/15/2018	
Circulate Draft Environmental Document (Document Type)		07/26/18
Draft Project Report		
End Environmental Phase (PA&ED Milestone)	07/31/2018	08/27/18
Begin Design (PS&E) Phase		11/01/18
End Design Phase (Ready to List for Advertisement Milestone)		02/28/21
Begin Right of Way Phase	10/31/2018	06/01/19
End Right of Way Phase (Right of Way Certification Milestone)	03/31/2020	06/30/21
Begin Construction Phase (Contract Award Milestone)	03/31/2020	03/01/22
End Construction Phase (Construction Contract Acceptance Milestone)	08/31/2023	02/28/25
Begin Closeout Phase	10/31/2023	03/01/25
End Closeout Phase (Closeout Report)	12/31/2024	12/31/25

5. POTENTIAL RISK AREAS

A number of potential risk areas identified will require further attention and analysis during subsequent project phases. The issues include:

Risk Area 1: Unacceptable traffic impacts from adding gates at some locations could cause delay in approval by the City.

As the gate systems require additional advance warning time, the project assumes changes to busway operations to minimize cross-traffic delays. The preferred alternative assumes that during peak periods, buses would operate in two-vehicle platoons at six-minute headways. This operation would allow the busway to carry the same amount of peak period riders at increased headways, thereby reducing the frequency of gate activation and reducing associated potential cross traffic delays.

Mitigations: Continue dialogue with City staff and continue to analyze traffic impacts.

Risk Area 2: New technology for bus platooning does not meet Metro requirements.

The current design of the traffic control systems for the four-quadrant gate systems and pedestrian gate systems assumes buses will be manually platooned with 2 buses per platoon with a 10 second gap between buses at 6 minute headways. New technology for bus platooning is being explored as part of the pilot gate testing to improve bus operation and potentially reduce traffic impacts.

Mitigations: Complete pilot gate testing as early as practical

Risk Area 3: Gates and platooning for bus transit does not exist in US; new technology to be developed.

Railroad Type Gates are common for railroad crossings, but none currently exist for stopping cross street traffic when buses approach the intersections. Metro is conducting a pilot gate to utilize loop detection for controlling gates for busway operation. Metro will also test other technologies for gate detection/control.

Mitigations: Develop technical solution in concert with current scope and design; Review alternate options in case pilot gate testing and bus platooning technology are not feasible.

Risk Area 4: Sepulveda and East San Fernando Valley Transit Corridor Projects may affect MOL Grade Separations at Sepulveda and Van Nuys.

The Sepulveda Transit Corridor (STC) is completing a feasibility study that is evaluating a range of rail transit alternatives to serve the San Fernando Valley and the Westside Los Angeles, including the Los Angeles Internationa Airport (LAX) area. The feasibility study is expected to be completed in Fall 2019 and is looking at alternatives that connect to the MOL at Sepulveda or Van Nuys, the two locations that are recommended for grade separations as part of the MOL improvements project. The STC environmental review of selected alternatives is expected to begin in early 2020. East San Fernando Valley (ESFV) Light Rail Transit is currently preparing a Final EIS/EIR based on the Locally Preferred Alternative (LPA) recently selected by the Metro Board. In conjunction with the Final EIS/EIR, the ESFV team is modifying the LPA alignment to enable it to better connect with an elevated MOL

station at Van Nuys. Preliminary Engineering (PE) for the MOL grade separation at Sepulveda Boulevard is currently underway, with anticipated completion in August 2019, before any information on STC connectivity/selected alternative is available. MOL construction may need to be modified for a future connection to STC. Grade separations may conflict with some STC alternatives or even become part of the STC project.

Mitigations: Early and ongoing coordination with Sepulveda and ESFV project teams.

Risk Area 5: MOL Van Nuys grade separation on hold until scope of connectivity with ESFV project is approved.

Mitigations: Continue close coordination with ESFV project team to reconcile station foot print.

Risk Area 6: Right-of-Way (ROW) impacts and design issues related to aerial bike path at Sepulveda and Van Nuys may exceed current forecasted budget.

Issues related to the aerial bike path at Sepulveda include:

- Property acquisitions required at Sepulveda with the re-routing of the existing at-grade pedestrian/bike path to the north of the station and an elevated bike path is also routed to the north of the station over Sepulveda Blvd.

- Sepulveda parking lot access road require relocationg through an adjacent property to fit additional escalators.

- Existing City of Los Angeles Depaprtment of Water and Power (LADWP) transformer serving LA Fitness is affected by the overhead proximity of the aerial bikeway.

- ROW is required in the north-east corner of Sepulveda Blvd. and includes driveway access which may result in a complicated and costly ROW take.

- Metro's existing parking easement would need to be terminated which will result in eliminating approximately 50 parking spaces at the north-east corner of Sepulveda Blvd.

Mitigations: Real Estate team to review and prepare ROM estimate for property acquisitions. Design team to review design of aerial bike path at Sepulveda and Van Nuys and develop alternate designs and finalize escalator location.

Risk Area 7: LADWP is requiring relocation of conflicting overhead power lines to underground. The cost of undergrounding power lines and the communication lines are significantly higher and may affect overall project cost.

Mitigations: Support utility design and finalize utility relocation matrix to develop a detailed schedule.

Risk Area 8: City agency review and approval time for drawing submittals, traffic management plans, traffic control plans and permits may delay project schedule.

Mitigations: Continue ongoing collaboration with City staff to streamline and prioritize design submittals and traffic control plans.

Risk Area 9: City of Los Angeles Department of Transportation (LADOT) Bikeway Project on Chandler.

LADOT recently informed us of the City's plan to implement a 3-mile bikeway project on Chandler Blvd., from Leghorn Ave. to Vineland Ave., that will be completed in 2020. It appears that these modifications would affect 8 intersections/crossings, reducing the east & west Chandler Ave approaches by 1 thru lane. The biggest impacts would likely occur at the Laurel Canyon and Coldwater Canyon intersections (where delays are already high). If traffic volumes remained as-is (no diversion to other routes), then this bike lane would result in worse delay/LOS at all of these locations or potentially eliminate gates at affected crossings along Chandler.

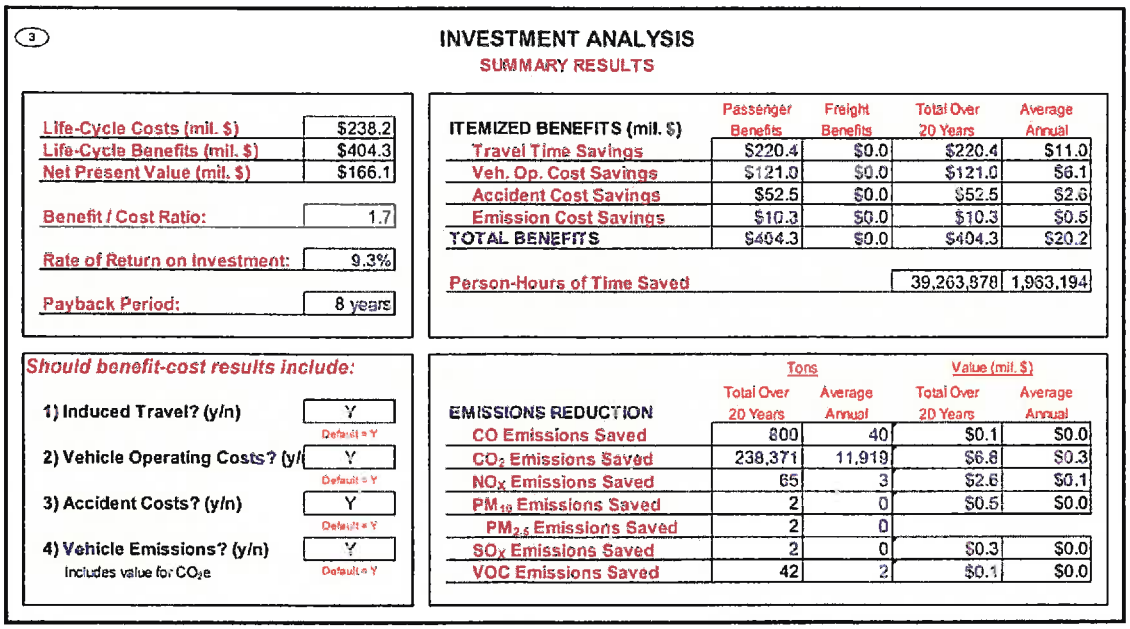
Mitigations: Continue coordination with LADOT on this project.

6. PROJECT BENEFITS

Based on the Caltrans' Life-Cycle Benefit-Cost Analysis Model 6.2 (Cal-B/C v.6.2), provided in Attachment B, the Project would save commuters approximately $220.4 million in travel time savings, $121 million in vehicle operating cost savings, and $10.3 million in emission cost savings over a 20-year period.

With a benefit-cost ratio (BCR) of 1.7, the Project is likely to generate economic benefits that justify its costs.

Summary Results of Revised Benefit/Cost Analysis for Scope Change:



INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$238.2
Life-Cycle Benefits (mil. $)	$404.3
Net Present Value (mil. $)	$166.1
Benefit / Cost Ratio:	1.7
Rate of Return on Investment:	9.3%
Payback Period:	8 years

ITEMIZED BENEFITS (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$220.4	$0.0	$220.4	$11.0
Veh. Op. Cost Savings	$121.0	$0.0	$121.0	$6.1
Accident Cost Savings	$52.5	$0.0	$52.5	$2.6
Emission Cost Savings	$10.3	$0.0	$10.3	$0.5
TOTAL BENEFITS	$404.3	$0.0	$404.3	$20.2
Person-Hours of Time Saved			39,263,878	1,963,194

Should benefit-cost results include:

1) Induced Travel? (y/n)	Y
2) Vehicle Operating Costs? (y/	Y
3) Accident Costs? (y/n)	Y
4) Vehicle Emissions? (y/n) Includes value for CO_2e	Y

EMISSIONS REDUCTION	Tons: Total Over 20 Years	Tons: Average Annual	Value (mil. $): Total Over 20 Years	Value (mil. $): Average Annual
CO Emissions Saved	800	40	$0.1	$0.0
CO_2 Emissions Saved	238,371	11,919	$6.8	$0.3
NO_X Emissions Saved	65	3	$2.6	$0.1
PM_{10} Emissions Saved	2	0	$0.5	$0.0
$PM_{2.5}$ Emissions Saved	2	0		
SO_X Emissions Saved	2	0	$0.3	$0.0
VOC Emissions Saved	42	2	$0.1	$0.0

The Project will provide optimal improvements to address five specific goals and needs: improve operations; improve ridership, address growth; support efficient land use; address safety concerns; and ensure cost effectiveness.

Improve Operating Speeds and Reliability

The number of times buses stop at traffic signals along the route significantly affects the overall MOL operating speeds and service. The Technical Study found that the west/northbound travel time from North Hollywood to Canoga station averaged 41.3 minutes. The east/southbound travel time from Canoga to North Hollywood station averaged approximately 38.5 minutes. Average time to travel the 17 miles end-to-end on the MOL from the Chatsworth to North Hollywood Stations during the weekday PM peak was as high as 50 to 55 minutes. Red lights result in delays to buses of approximately 10 minutes in the westbound and six minutes in the eastbound direction.

By providing grade separated busway and 35 gating intersections, bus speeds can be increased and current riders' complaints of excessive cross-Valley travel times and delays at intersections may be addressed. With the Project, MOL bus travel times are anticipated to be reduced by an average (peak and off-peak) of 12.6 minutes in the west/northbound direction and 3.4 minutes in the east/southbound direction, for a total average reduction in travel times of 16 minutes each way, a 39 percent reduction from current travel times. In addition, after Project completion, two-vehicle bus platoons will be used during peak periods to minimize the frequency of gate activation and delays to cross-traffic.

Improve Transit Ridership

In 2017, average daily ridership for the MOL was around 23,760 on a typical weekday, 13,768 on Saturdays, and 10,551 on Sundays (see Figure4). The Technical Study predicted that, without the Project, ridership is likely to increase to just 25,900 daily boardings by 2025.

Current operating speeds on the MOL corridor are approximately 20 to 21 mph, including delay/ dwell times for boardings/alighting at stations on all service days. The Project is expected to increase operating speeds to an average of 30 mph, a 50 percent increase over current levels. The Technical Study found that a 20 to 30 percent speed increase and travel time reliability may result in a ridership increase of approximately 39 percent. With the expected 50 percent speed improvement, ridership is likely to increase even more than the projections in the Technical Study.

Address Growth

The MOL is operating near capacity, with standing passenger loads and very frequent headways, up to every four minutes, during peak hours. To continue to meet demands, the Project will provide gating and grade separation of the busway as an innovative, safe, and cost-effective way to reduce BRT end-to-end travel time, thereby, allowing for more buses to operate in the corridor. By enhancing operational capacity through increased speeds, the Project will address ridership increases likely to result from population and employment growth. Population densities are concentrated north of the MOL corridor between the North Hollywood and Sepulveda Stations (see Figure 5). Employment densities are relatively consistent throughout the MOL service area with a concentration of jobs at and near the Warner Center and near major intersections on Van Nuys, Sepulveda, and Reseda Boulevards (see Figure 6). A total of 20 percent growth in population and 26 percent growth in employment from 2012 to 2040 are projected for the MOL service area1. The Project will address ridership increases resulting from this population and employment growth.

Support Efficient Land Use

By enhancing operational capacity with increased speeds and service availability and convenience on the MOL, the Project will address potential ridership increases.

Address Safety Concerns

Based on incident data from 2018, there were 24 collisions and an average of 5,000 to 6,000 red light violations (through movements by vehicles crossing the MOL corridor) recorded along the MOL corridor from North Hollywood to Canoga. Along the MOL corridor, red light photo enforcement cameras have been installed at 19 locations between Tujunga and Nordhoff.

Key locations on the MOL corridor will benefit from improvements that reduce conflicts between MOL buses, vehicles, bicyclists, and pedestrians. In particular, grade separations at key intersections can minimize conflicts and prevent incidents by physically separating the MOL corridor from perpendicular roadways. Railroad-style quadrant gates will address safety concerns by managing and monitoring vehicle and

bicycle/pedestrian interactions with MOL operations. By blocking cars, pedestrians, and bicyclists from entering the busway when they do not have the right-of-way, the Project will improve safety for all as the number of collisions following Project completion is expected to drop significantly.

Ensure Cost Effectiveness

The MOL is a successful BRT system with 23,000 average weekday riders in 2018. As detailed in Attachment B, the Project has a benefit-cost ratio of 1.5, ensuring that costs are commensurate with benefits to continue the overall cost-effectiveness of the system.

7. ATTACHMENTS (Number of Pages)

A. Project Map
B. Updated Benefit Cost Analysis

ATTACHMENT A: PROJECT MAP

Attachment B

Comprehensive Benefit/Cost Analysis for Metro Orange Line BRT Improvements Scope Change

The following tables present the assumptions and results for the original and proposed scope of the Metro Orange Line BRT Improvements project using the Caltrans Benefit/Cost Analysis Model (BCA). Overall, the new assumptions and BCA Results for the proposed scope change reflect not only the scope change, but also improved understanding of and data for the entire project.

Summary of Tables:

- **Table 1. Comparison of Benefit/Cost Analysis Assumptions**

  Table 1 shows the original and new values used for the Caltrans Benefit/Cost Analysis Model (BCA).

  There is no change to most variables between the original and proposed scope change. This is because the proposed scope change does not cause changes to the model from which those values originate (i.e. the study area is the same). At the time of application for the original scope, the 2017 analysis focused on the 12.7-mile segment from North Hollywood to Canoga. The variables for which there are new values (i.e. variables related to travel time/delay) originate from a different model (Traffic Analysis Model). The 2018 analysis in Table 1 below shows the performance metrics for all segments of the Orange Line corridor. To facilitate understanding of the changed values, the line numbers in Table 1 correspond with the line numbers in Table 2, which provides explanation for changed values by comparing the methodology, assumptions, and approaches used for the original and new values.

- **Table 2. Comparison of Methodology/Assumptions/Approach**

  Table 2 compares the methodology, assumptions, and approaches to the analyses used to develop the values for the BCA.

- **Table 3. Original Benefit/Cost Analysis**

  As noted, the original BCA was conducted using values from analyses based on conceptual design and covering only a segment of the Orange Line for travel time/delay.

- **Table 4. Revised Benefit/Cost Analysis for Scope Change**

  Using the new assumptions, the BC ratio for the proposed scope change is higher than the original scope. There is no change to emissions reduction

Table 1. Comparison of Benefit/Cost Analysis Assumptions

Line #	Variable	Unit	Original Value* (from 2017 Analysis)	New Value (estimated from 2018 Analysis)
	Ridership Increase (also decrease in auto trips)	New MOL trips per day	10,100	No change
		New MOL trips per year	3,191,600	No change
1	**MOL In-Vehicle Travel Time Change**	Minutes per trip	North Hollywood to Canoga (12.7 miles) - 12.6	North Hollywood to Chatsworth (18 miles) - 16
	MOL Out-of-Vehicle Travel Time Change	Minutes per trip (Peak)	2	No change
		Minutes per trip (Off-Peak)	0	No change
1	**Parallel Roadway Travel Time**	Minutes per trip (bidirectional average)	North Hollywood to Canoga (12.7 miles) 42	North Hollywood to Chatsworth (18 miles) 54
	Trips during Peak Period	Percent	70%	No change
	Bus Vehicle Miles	Average weekday miles	6183.1	No change
		Average Saturday miles	3725.6	No change
		Average Sunday miles	3487.4	No change
		Annual total estimate	1,982,682	No change
	Change in Automobile VMT	Daily VMT change	- 81,756	No change
		Annual VMT change	- 25,834,896	No change
	Average automobile speed	Miles per hour	20	No change
3	**Vehicles crossing gate quadrant streets**	Number of daily vehicles	305,000	307,000 (with Kester)
		Number of annual vehicles	96,380,000	97,012,000
3	**Vehicles crossing grade separation streets**	Number of daily vehicles	45,000	43,000
		Number of annual vehicles	14,220,000	13,588,000
1-12	**Change in average cross traffic delay for gate quadrants**	Seconds of delay	7	12
	Change in average cross traffic delay for grade separations	Seconds of delay	- 5	No change

*Values shown in 2017 analysis represent the 12.7-mile E-W corridor (North Hollywood to Canoga).

Table 2. Comparison of Methodology/Assumptions/Approach

Line #		2017 Analysis	2018 Analysis
Overall Model (at all locations)			
1	Study Area	North Hollywood to Canoga (E-W segment, 12.7 miles)* * Although the 2017 analysis focused on the 12.7-mile segment of the Orange Line, the Project was extended to the entire 18-mile corridor (North Hollywood to Chatsworth) with the installation of gate systems at all crossings to provide the maximum potential improvement for the entire Orange Line corridor.	North Hollywood to Chatsworth (entire Orange Line, 18 miles)
2	Analysis Output	N-S crossing delay only	LOS analysis, all approaches included
3	Counts	2015 counts	December 2017 counts; project conditions were grown using calculated SCAG growth rates
4	Geometrics	• Existing condition geometries for both existing and project conditions; no design elements included • "Hybrid" project included one full grade separation from Sepulveda to Van Nuys (including Kester), and road crossing closures at Corteen, Tyrone, and Densmore	• Project conditions include conceptual design, including proposed median and gate locations • Two grade separations (one between Sepulveda and City of LA driveway and one between Vesper and Van Nuys; gates at Kester) • Road crossing closure at Tyrone
5	Signal Timing	No changes to intersection signal timings from existing conditions to project conditions	Based on proposed geometric design changes, lead/lag phasing and new protected left-turn phasing added per consultation with LADOT

Table 2. Comparison of Methodology/Assumptions/Approach

Line #		2017 Analysis	2018 Analysis
6	Preemption under Project Conditions	**Basic** at-grade rail crossing preemption that stops traffic only for affected movements (i.e. existing signal timing runs as-is independent of preemption). No advanced preemption or exit phasing assumed.	LADOT Railroad Preemption Form used at each gate crossing (i.e. **hard** preemption). Form includes advanced preemption (i.e. **pedestrian clearance** & busway/track clearance time), gates lowering, gates down, and exit phasing prior to resumption of normal operations.
7	Bus Operations	One 40-foot bus per 6 minutes	Two 60-foot electric buses per 6 minutes, spaced 10 seconds apart as a platoon
8	Pedestrian Activity	No pedestrian crosswalks or counts included	Pedestrian crosswalks, counts, and activity included
Additional Specific Intersection Notes			
9	Chandler Boulevard/ Laurel Canyon Boulevard/MOL Busway	Existing conditions operations maintained in project conditions with exception of overlaid basic preemption	• NB/SB lead-lag left-turn phasing for project conditions • EB/WB lead-lag left-turn phasing for project conditions
10	Chandler Boulevard/ Coldwater Canyon Boulevard/MOL Busway	Existing conditions operations maintained in project conditions with exception of overlaid basic preemption	NB/SB lead-lag left-turn phasing for project conditions
11	Burbank Boulevard/ Fulton Avenue/MOL Busway	Project conditions show the busway does not initiate preemption here or halt any phase operations. This suggests a proposed grade separation in the modeling.	• EB/WB protected left-turn phasing for project conditions • All movements stop when bus platoon crosses intersection

Table 2. Comparison of Methodology/Assumptions/Approach

Line #		2017 Analysis	2018 Analysis
12	Tampa Avenue/ Topham Street/MOL Busway	Existing conditions operations maintained in project conditions with exception of overlaid basic preemption	SBR eliminated under project conditions

Table 3. Original Benefit/Cost Analysis

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INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$238.2
Life-Cycle Benefits (mil. $)	$357.5
Net Present Value (mil. $)	$119.4
Benefit / Cost Ratio:	1.50
Rate of Return on Investment:	8.0%
Payback Period:	9 years

ITEMIZED BENEFITS (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$173.7	$0.0	$173.7	$8.7
Veh. Op. Cost Savings	$121.0	$0.0	$121.0	$6.1
Accident Cost Savings	$52.5	$0.0	$52.5	$2.6
Emission Cost Savings	$10.3	$0.0	$10.3	$0.5
TOTAL BENEFITS	$357.5	$0.0	$357.5	$17.9
Person-Hours of Time Saved			32,888,986	1,644,449

Should benefit-cost results include:

1) Induced Travel? (y/n)	Y	Default = Y
2) Vehicle Operating Costs? (y/	Y	Default = Y
3) Accident Costs? (y/n)	Y	Default = Y
4) Vehicle Emissions? (y/n) Includes value for CO_2e	Y	Default = Y

EMISSIONS REDUCTION	Tons: Total Over 20 Years	Tons: Average Annual	Value (mil. $): Total Over 20 Years	Value (mil. $): Average Annual
CO Emissions Saved	800	40	$0.1	$0.0
CO_2 Emissions Saved	238,371	11,919	$6.8	$0.3
NO_X Emissions Saved	65	3	$2.6	$0.1
PM_{10} Emissions Saved	2	0	$0.5	$0.0
$PM_{2.5}$ Emissions Saved	2	0		
SO_X Emissions Saved	2	0	$0.3	$0.0
VOC Emissions Saved	42	2	$0.1	$0.0

Table 4. Revised Benefit/Cost Analysis for Scope Change

③

INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$238.2
Life-Cycle Benefits (mil. $)	$404.3
Net Present Value (mil. $)	$166.1
Benefit / Cost Ratio:	1.7
Rate of Return on Investment:	9.3%
Payback Period:	8 years

ITEMIZED BENEFITS (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$220.4	$0.0	$220.4	$11.0
Veh. Op. Cost Savings	$121.0	$0.0	$121.0	$6.1
Accident Cost Savings	$52.5	$0.0	$52.5	$2.6
Emission Cost Savings	$10.3	$0.0	$10.3	$0.5
TOTAL BENEFITS	$404.3	$0.0	$404.3	$20.2
Person-Hours of Time Saved			39,263,878	1,963,194

Should benefit-cost results include:

1) Induced Travel? (y/n)	Y	Default = Y
2) Vehicle Operating Costs? (y/	Y	Default = Y
3) Accident Costs? (y/n)	Y	Default = Y
4) Vehicle Emissions? (y/n) Includes value for CO_2e	Y	Default = Y

EMISSIONS REDUCTION	Tons: Total Over 20 Years	Tons: Average Annual	Value (mil. $): Total Over 20 Years	Value (mil. $): Average Annual
CO Emissions Saved	800	40	$0.1	$0.0
CO_2 Emissions Saved	238,371	11,919	$6.8	$0.3
NO_X Emissions Saved	65	3	$2.6	$0.1
PM_{10} Emissions Saved	2	0	$0.5	$0.0
$PM_{2.5}$ Emissions Saved	2	0		
SO_X Emissions Saved	2	0	$0.3	$0.0
VOC Emissions Saved	42	2	$0.1	$0.0

ROAD REPAIR & ACCOUNTBILITY ACT OF 2017
LOCAL PARTNERSHIP COMPETITIVE PROGRAM
SCOPE CHANGE AMENDMENT REQUEST
METRO ORANGE LINE BUS RAPID TRANSIT IMPROVEMENTS

Exhibit D
Caltrans
Recommendation

ISSUE:

Should the California Transportation Commission approve a scope change amendment for the Senate Bill 1 Local Partnership Competitive Program LA METRO Bus Rapid Transit Improvement Project?

BACKGROUND:

The Metro Orange Line Bus Rapid Transit Improvement Project was adopted as part of the 2018 Local Partnership Competitive Program. While still in the design process, it was revealed to the Department in early 2019 that a scope change was needed due to a more cost-effective and efficient design, that will also allow connectivity with the East San Fernando Valley Transit Corridor and Sepulveda Pass projects.

SUMMARY:

The scope change altered a busway grade separation from one bridge spanning over five intersections to two smaller bridges spanning over four intersections, adding a quadrant gate to an intersection in the middle of the five intersections, that was to be a grade separation in the original design.

The California Department of Transportation has worked with California Transportation Commission staff and LA METRO to ensure there are no major changes in outputs, outcomes, or benefits. The benefits of the project as presented in the application were vigorously compared to the benefits of the new design.

After thorough review by Commission and Department staff, and consultations with engineering staff regarding the revisions, it was determined that although the design scope change of the project may be considered significant, the effect on the original outputs, outcomes, and benefits as promised in the original project application, are minor.

RECOMMENDATION:

As the circumstances surrounding the scope change were unforeseen at the time of application, and the benefits of the project are nearly the same after the design change, the California Department of Transportation recommends the California Transportation Commission approve the change in scope for the Metro Orange Line Bus Rapid Transit Improvement Project.