

# **Metro**

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



## **Agenda - Final**

**Wednesday, February 20, 2019**

**11:00 AM**

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

### **Ad Hoc Congestion, Highway and Roads Committee**

*John Fasana, Chair  
Hilda Solis, Vice Chair  
Kathryn Barger  
Jacquelyn Dupont-Walker  
Ara Najarian  
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 should be submitted in person at the meeting to the Board Secretary. Individuals requesting to speak on more than three (3) agenda items will be allowed to speak up to a maximum of three (3) minutes per meeting. For individuals requiring translation service, time allowed will be doubled.

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.

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 up to three (3) minutes per meeting and may speak no more than once during the Public Comment period. Speakers will be called according to the order in which the speaker request forms are received. Elected officials, not their staff or deputies, may be called out of order and prior to the Board's consideration of the relevant 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 on CD's and as MP3's and can be made available 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*

**323.466.3876 x3**

한국어

日本語

中文

русский

ភាសាខ្មែរ

ภาษาไทย

Tiếng Việt

ភាសាខ្មែរ

## HELPFUL PHONE NUMBERS

Copies of Agendas/Record of Board Action/Recordings of Meetings - (213) 922-4880 (Records Management Department)

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

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

TDD line (800) 252-9040

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

**CALL TO ORDER**

**ROLL CALL**

5. **SUBJECT: CALTRANS ORAL REPORT IN RESPONSE TO THE ROAD MOVABLE BARRIERS SYSTEM MOTION** [2018-0652](#)

**RECOMMENDATION**

RECEIVE oral report by Caltrans in response to the Road Movable Barriers System Motion from June 2018.

**Attachments:** [Attachment A - Road Barriers Motion Presentation](#)

**(CARRIED OVER FROM JANUARY COMMITTEE MEETING)**

6. **SUBJECT: I-10 EXPRESSLANES EXTENSION FROM I-605 TO SAN BERNARDINO COUNTY LINE** [2019-0052](#)

**RECOMMENDATION**

RECEIVE oral report on the I-10 ExpressLanes Extension from I-605 to the San Bernardino County Line.

**Attachments:** [Presentation](#)

7. **SUBJECT: SOUNDWALL PROGRAM ANALYSIS, DELIVERY OPTIONS AND FUNDING** [2018-0787](#)

**RECOMMENDATION**

RECEIVE AND FILE Countywide soundwall program outline and analysis of potential delivery options to construct the remaining prioritized retrofit soundwall projects, utilizing materials currently approved by the California Department of Transportation (Caltrans) for construction of soundwalls and funding opportunities in response to the October 25, 2018 Board Motion 9.1.

**Attachments:** [Attachment A - Countywide Soundwall Lists](#)  
[Attachment B - Soundwall Types Approved by Caltrans](#)  
[Attachment C - Soundwall Location Maps by Subregion](#)  
[Presentation](#)

8. **SUBJECT: FUNDING AGREEMENT FOR SR-57/SR-60 INTERCHANGE IMPROVEMENTS** [2018-0798](#)

**RECOMMENDATION**

AUTHORIZE the Chief Executive Officer (CEO) to execute Funding Agreement #9200000000M500201 for \$29,525,000 with San Gabriel Valley Council of Governments (SGVCOG) for support services for the SR-57/SR-60 Interchange Improvements.

**Attachments:** [Attachment A - File # 2018-0238 \(Item 47\) September 27, 2018 Board Report](#)

- SUBJECT: GENERAL PUBLIC COMMENT** [2019-0058](#)

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**



Metro

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

## Board Report

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**File #:** 2018-0652, **File Type:** Motion / Motion Response

**Agenda Number:** 5.

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**AD HOC CONGESTION, HIGHWAY, AND ROADS COMMITTEE  
FEBRUARY 20, 2019**

**SUBJECT: CALTRANS ORAL REPORT IN RESPONSE TO THE ROAD MOVABLE BARRIERS  
SYSTEM MOTION**

**ACTION: RECEIVE ORAL REPORT**

**RECOMMENDATION**

RECEIVE oral report by Caltrans in response to the Road Movable Barriers System Motion from June 2018.

**ATTACHMENT**

Attachment A - Road Barriers Motion



**Board Report**

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**File #:** 2018-0424, **File Type:** Motion / Motion Response

**Agenda Number:** 61.

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**REGULAR BOARD MEETING  
JUNE 28, 2018**

**Motion by:**

**GARCETTI, DUPONT-WALKER, HAHN, GARCIA, FASANA AND BOWEN**

**Road Movable Barriers System**

**SUBJECT: MOTION BY GARCETTI, DUPONT-WALKER, HAHN, GARCIA,  
FASANA AND BOWEN**

**ROAD MOVABLE BARRIERS SYSTEM**

WE THEREFORE MOVE THAT the Board direct the CEO to report back on the following:

- A. An analysis of the feasibility to implement Road Movable Barriers System on Freeway systems in Los Angeles County where asymmetric traffic flow exists. The analysis shall include the following:
  - 1. Identifying the potential freeway corridor segments such as the I-405 between I-105/LAX to I-710, and others, that have unique directional traffic flows.
  - 2. Coordination with Caltrans to identify the associated capital costs such as bridge replacement.
  - 3. Coordination with Caltrans to identify the associated operation costs to implement Road Movable Barriers System to create reversible lanes during AM and PM peak hours;
- B. Identify and recommend funding sources to support a pilot demonstration program; and
- C. Report back on all the above during the October 2018 MTA Board cycle.



# ROAD MOVABLE BARRIERS SYSTEM Segment Analysis

Metro Board Action Item No. 61, June 28, 2018  
CEO to report on analysis of the feasibility to  
implement movable barrier system in Los Angeles  
County where asymmetric traffic flow exists.

NOVEMBER 2018





## **BOARD ACTION**

### **CEO report on analysis of the feasibility to implement Movable Barrier System in Los Angeles County where asymmetric traffic flow exists.**

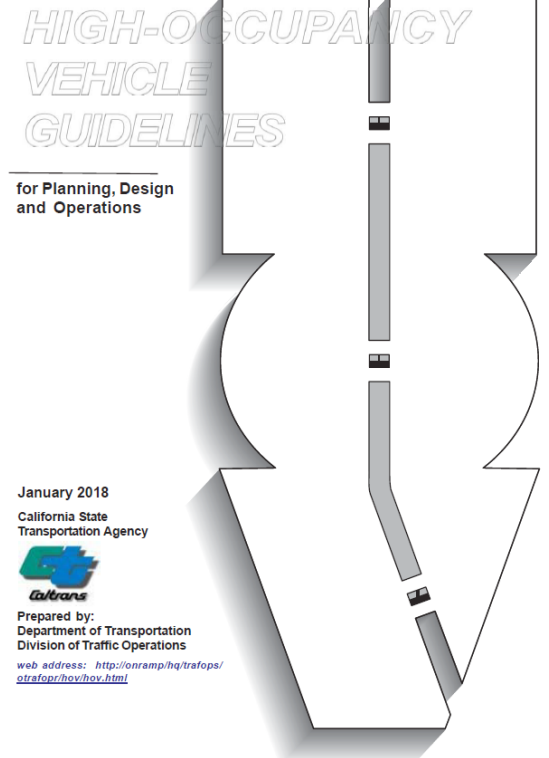
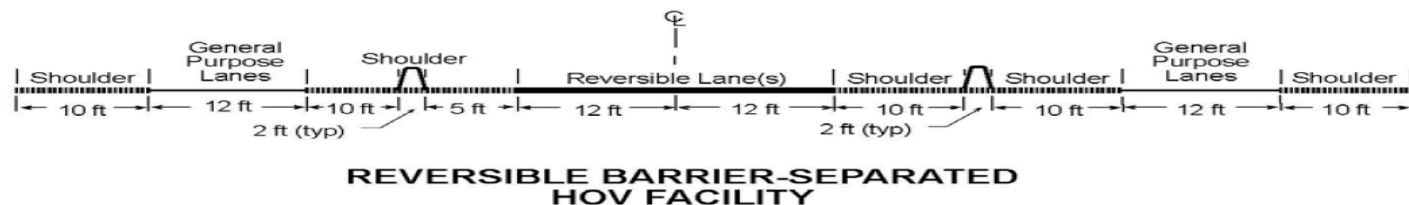
- ▶ **1. Identifying the potential freeway corridor segments such as the I-405 between I-105/LAX to I-710, and others, that have unique directional traffic flows.**
- ▶ 2. Coordination with Caltrans to identify the associated capital costs such as bridge replacement.
- ▶ 3. Coordination with Caltrans to identify the associated operation costs to implement Road Movable Barriers System to create reversible lanes during AM and PM peak hours.

# REVERSIBLE HOV LANES MINIMUM REQUIREMENTS

From High-Occupancy Vehicle Guidelines for Planning, Design & Operations.  
January 2018.

- ▶ Minimum length for these facilities should be 2 miles
- ▶ This type of operation is feasible only if the existing and forecasted directional traffic split is 65% or more in one direction during the design life of the project
- ▶ Free of right-of-way and physical constraints, such as bridge columns, in retrofitting a reversible flow

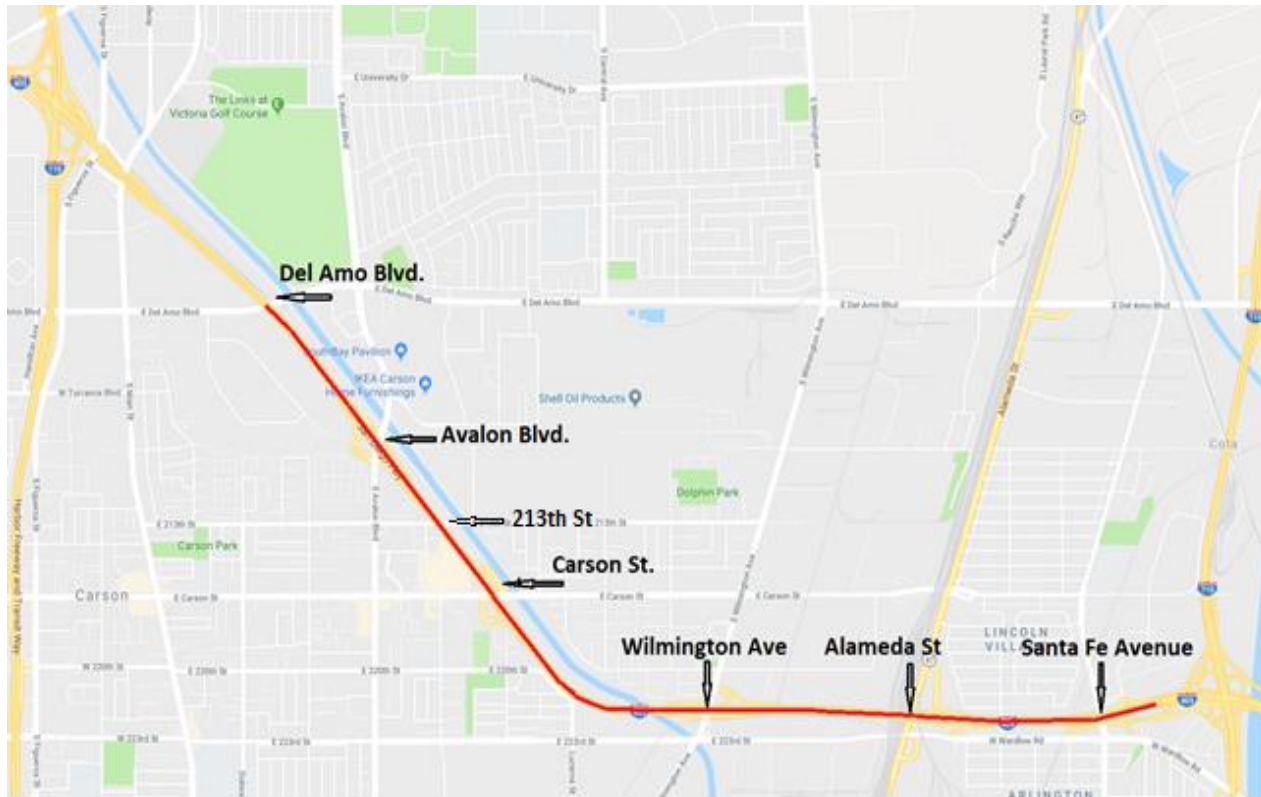
FIGURE 3.1  
TYPICAL CROSS SECTIONS  
BARRIER-SEPARATED HOV FACILITIES  
NOT TO SCALE



High-Occupancy Vehicle Guidelines  
For Planning, Design and Operations

## SEGMENT LOCATION

ON ROUTE 405 BETWEEN I-710 (PM 7.8)  
AND DEL AMO BLVD. (PM 11.8)

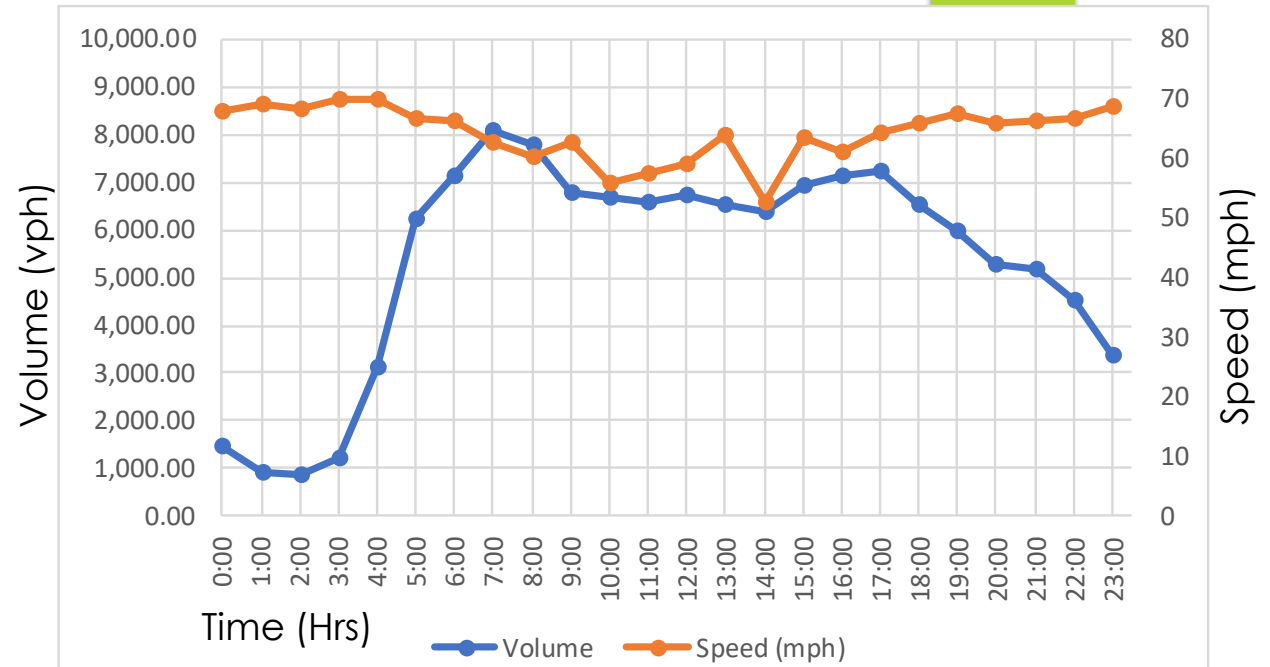


- I-405 is the most congested urban freeway in California, and the site of the top bottlenecks in Los Angeles County.
- There are no major physical constraints located in the median, making it physically feasible for movable barrier system, if 65/35 split tends to exist.
- This segment of I-405 is part of Metro Countywide Express Lanes Tier 1 Projects (5 to 10 Years).
- Caltrans PeMS data are used to measure flow, speed, and occupancy.

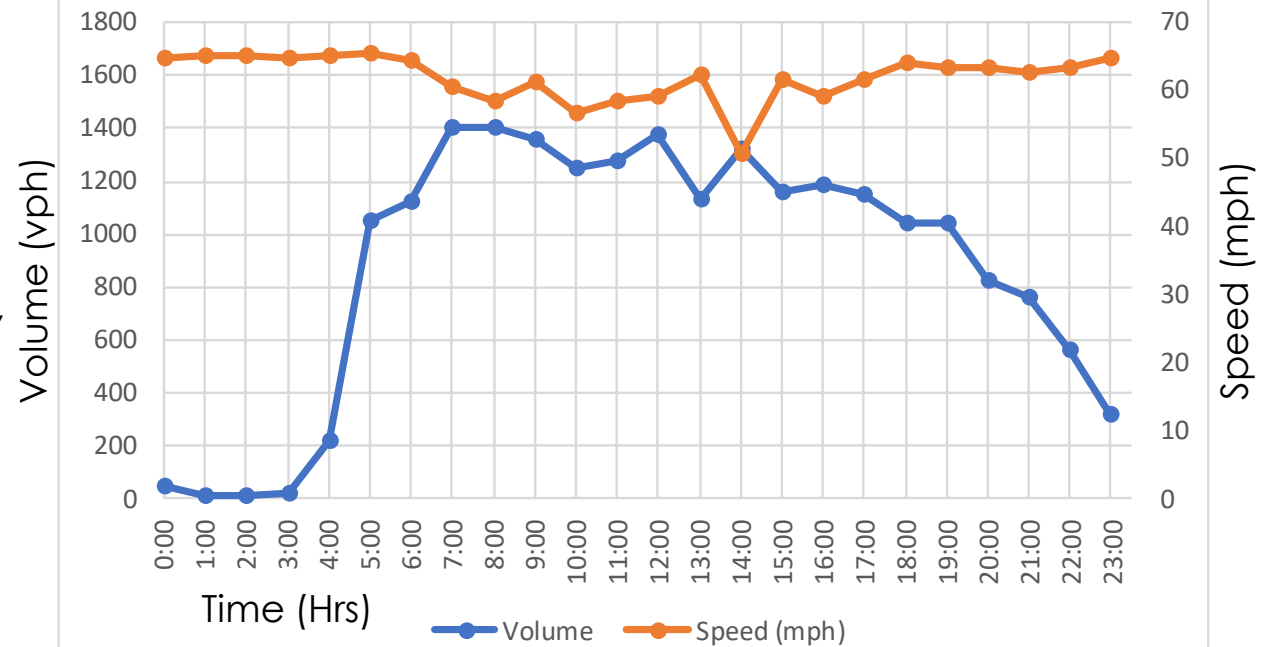
# DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 NB

AT AVALON BLVD.

**GENERAL PURPOSE (4 LANES)**



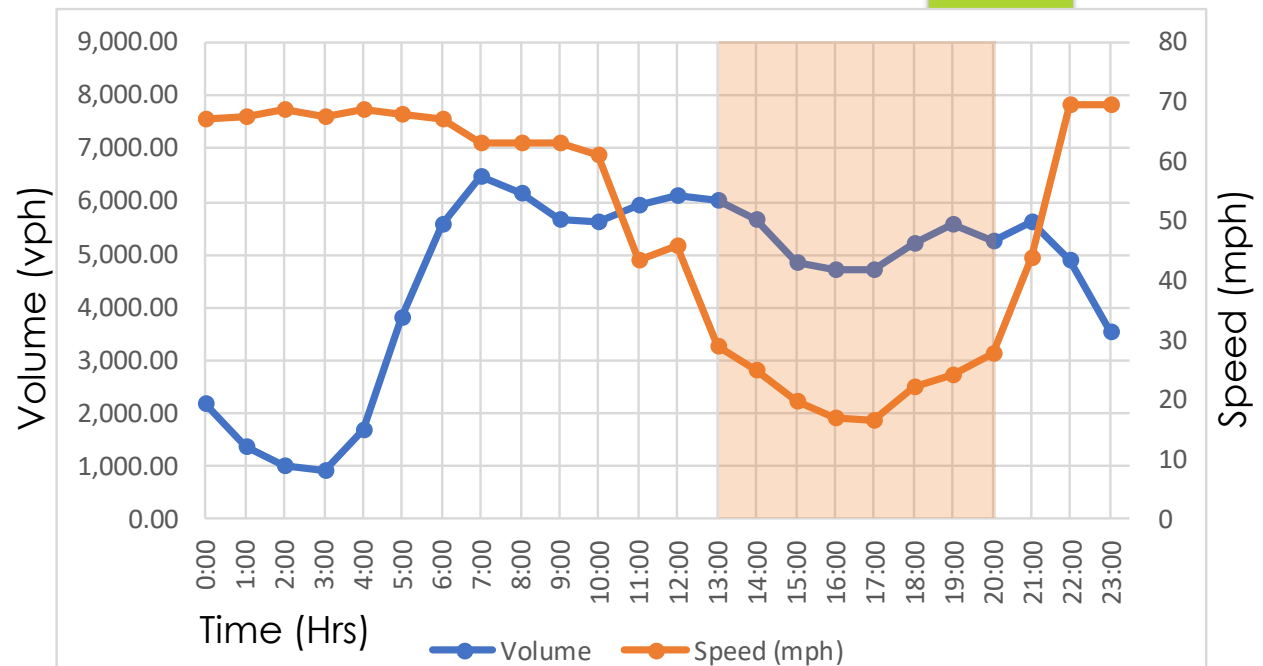
**HOV ONLY (1 LANE)**



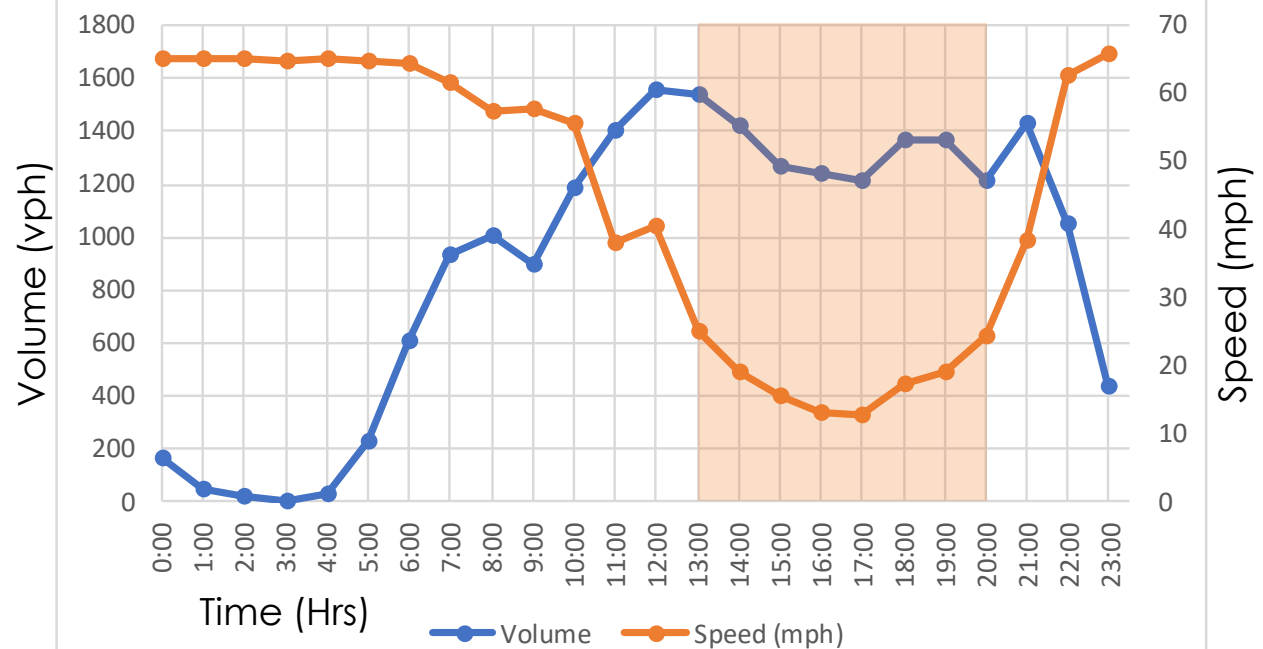
# DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 SB

AT AVALON BLVD.

**GENERAL  
PURPOSE  
(4 LANES)**



**HOV ONLY  
(1 LANE)**



# DIRECTIONAL VOLUME SPLIT AT AVALON BLVD.

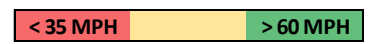
AVALON BLVD (PM 11.32) - DIRECTIONAL LANE CONFIGURATION: 4 GP & 1 HOV

Time	Directional Volume (vph)		Directional Volume (vph)		Directional Volume (vph)		Volume Split (%)						Average Speed (mph)			
	SB GP (4 lanes)	NB GP (4 lanes)	SB HOV (1 lane)	NB HOV (1 lane)	SB GP+HOV	NB GP+HOV	SB GP	NB GP	SB HOV	NB HOV	SB GP+HOV	NB GP+HOV	SB GP	NB GP	SB HOV	NB HOV
0:00	2192	1471	160	49	2352	1520	60%	40%	77%	23%	61%	39%	67	68	65	65
1:00	1364	903	50	11	1414	914	60%	40%	82%	18%	61%	39%	68	69	65	65
2:00	1023	851	16	7	1039	858	55%	45%	70%	30%	55%	45%	69	69	65	65
3:00	913	1223	1	19	914	1242	43%	57%	5%	95%	42%	58%	68	70	65	65
4:00	1664	3114	31	217	1695	3331	35%	65%	13%	88%	34%	66%	69	70	65	65
5:00	3796	6243	228	1047	4024	7290	38%	62%	18%	82%	36%	64%	68	67	65	66
6:00	5571	7128	610	1119	6181	8247	44%	56%	35%	65%	43%	57%	67	67	65	64
7:00	6454	8109	932	1402	7386	9511	44%	56%	40%	60%	44%	56%	63	63	62	61
8:00	6150	7815	1006	1401	7156	9216	44%	56%	42%	58%	44%	56%	63	61	58	59
9:00	5671	6817	898	1361	6569	8178	45%	55%	40%	60%	45%	55%	63	63	58	61
10:00	5633	6713	1187	1250	6820	7963	46%	54%	49%	51%	46%	54%	61	56	56	57
11:00	5920	6586	1407	1280	7327	7866	47%	53%	52%	48%	48%	52%	44	58	38	59
12:00	6095	6723	1560	1378	7655	8101	48%	52%	53%	47%	49%	51%	46	59	41	59
13:00	6006	6557	1542	1129	7548	7686	48%	52%	58%	42%	50%	50%	29	64	25	62
14:00	5673	6394	1424	1321	7097	7715	47%	53%	52%	48%	48%	52%	25	53	19	51
15:00	4833	6924	1266	1158	6099	8082	41%	59%	52%	48%	43%	57%	20	64	15	62
16:00	4710	7133	1237	1189	5947	8322	40%	60%	51%	49%	42%	58%	17	61	13	59
17:00	4716	7224	1214	1151	5930	8375	39%	61%	51%	49%	41%	59%	17	64	13	62
18:00	5221	6535	1364	1042	6585	7577	44%	56%	57%	43%	46%	54%	22	66	17	64
19:00	5549	6013	1365	1043	6914	7056	48%	52%	57%	43%	49%	51%	24	68	19	63
20:00	5273	5308	1216	822	6489	6130	50%	50%	60%	40%	51%	49%	28	66	25	63
21:00	5594	5194	1427	759	7021	5953	52%	48%	65%	35%	54%	46%	44	67	38	63
22:00	4875	4549	1051	559	5926	5108	52%	48%	65%	35%	54%	46%	70	67	63	63
23:00	3543	3399	434	316	3977	3715	51%	49%	58%	42%	52%	48%	70	69	66	65

LOWEST SPEED



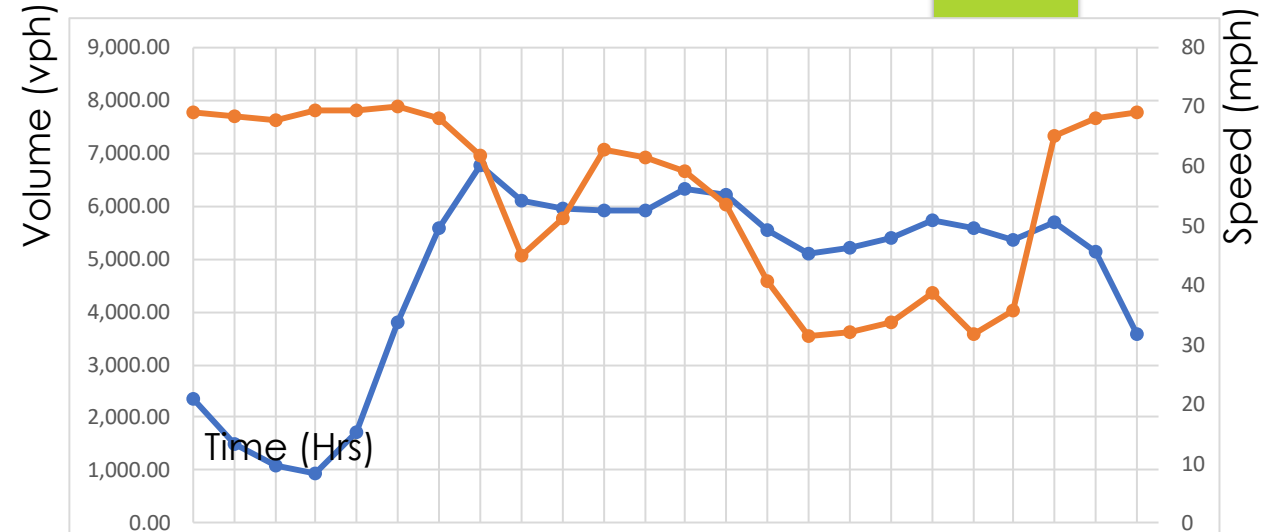
Cells in blue with >65% are when apparent volume split occurs.



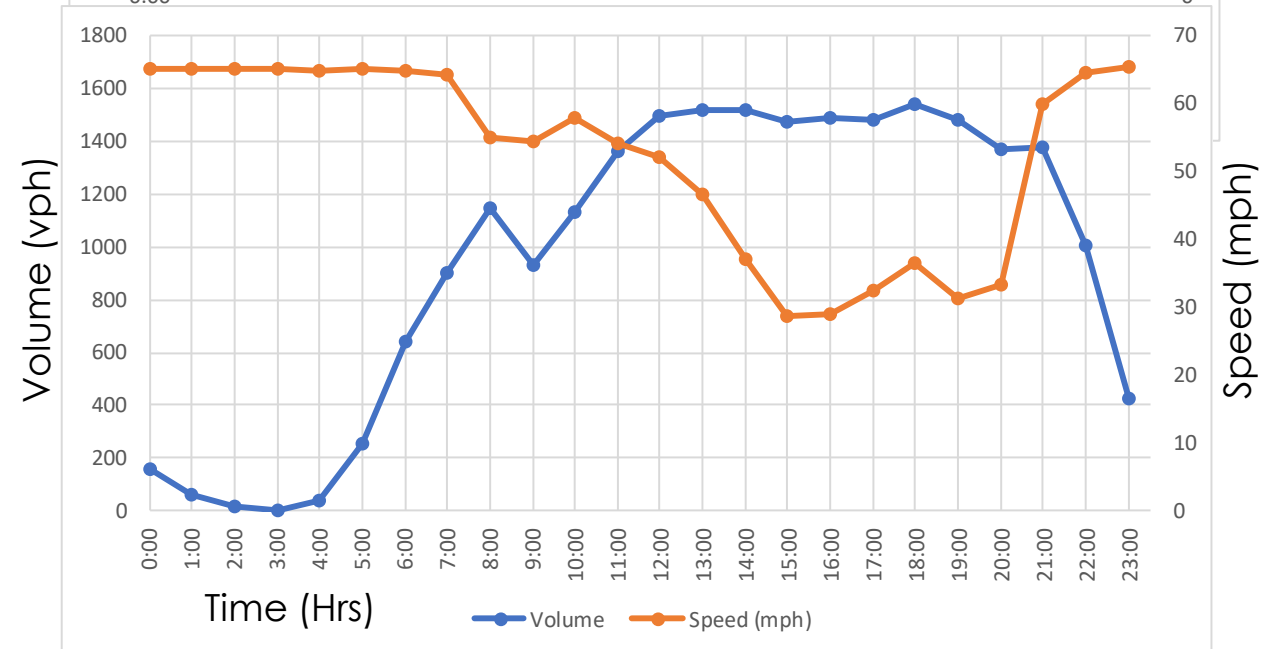
# DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 NB

AT SANTA FE AVE.

**GENERAL PURPOSE (4 LANES)**



**HOV ONLY (1 LANE)**

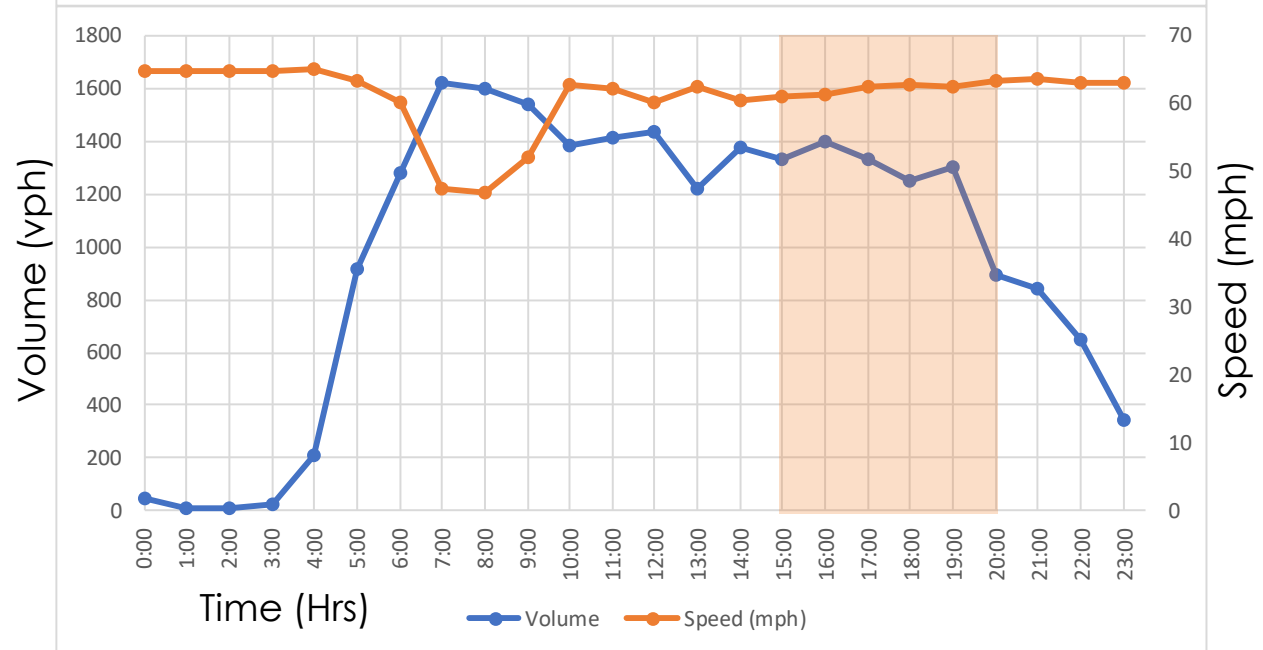
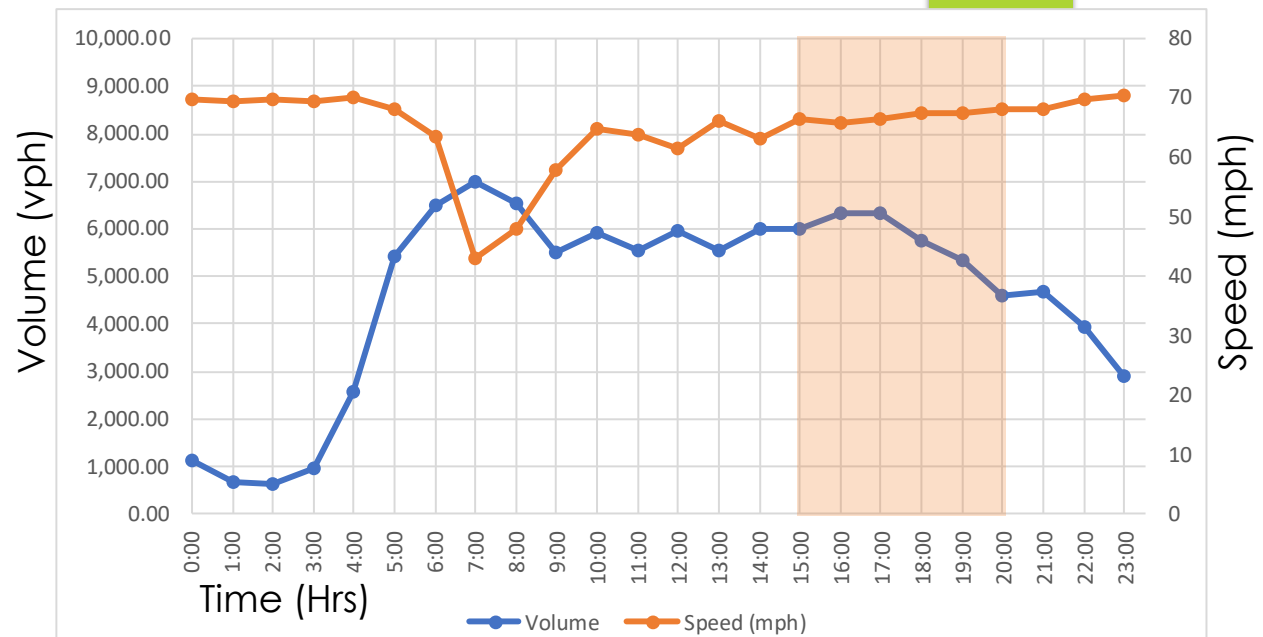


# DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 SB

AT SANTA FE AVE.

**GENERAL PURPOSE (4 LANES)**

**HOV ONLY (1 LANE)**



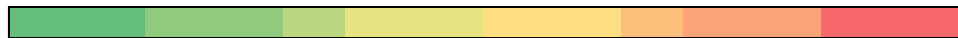


# DIRECTIONAL VOLUME SPLIT AT SANTA FE AVE.

SANTA FE AVE (PM 8.02) - DIRECTIONAL LANE CONFIGURATION: 4 GP & 1 HOV

Time	Directional Volume (vph)		Directional Volume (vph)		Directional Volume (vph)		Volume Split (%)						Average Speed (mph)			
	SB GP (4 lanes)	NB GP (4 lanes)	SB HOV (1 lane)	NB HOV (1 lane)	SB GP+HOV	NB GP+HOV	SB GP	NB GP	SB HOV	NB HOV	SB GP+HOV	NB GP+HOV	SB GP	NB GP	SB HOV	NB HOV
0:00	2344	1132	160	46	2504	1178	67%	33%	78%	22%	68%	32%	65	70	65	65
1:00	1478	652	59	11	1537	663	69%	31%	84%	16%	70%	30%	65	69	65	65
2:00	1094	630	13	6	1107	636	63%	37%	68%	32%	64%	36%	65	70	65	65
3:00	928	953	4	24	932	977	49%	51%	14%	86%	49%	51%	65	69	65	65
4:00	1729	2580	35	211	1764	2791	40%	60%	14%	86%	39%	61%	65	70	65	65
5:00	3798	5436	254	916	4052	6352	41%	59%	22%	78%	39%	61%	65	68	65	64
6:00	5593	6480	643	1283	6236	7763	46%	54%	33%	67%	45%	55%	65	64	65	60
7:00	6774	6992	905	1626	7679	8618	49%	51%	36%	64%	47%	53%	64	43	64	48
8:00	6120	6534	1145	1603	7265	8137	48%	52%	42%	58%	47%	53%	55	48	55	47
9:00	5969	5521	929	1540	6898	7061	52%	48%	38%	62%	49%	51%	54	58	54	52
10:00	5916	5935	1130	1384	7046	7319	50%	50%	45%	55%	49%	51%	58	65	58	63
11:00	5920	5545	1364	1415	7284	6960	52%	48%	49%	51%	51%	49%	54	64	54	62
12:00	6328	5967	1499	1435	7827	7402	51%	49%	51%	49%	51%	49%	52	61	52	60
13:00	6210	5549	1522	1222	7732	6771	53%	47%	55%	45%	53%	47%	47	66	47	63
14:00	5566	5979	1517	1377	7083	7356	48%	52%	52%	48%	49%	51%	37	63	37	61
15:00	5109	5999	1474	1333	6583	7332	46%	54%	53%	47%	47%	53%	29	67	29	61
16:00	5211	6319	1491	1402	6702	7721	45%	55%	52%	48%	46%	54%	29	66	29	61
17:00	5390	6345	1485	1332	6875	7677	46%	54%	53%	47%	47%	53%	33	67	33	62
18:00	5721	5748	1543	1251	7264	6999	50%	50%	55%	45%	51%	49%	37	68	37	63
19:00	5599	5324	1481	1300	7080	6624	51%	49%	53%	47%	52%	48%	31	68	31	63
20:00	5379	4580	1372	891	6751	5471	54%	46%	61%	39%	55%	45%	33	68	33	63
21:00	5694	4668	1377	844	7071	5512	55%	45%	62%	38%	56%	44%	60	68	60	64
22:00	5123	3937	1005	645	6128	4582	57%	43%	61%	39%	57%	43%	65	70	65	63
23:00	3567	2918	424	347	3991	3265	55%	45%	55%	45%	55%	45%	65	70	65	63

LOWEST SPEED



Lowest Volume

Highest Volume

Cells in red with >65% are when apparent volume split occurs.



< 35 MPH

> 60 MPH

# SUMMARY OF FINDINGS & CONCLUSION

- ▶ Noticeable asymmetric traffic flow patterns (approx. 65/35 split) were observed only during off-peak hours in segment of the I-405 between Del Amo Blvd. and I-710.
- ▶ **During those hours, speeds are moderately high and minimal congestion is present, thus implementing Movable Barrier System will not be a viable investment.**
- ▶ Upon evaluation of other routes, the following locations exhibit similar conditions and movable barrier **will not be a viable investment**:
  - ▶ **Route 60** from Crossroad Parkway to Barford POC (Approx. 3.9 miles): Approximately 50/50 volume percentage split throughout the day.
  - ▶ **I-10** from Rio Hondo to I-605 (Approx. 2.8 miles): 65/35 volume split only occurs when vehicles are traveling at free-flow speed.
  - ▶ **Route 14** from I-5 to Newhall Avenue (Approx. 4.2 miles): 65/35 volume split occurs when vehicles are traveling at free-flow speed during 7:00PM to 1:00AM.
- ▶ Detailed traffic modeling and analysis needed to further assess other scenarios & alternatives.



**Board Report**

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**File #:** 2019-0052, **File Type:** Oral Report / Presentation

**Agenda Number:** 6.

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**AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE  
FEBRUARY 20, 2019**

**SUBJECT: I-10 EXPRESSLANES EXTENSION FROM I-605 TO SAN BERNARDINO COUNTY  
LINE**

**ACTION: RECEIVE ORAL REPORT**

**RECOMMENDATION**

RECEIVE oral report on the I-10 ExpressLanes Extension from I-605 to the San Bernardino County Line.

# **METRO EXPRESSLANES**



I-10 ExpressLanes Extension

February 20, 2019

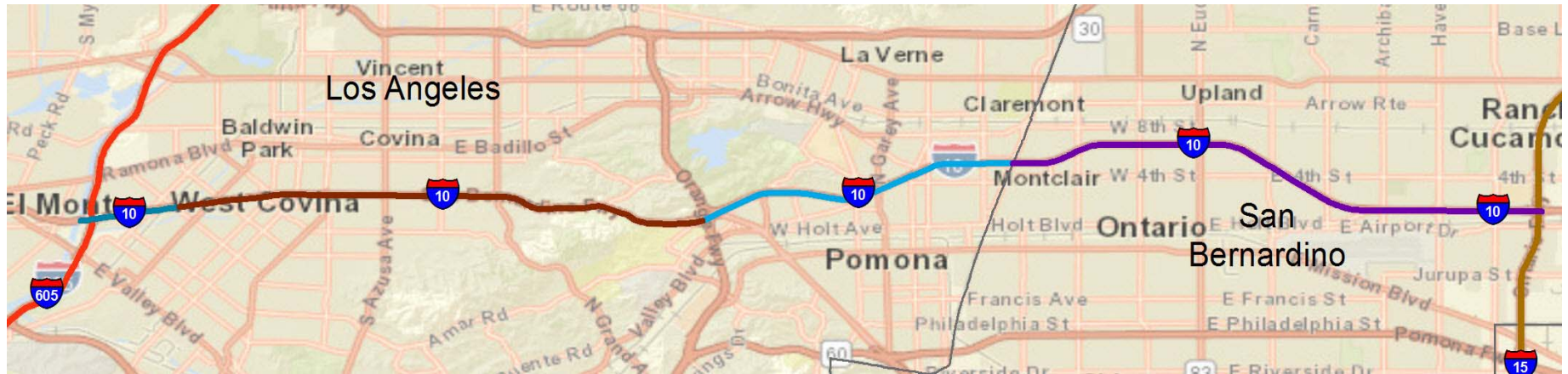


# Background



- An extension of the I-10 ExpressLanes from I-605 to the Los Angeles/San Bernardino County Line is included in Tier 1 (highest priority) of the ExpressLanes Strategic Plan
- The I-10 ExpressLanes project is included in the 28x'28 project list and is scheduled for completion in 2028
- Project is currently unfunded

# I-10 HOV Lanes



Caltrans is currently constructing High Occupancy Vehicle (HOV) lanes on I-10 between I-605 and SR-57 to create a continuous ExpressLane/HOV lane between Alameda Street and Haven Avenue (I-15)

## Completed segments:

- LA/San Bernardino County Line to Haven Avenue – Completed 2000
- SR-57 to LA/San Bernardino County line – Completed 2003
- I-605 to Puente Avenue - Completed 2013

## In construction segments:

- Puente Avenue to Citrus Street - Expected completion December 2019
- Citrus Street to SR-57 - Expected completion Summer 2021



# I-10 ExpressLanes – San Bernardino County



- San Bernardino County Transportation Authority is planning to implement ExpressLanes on I-10 between the Los Angeles/San Bernardino County line and Redlands
- Two ExpressLanes in each direction with one lane in a short segment approaching Los Angeles County
- Projected opening date Summer 2023 (Segment 1 – County line to I-15)



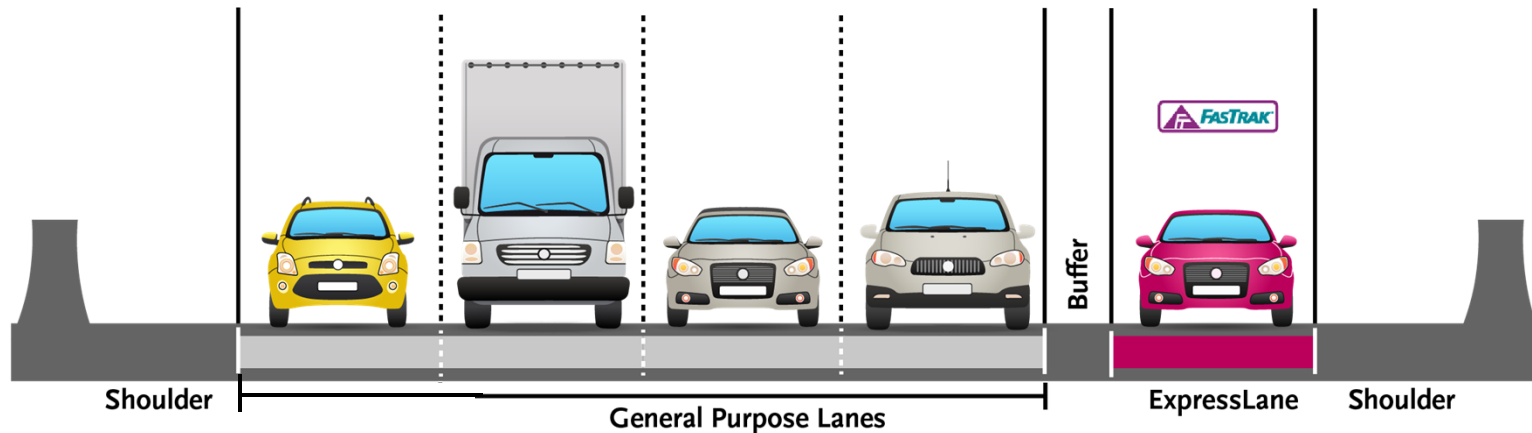
# Options for I-10 ExpressLanes



- Conversion of single HOV lane in each direction to ExpressLanes
- Conversion of single HOV lane into ExpressLanes and the addition of a second ExpressLane in each direction (non-standard lane widths)
- Conversion of single HOV lane into ExpressLanes and the addition of a second ExpressLane in each direction (standard lane widths)
- Conversion of HOV lanes to ExpressLanes and addition of one reversible ExpressLane - this will require further analysis with Caltrans



# Single ExpressLanes alternative



- Conversion of HOV lane under construction into ExpressLanes
- ExpressLanes would be 12' wide, inside shoulder of 6'
- 2 foot buffer between ExpressLanes and general purpose lanes
- Toll and communications infrastructure installed
- Estimated cost \$168-355 million



Note: cross section shown for illustrative purposes only.

# Single ExpressLanes alternative – Considerations



- Would not add any additional physical capacity
- Property acquisition possible for weave lanes
- Lowest cost
- Would require HOV3+ occupancy policy or higher to maintain acceptable operating conditions
- Would likely require approval from Federal Highway Administration to convert project from HOV to ExpressLanes

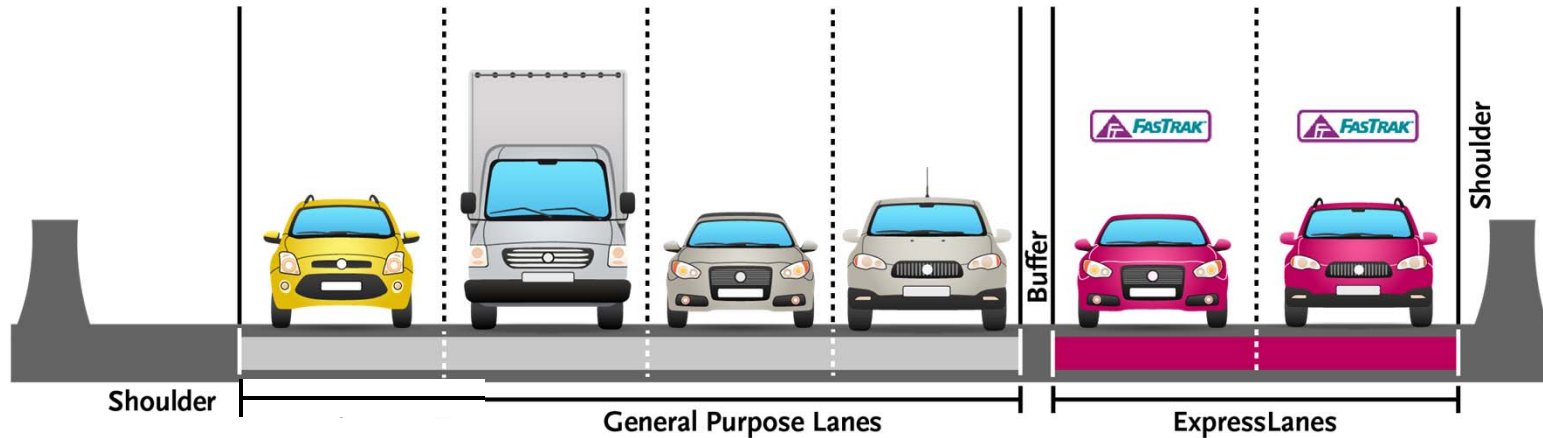
## **Schedule:**

- Network Project Study Report (PSR) – Caltrans and Metro are currently preparing a Network PSR for the Tier 1 ExpressLanes network, including the I-10.
  - Expected completion December 2019
- Project Approval/Environmental Document
  - Concept of Operations - Define operational policies, toll collection systems, and facility design
  - Traffic and Revenue Study - Estimate toll rates and potential toll revenue for this corridor
  - Request tolling authority from California Transportation Commission
  - Public outreach
    - Expected schedule – 18 months
- Design and Construction
  - Expected schedule – 24-36 months



**Metro**

# Dual ExpressLanes alternative (non-standard lane widths)



- Widening / restriping the freeway to create two 11' width ExpressLanes in each direction
- Left shoulder of 4', Buffer area of 2' between ExpressLanes and General purpose lanes
- General purpose lanes a combination of 12' and 11' wide
- Toll and communication infrastructure installed
- Estimated project cost: \$1 billion+



**Metro**

Note: cross section shown for illustrative purposes only.

# Dual ExpressLanes (Non-Standard) alternative – Considerations



- Would add an additional ExpressLane in each direction
- Property acquisition is anticipated
- Would likely require relocation / reconstruction of ramps and structures
- Higher cost
- Would require Caltrans approval of non-standard project features
- Would likely require approval from Federal Highway Administration to convert project from HOV to ExpressLanes

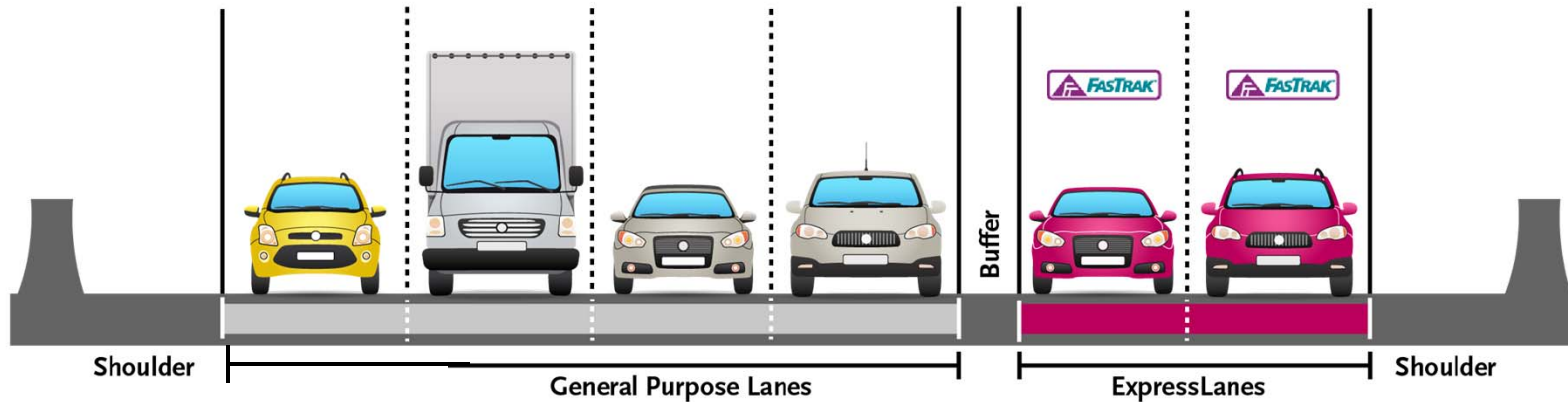
## **Schedule:**

- Network Project Study Report (PSR) – Caltrans and Metro are currently preparing a Network PSR for the Tier 1 ExpressLanes network, including the I-10.
  - Expected completion December 2019
- Project Approval/Environmental Document
  - Concept of Operations - Define operational policies, toll collection systems, and facility design
  - Traffic and Revenue Study - Estimate toll rates and potential toll revenue for this corridor
  - Request tolling authority from California Transportation Commission
  - Public outreach
    - Expected schedule – 18-24 months
- Design and Construction
  - Expected schedule – 36-48 months



**Metro**

# Dual ExpressLanes alternative (standard lane widths)



- Widening / restriping the freeway to create two 12' width ExpressLanes in each direction
- Left shoulder generally 10' wide
- Buffer area generally 4' between ExpressLanes and General Purpose lanes
- Typical 4 mainline through lanes, all 12' wide
- Toll and communication infrastructure installed
- Estimated cost: \$1.9 billion +



**Metro**

Note: cross section shown for illustrative purposes only.

# Dual ExpressLanes (Standard) alternative – Considerations



- Would add an additional ExpressLane in each direction
- Property acquisition is anticipated
- Highest cost
- Would require relocation / reconstruction of many ramps and structures
- Would likely require approval from Federal Highway Administration to convert project from HOV to ExpressLanes

## Schedule

- Network Project Study Report (PSR) – Caltrans and Metro are currently preparing a Network PSR for the Tier 1 ExpressLanes network, including the I-10.
  - Expected completion December 2019
- Project Approval/Environmental Document
  - Concept of Operations - Define operational policies, toll collection systems, and facility design
  - Traffic and Revenue Study - Estimate toll rates and potential toll revenue for this corridor
  - Request tolling authority from California Transportation Commission
  - Public outreach
    - Expected schedule – 18-24 months
- Design and Construction
  - Expected schedule – 48-60 months



**Metro**



## Board Report

File #: 2018-0787, File Type: Motion / Motion Response

Agenda Number: 7.

**REVISED**  
**AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE**  
**FEBRUARY 20, 2019**

**SUBJECT: SOUNDWALL PROGRAM ANALYSIS, DELIVERY OPTIONS AND FUNDING**

**ACTION: RECEIVE AND FILE**

**RECOMMENDATION**

RECEIVE AND FILE Countywide soundwall program outline and analysis of potential delivery options to construct the remaining prioritized retrofit soundwall projects, utilizing materials currently approved by the California Department of Transportation (Caltrans) for construction of soundwalls and funding opportunities in response to the October 25, 2018 Board Motion 9.1.

**ISSUE**

In October 2018, the Board directed staff to identify options to fund and construct the remaining soundwalls on the Post-1989 soundwall lists. This report presents a short term plan to fund the remaining Phase I soundwalls and a long term plan to fund the soundwalls in Phase II.

**BACKGROUND**

Metro assumed the responsibility for delivery of the retrofit soundwall projects in Los Angeles County after the passage of SB 45 in ~~1999~~ 1998. Prior to that, Caltrans was responsible for nominating soundwalls for funding through the California Transportation Commission (CTC) and constructing soundwalls along the freeway system.

The majority of the soundwall needs after passage of SB 45 consisted of retrofit soundwalls needed to alleviate noise levels in qualified communities adjacent to freeways with no active freeway improvement projects. New freeway improvement projects are required to evaluate noise impacts and consider the construction of soundwalls as part of project mitigation requirements.

In order for a location to qualify for retrofit soundwalls, it must meet all of the following criteria:

- Residential property built prior to the freeway or prior to a freeway capacity enhancing project.
- Exposed to an hourly noise level exceeding the 67-decibel (Leg) threshold established by Federal and State agencies.
- Achieve at least a 5-decibel noise reduction at an eligible residence after installation of

soundwall(s).

- Cost may not exceed \$92,000 per residential unit (“2017” dollars).

Between 2001 and 2003, Metro developed the list of priority retrofit soundwalls by classifying them in “Phases”.

Phase I: Soundwalls that were required to be constructed as part of the High Occupancy Vehicle Lanes (HOV) projects but were deferred; and

Phase II: All other retrofit/after-the-fact soundwall locations deemed eligible along the various freeways.

Within Phase I, three priority lists were established:

Priority 1: Soundwalls warranted for construction within the limits of newly-constructed HOV lane projects but built only on one side of the freeway.

Priority 2: Soundwalls warranted for construction within the limits of newly-constructed HOV lane projects but not built on either side of the freeway.

Priority 3: Soundwalls that met the requirements to be in Phase I but were identified after establishment of the initial Phase I list.

Within those priorities, soundwall “packages” were identified which consisted of bundled walls that could be built together for project delivery and cost effectiveness.

All Phase I Priority 1 Soundwalls are constructed.

Package 10 in Priority 2 is in final design and soundwall package 11 in Priority 2 group is in construction.

The list of the remaining walls under Priorities 2 and 3 are included as Attachment A.

The Phase II list is currently not funded.

From time to time, Metro staff may request and the Board may approve, to the extent that funds are available, funding to implement soundwalls.

To identify and validate soundwall needs on the highway system, standard Caltrans process must be followed. The first step in determining the need for soundwalls is to prepare a Noise Barrier Scope Summary Report (NBSSR). An NBSSR identifies the locations, lengths, and heights of walls, as well as the resulting impacts to the roadway, structures, right of way, and the environment within the project limits. Reasonableness and feasibility tests are applied to see if a project can be recommended to move to design and construction, if funded.



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Priority and order of implementation is determined by a soundwall Priority Index Number (PIN), which is calculated with consideration of the existing noise level, the anticipated noise reduction after implementation, the number of residential units benefiting from the project and the project's estimated cost. The PIN helps determine the magnitude of benefit received by residential units upon construction of a soundwall. Currently, all walls in Phase I have a PIN. Not all walls in Phase II have PINs.

As for construction, Caltrans requires that all walls placed along the edge of freeway shoulders be constructed on a safety barrier. Walls constructed on bridges are to be installed on top of the bridge railing. Walls to be constructed in a safe distance from the freeway have more flexible design criteria.

To-date, Caltrans has approved and utilized only a limited number of materials for soundwalls, the list of which is provided in Attachment B. The most frequently used material is masonry block. Acrylic clear panels are an alternative material to masonry block and have been approved for mounting on bridge rails. For any other material approved by Caltrans, walls must be located in the Clear Recovery Zone which is 30 feet from the traveled way or located a minimum 18 inches behind a barrier that meets the Manual for Assessing Safety Hardware (MASH) criteria. Thus, very few LA County locations may be able to use one of the approved alternative systems.

## **DISCUSSION**

Soundwall packages 12 through 14 in Phase I, Priority 2 and all walls in Priority 3 require NBSSR updates to commence design. Funds are identified and available in the Long Range Transportation plan as early as 2024 for implementation of soundwalls. Upon Board approval, funds may be obligated for early development work.

The Phase II list contains 100 freeway segments that had qualified noise readings for soundwalls. No funds have been identified for development and implementation of the Phase II list. A cursory check of the land use along the freeway segments under Phase II suggests approximately 68.8 miles of soundwall would be needed (Attachment A).

It is the Board's intention to identify possible options to fund and implement as many eligible soundwalls as possible.

Staff will continue construction of soundwalls on the current order of priority starting with completion of Phase I priorities as funds become available.

The current estimate of cost of implementation of the remainder of Phase I; Priority 2 (Packages 12-14) and Priority 3 soundwalls is between \$216 to \$433 Million.

Upon completion of Phase I or depletion of available funds, staff will report back to the Board and identify alternative approaches to implementation of Phase II soundwalls as well as any potentially remaining Phase I walls.

**Pros:** Implementation of soundwall program in accordance with the current Board policies.

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Cons: Implementation of Phase II walls would not occur any time soon as the cost of implementation of Phase I priorities is not budgeted and is rising due to market conditions.

## **FINANCIAL IMPACT**

Using the current average cost range of \$10 to \$20 million per mile for soundwall design, right-of-way, and construction (including potential roadway and structure work), the current Rough Order of Magnitude (ROM) cost estimate to complete the remaining Phase I (Priority 2, Package 12-14 and Priority 3 lists) is between \$216.6 million to \$433.2 million, and the non-prioritized Phase II list at \$688 million to \$1.3 billion. The Measure R Expenditure Plan designated a total of \$250 million for countywide soundwalls. In addition, the LRTP (as amended) programmed \$57.6 million of Proposition C 25% transit related highway funds and \$282.1 million in State Regional Improvement Program (RIP) funds for eligible Phase I soundwalls through FY 2040, for a total of \$589.7 million for the completion of Phase I projects.

To-date, the Board has approved Life-of-Project (LOP) budgets totaling \$238.9 million in Measure R funds towards the completion of Phase I, Priority 1 (Packages 4-8) and Priority 2 (Packages 10 and 11), which leaves a balance of \$350.8 million in LRTP funds between FY 2025 and FY 2040, plus any project savings from the completion of Priority 1 and 2 projects, available to deliver the remaining Phase I Priority 2 (Packages 12-14) and Priority 3 projects.

There are no funds assigned to Phase II at this time. Availability of funds for Phase II walls is highly unlikely due to other Metro funding priorities. A long-term plan for the implementation of Phase II could include the following strategies:

- Authorize a reasonable percentage of the Subregional Measure M allocations to be spent on construction of soundwalls at the election of the Subregion and allow the Subregions to construct soundwalls based on established priorities within each subregion.
- Seek Caltrans funding contribution from the ~~State Highway Operations and Protection Program (SHOPP)~~ SB1 LPP - Local Partnership Program for the Phase II walls.

Staff will continue to identify other funding sources to support the implementation of the Countywide Soundwall Program.

Additionally, as new highway capacity enhancement projects are developed, soundwall segments on the Phase I or Phase II list that are within the limits of those projects will be built as part of the project if deemed eligible.

## **Impact to Budget**

This report is for information only, does not recommend funding beyond the current levels, and therefore does not impose any impact to Metro's budget. Depending on the Board's direction for the next steps, budget impacts will be identified and explained in the follow up reports to the Board.

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## **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Recommendation supports strategic plan goal #5: Provide responsive, accountable and trustworthy governance. This report is intended to identify best practices, access the full life-cycle costs of infrastructure investments and identify trade-offs.

### **ALTERNATIVES CONSIDERED**

Alternative 1: Revise Board's policies and priorities on implementation of soundwalls.

De-prioritize implementation of Phase I soundwalls; identify alternative methodologies to reprioritize the program blending the remainder of Phase I priorities with the Phase II walls and conducting noise studies across the board for all projects.

Pros: Potential opportunities for advancing some of the Phase II walls that otherwise may not be built any time soon.

Cons: Potential delay in implementation of eligible soundwalls that were required to be constructed as part of the HOV lane projects but were deferred due to other priorities.

This alternative is not recommended. Conducting noise studies, preparing documents, and assigning priority index numbers to all candidate walls requires substantial investment without a guarantee of being able to pay for the environmental, design, and construction of those walls.

### **NEXT STEPS**

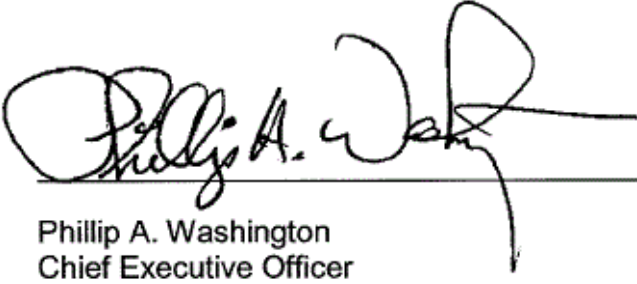
Staff will return to the Board in June 2019 to seek budget authority to continue implementation of the remaining walls in Phase I. Upon completion of Phase I, staff will return to the Board to identify potential available funding and recommend alternatives to establish order of priority for Phase II soundwalls.

### **ATTACHMENTS**

Attachment A - Countywide Soundwall Lists  
Attachment B - Soundwall Types Approved by Caltrans  
Attachment C - Soundwall Location Maps by Subregion

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Phillip A. Washington  
Chief Executive Officer

## Remaining Post 1989 Retrofit Soundwall Projects

### Phase I, Priority 2, Packages 12, 13 and 14 (Unfunded)

Rte.	City/Unicorp.	Project Description	SW Length	Notes
<b>PACKAGE 12</b>				
210	Glendora	EB Off-ramp Grand Ave / Big Dalton Wash: EB	0.45	NBSSR analysis completed on 8/8/2007
210	Glendora	W of Bonnie Cove Ave / E of Bonnie Cove Ave: EB	0.19	NBSSR analysis completed on 8/8/2007
210	Glendora	W of Lyman Ave / E of Sunflower Ave: EB	0.49	NBSSR analysis completed on 8/8/2007
<b>PACKAGE 13</b>				
405	Long Beach/Carson	Long Beach Blvd / 213 St: NB & SB	2.65	NBSSR analysis completed on 3/8/2004
<b>PACKAGE 14</b>				
134	Eagle Rock	W of Mt. Helena Ave / W of Figueroa St: EB	0.28	NBSSR analysis completed on 6/20/2003
			<b>4.06</b>	Total Estimated Length of Potential SW Projects (In Miles)
			<b>\$ 40.6 - 81.2</b>	Total Estimated Cost of Potential SW Projects (In Millions, 2018)

### Phase I, Priority 3 (Unfunded)

Contains soundwalls that met requirements to be in Phase I but were identified after the Board action of 4-27-2000  
(Not in Rank Order)

Rte.	City/Unicorp.	Project Description	Estimated SW Length	Notes
57	Diamond Bar	North of Brea Cyn Road / North of Sunset Crossing: NB & SB	3.90	Commercial frontage
91	Bellflower	Los Angeles River / Lakewood Blvd: NB & SB	1.12	Existing SWs within project limits
118	Los Angeles	East of Tampa Ave to West of Havenhurst Ave: WB & EB	6.66	
118	Los Angeles	East of Woodley Ave to San Fernando Road: WB & EB	5.12	
134	Toluca Lake	Rte. 101/134 / Ensign Ave: EB	0.20	
134	Burbank	West Riverside Dr. UC: WB	0.10	
134	Burbank	0.2 Mi East of Buena Vista St to Forest Lawn Drive: WB	0.15	Parkland and vacant land frontage
405	Long Beach	0.1 Mi North of Lakewood Blvd/0.4 North of Lakewood Blvd: SB	0.30	
405	Los Angeles	Denker Ave./Normandie: NB	0.00	
			<b>17.6</b>	Total Estimated Length of Potential SW Projects (In Miles)
			<b>\$ 176 - 352</b>	Total Estimated Cost of Potential SW Projects (In Millions, 2018)

Key	
SW	Soundwall
NBSSR	Noise Barrier Scope Summary Report
Estimated SW Length	Derived from freeway frontage analysis

## MTA Post 1989 Retrofit Soundwall Projects

### Phase II (Unfunded)

Other qualified soundwalls including soundwalls identified prior to the adoption of Metro Soundwall Policies (Not in Rank Order)

Rte.	City/Unicorp.	Project Description	Estimated SW Length	Notes	Potential to be Built with a Highway Project
2	Los Angeles	Route 5 / Route 134: WB & EB	4.07	Commercial and parkland frontage	No
5	Los Angeles	0.1 South of Olympic / First St: NB & SB	4.50		No
5	Los Angeles	Fletcher Dr / South of Glendale Blvd: NB & SB	0.64	Commercial and parkland frontage	
5	Los Angeles	Fletcher Dr. to Route 2: SB	0.30		
5	Los Angeles	South of Broadway to South of Humboldt St: NB	0.40		
10	Santa Monica	Lincoln Bl / East of 27th St: WB & EB	1.05	Existing SWs within project limits	No
10	Santa Monica/LA	East of Centinela Ave / Motor Ave: WB & EB	3.22	Existing SWs within project limits	
10	Los Angeles	Motor Ave / Palms / National Blvd : WB & EB	0.20	Existing SWs within project limits; commercial frontage	
10	Los Angeles	West of Palms / Fairfax Ave: WB & EB	1.47	Existing SWs within project limits	
10	Los Angeles	Redondo Blvd / East of Albany St: WB & EB	3.72	Existing SWs within project limits	
10	Alhambra	West of Route 5 / Garfield Ave: WB & EB	3.36	Existing SWs within project limits	I-710 North Project
10	Alhambra	East of Atlantic Bl. To West of 9th St: WB	0.02		
10	Monterey Park	New Ave / Walnut Grove Ave: WB & EB	0.96	Existing SWs within project limits	
10	Los Angeles	0.1 mile West of Indian Hills Bl to 0.1 mile East of Indian Hills Bl WB	0.02	Commercial frontage	No
14	Los Angeles	North of Red Rover Mine Rd: NB (Vasquez High School)	0.23		No
14	Lancaster	Ave P-8 / Ave I: NB	2.43	Commercial zones; schools	
14	Lancaster	1,800 Feet South of Ave. E to Ave. E: NB	0.34		
47	Los Angeles	East of Gaffey St to West of Harbor Bl: NB & EB 2,720 feet of wall	0.52		No
57	Pomona	0.2 South of Temple Ave / North of Campus: NB & SB	0.70	Existing SWs within project limits	No
60	Los Angeles	Rowan / Route 710: WB	0.55	Commercial frontage	No
60	Los Angeles	East of S. Dangler Ave. to Mednik Ave. EB	0.10		
60	Los Angeles	San Gabriel Blvd / Route 605: WB & EB	1.24	Existing SWs within project limits; commercial frontage	
71	Pomona	0.1 Mi. South of North Ranch Rd to Rte. 71/60 IC: NB	0.26	Existing SWs within project limits	SR-71 project
90	Los Angeles	Ballona Creek / Inglewood Blvd: WB & EB	0.45	Parkland frontage	No
90	Los Angeles	East of Mindanao Short Ave to West of Culver Blvd: EB	0.40		
90	Los Angeles	East of Centinela Ave. to West of Inglewood Blvd: WB	0.40		
90	Culver City	Inglewood Blvd / Route 405: WB & EB	0.50	Existing SWs within project limits	
91	Cerritos	East of Studebaker Rd to Coral Reef Cir. WB connector to NB LA-605	0.12		SR-91 WB Project
101	Los Angeles	1st Street to Kearney St: NB	0.06	Commercial frontage	No
101	Los Angeles	Beaudry Ave to Alvarado St: NB	0.61		
101	Los Angeles	South of Alvarado St / North of Vermont Ave: NB & SB	1.33	Existing SWs within project limits	
101	Los Angeles	Along Hollywood Blvd. On-Ramp	0.03		
101	Los Angeles	Cahuenga Blvd / 0.1 Mi North of Cahuenga Blvd: SB	0.02		
101	Los Angeles	North of Lankershim Blvd to North of Vineland Ave: SB	0.72		
101	Los Angeles	Vineland Ave / 0.2 Mi North of Moorpark St: NB & SB	0.38	Commercial frontage	
101	Los Angeles	Radford Ave / Laurel Canyon Blvd: NB	0.20		
101	Los Angeles	Fulton Ave. to 0.2 Mi. West of Fulton Ave. WB (Memo-12/14/06: PIN is not applicable to school noise abatement, private school))	0.20		
101	Los Angeles	North of Hayvenhurst Ave / Burbank Blvd: NB & SB	3.96		
101	Los Angeles	West of Reseda Blvd / Yolanda Ave: SB	0.24		
101	Woodland Hills	Winnetka Ave / Desoto Ave: NB	0.77		
101	Los Angeles	Canoga Ave / Owensmouth Ave: NB	0.30		
101	Los Angeles	West of Topanga Canyon to East of Farralone Ave: WB	0.14		
101	Los Angeles	Shoup Ave / E Woodlake Ave: NB	0.76		
101	Woodland Hills	Dunman Ave / 0.4 Mi South of Mulholland Dr: SB	0.06	Commercial frontage	

105	Hawthorne	East of Rte. 405 to West of Prairie Ave: WB	0.95		Express Lanes Project
105	Hawthorne	East of Inglewood Ave. to West of Hawthorne Blvd: EB	0.38		
105	Los Angeles	West of Inglewood Ave to Hawthorne Bl: WB	0.45		
105	Hawthorne	East of Prairie Ave. to West of Prairie Ave: EB	0.12	Commercial frontage	
105	Hawthorne	East of Prairie Ave. to West of Doty Ave: WB	0.05	Existing SWs within project limits	
105	Hawthorne	West to East of Dominguez Creek: EB	0.00	Parkland frontage	
105	Hawthorne	East of Crenshaw Blvd. to West of Crenshaw Blvd: WB	0.04	Existing SWs within project limits	
105	Hawthorne/LA	West of Normandie Ave. to West of Hoover St: EB	0.90		
105	Hawthorne	West of Budlong Ave. to West of Vermont Ave: WB	0.20		
105	Los Angeles	East of Rte. 110 to West of Main St: EB	0.35		
105	Los Angeles	East of Rte. 110 to East of Avalon Blvd: WB	0.70		
105	Willowbrook	West of Central Ave. to West of Wilmington Ave: WB	1.00		
105	Willowbrook	West of Central Ave. to East of Compton Ave: EB	0.28		
105	Willowbrook/Lynw	West of Wilmington Ave. to East of State St: WB	1.05		
105	Lynwood	West of State St. to West of Long Beach Blvd: EB	0.60		
105	Lynwood	West of Long Beach Blvd to West of Spruce St: WB	0.21		
105	Lynwood	West of Bullis St to East of Wright Rd: EB	1.27		
110	Los Angeles	North of Oliver St / 0.1 Mi North of 223rd St: NB & SB	0.89	Existing SWs within project limits	
110	San Pedro	N El Beron Ave/ N Mac Arthur Ave: NB	0.30		
110	Los Angeles	Flower St / 23rd St: NB	0.00	Commercial frontage	
110	Los Angeles	23rd St to Washington Bl: SB	0.00	Commercial frontage	No
110	Los Angeles	South of College / Arroyo Seco Ave: SB	1.18	Parkland frontage	
118	Chatsworth	East of Topanga Canyon Bl to East of Topanga Blvd: WB	0.02		No
118	Chatsworth	Topanga Canyon Blvd / 118 Freeway Off-Ramp: EB	0.10		No
134	Burbank	East of S California to Bob Hope Drive Off-Ramp	0.11		
134	Glendale	W San Rafael Ave / E San Rafael Ave: EB	0.02	Commercial and vacant land frontage	No
134	Pasadena	From 574 ft West of Orange Grove Bl OC to 394' East: WB	0.15		No
210	Los Angeles	East of Foothill Blvd / West of MacClay St: WB & EB	4.52		
210	Los Angeles	Paxton St / South of Sunland Ave: WB & EB	0.87	Existing SWs within project limits	
210	Glendale	0.4 Mi. West of Honolulu Ave / Boston Ave: WB & EB	0.06	Existing SWs within project limits	
210	La Canada/Flintridge	Boston / Berkshire Place: WB & EB	5.04	Existing SWs within project limits	
210	Pasadena	N. Arroyo Blvd / Orange Grove Blvd: WB & EB	0.00	Existing SWs within project limits	
210	Arcadia	Santa Anita Ave Off-Ramp: WB	0.10		No
210	Glendora	0.3 Mi. West of Gladstone St to 0.5 Mi. West of Via Verde in San Dimas: WB & EB	1.56	Commercial and vacant land frontage	
405	Long Beach	Clark Ave Bridge Structure: SB	0.04		No
405	Long Beach	LA-405 SB to LA-710 SB Connector: SB	0.38	Existing SWs within project limits	I-405 Aux Lanes
405	Los Angeles	W. Rosecrans Ave to W. El Segundo Bl: SB	1.05		
605	Long Beach	North of Coyote Creek OC to South of Spring St. NB On-Ramp: NB	0.17		No
605	Lakewood	El Dorado Park between Spring St & Carson St: SB	0.00	Parkland frontage	
605	Norwalk	South of I-105 to North of Rosecrans Ave: SB	0.23		I-605 Corridor Improvements Project
605	Pico Riviera	South of Telegraph Rd. to South of Slauson Ave: SB	0.12	Parkland frontage	
605	Whittier	UPRR Bridge to North of Beverly Bl: NB	0.41		
605	Irwindale	Route 210 / So Huntington Dr: NB & SB	0.39		No
710	Bell/South Gate	Imperial Hwy to South of Clara St: SB	0.60		I-710 South Project
			68.8	Total Estimated Length of Potential SW Projects (In Miles)	
			\$ 688-1,376	Total Estimated Cost of Potential SW Projects (In Millions, 2018)	

Key	
SW	Soundwall
NBSSR	Noise Barrier Scope Summary Report
Estimated SW Length	Derived from freeway frontage analysis

### Soundwall Materials Approved by Caltrans

Material Name	Material Description	Allowable Use	Current Status	Cost
Masonry Block	Masonry Blocks	Extensive use on the freeway system, on barriers or adjacent to the freeway shoulder	Approved	Construction Capital cost averages \$1,000/linear foot for a 14 foot high soundwall
Acrylite - Soundstop Masonry Wall System	Clear Acrylic Panels	Outside clear recovery zone of a highway or behind MASH approved barrier. Can not be mounted on Bridge Rails or Safety Barriers	Pending Caltrans Approval	The material is more expensive than masonry block according to the manufacturer
Acrylite - Soundstop Ready-Fit Noise Barrier Panel	Clear Acrylic Panels	Outside clear recovery zone of a highway or behind MASH approved barrier	Pending Caltrans Approval	The material is more expensive than masonry block according to the manufacturer
Acrylite - SoundstopTL4 System	Clear Acrylic Panels	On top of bridge rails crash, barriers or retaining walls	Approved	One example: \$109/sq ft or about \$1500/linear foot for a 14 foot soundwall. Used on I-405 Atherton St. undercrossing and 37th St. Harbor Transit Way Station



Masonry Block

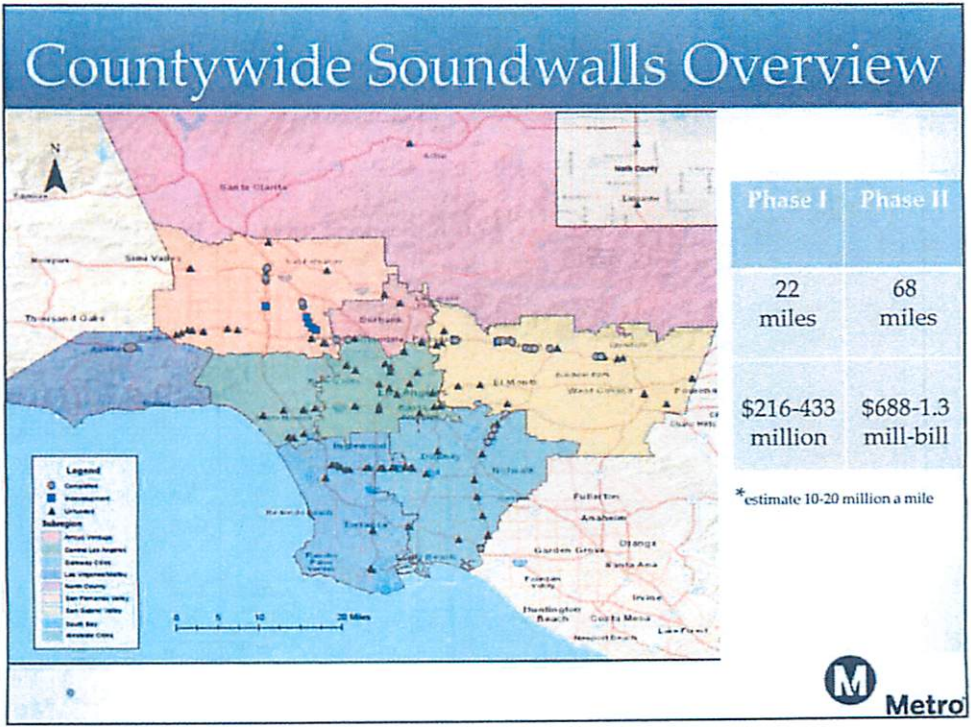
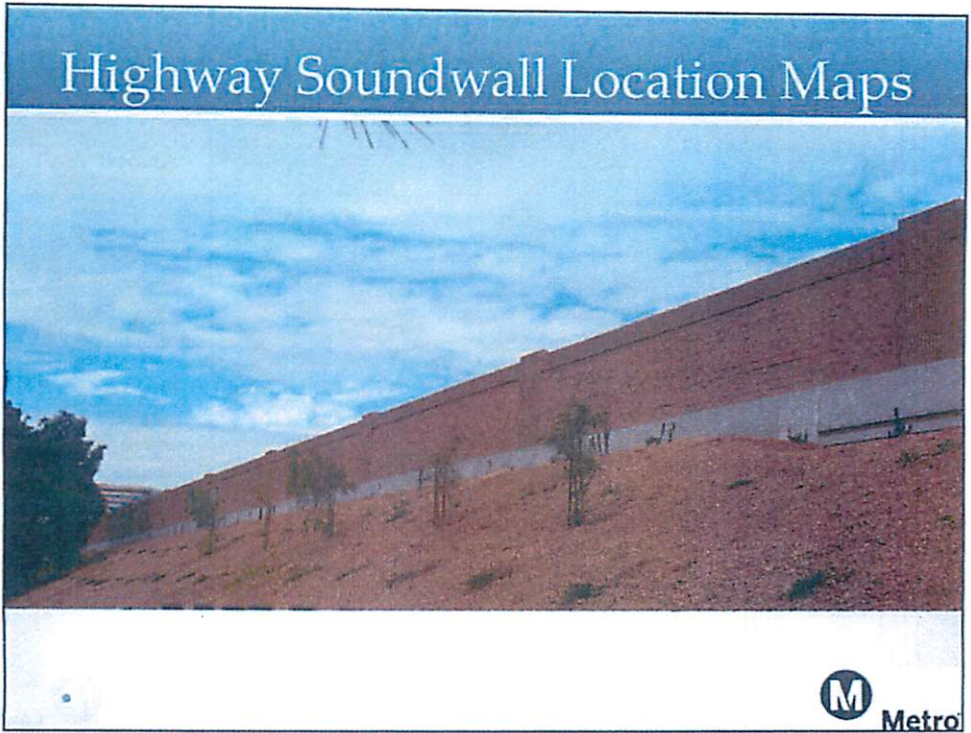


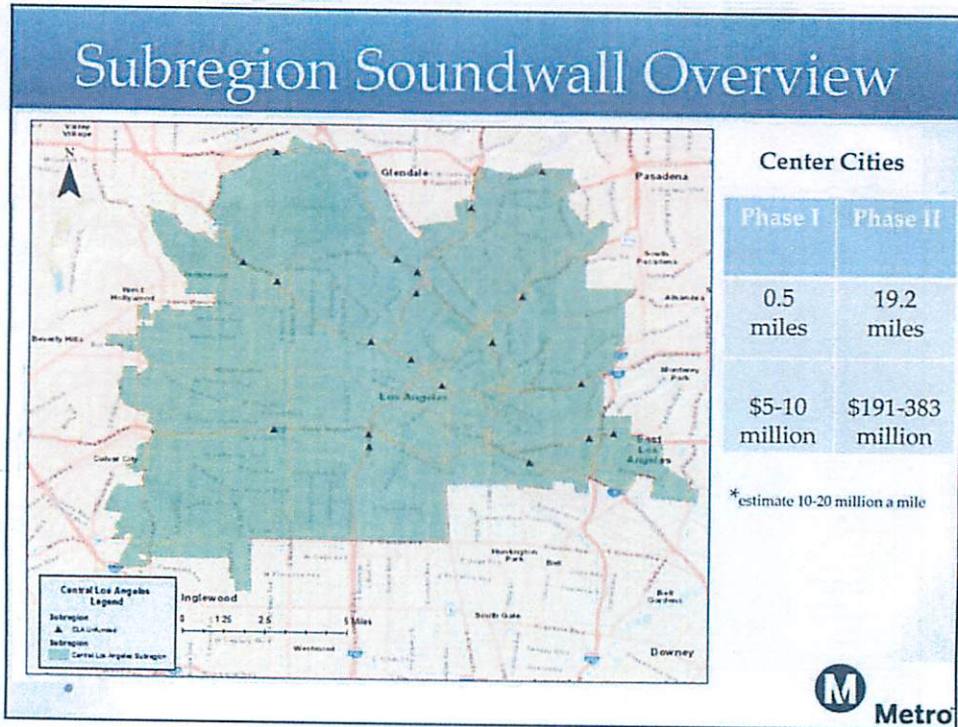
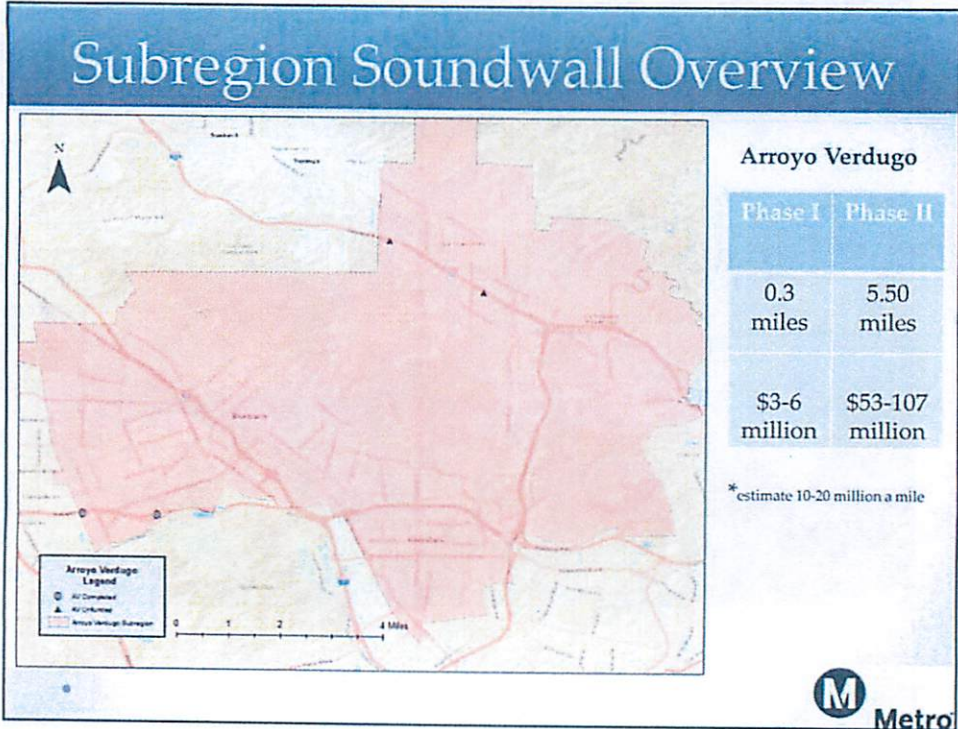
Acrylite - Soundstop Masonry Wall System & Ready-Fit Noise Barrier Panel

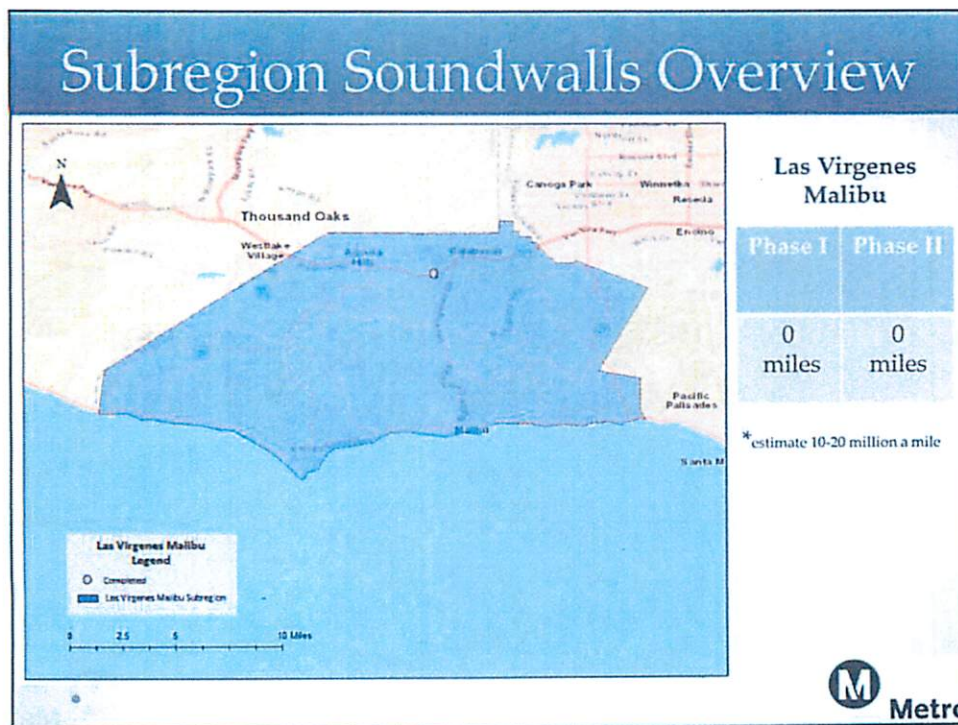
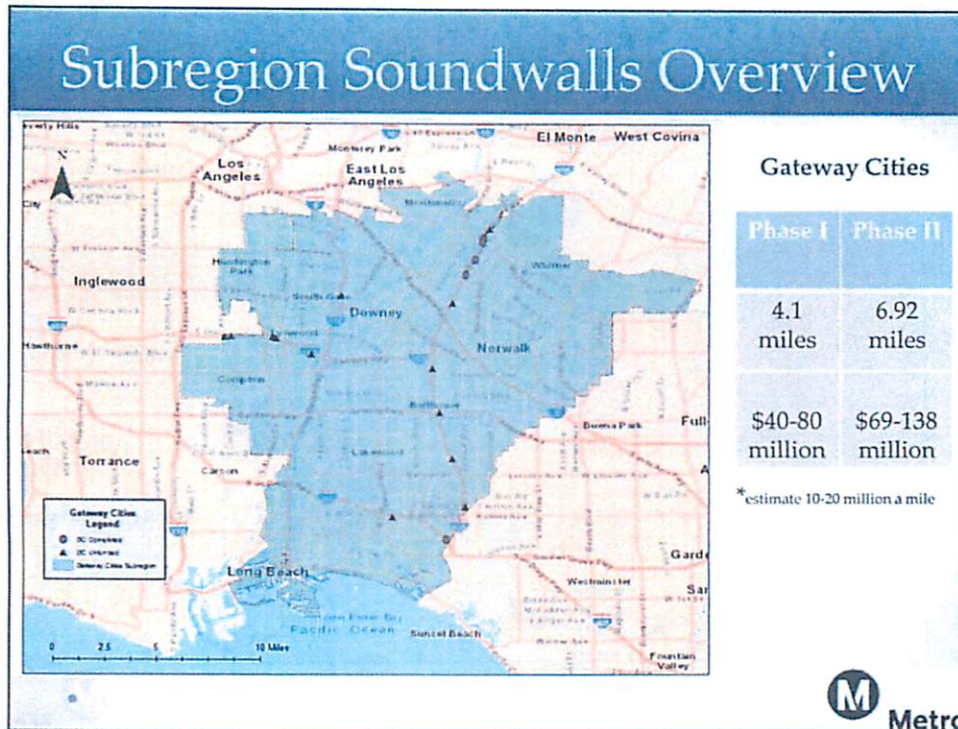


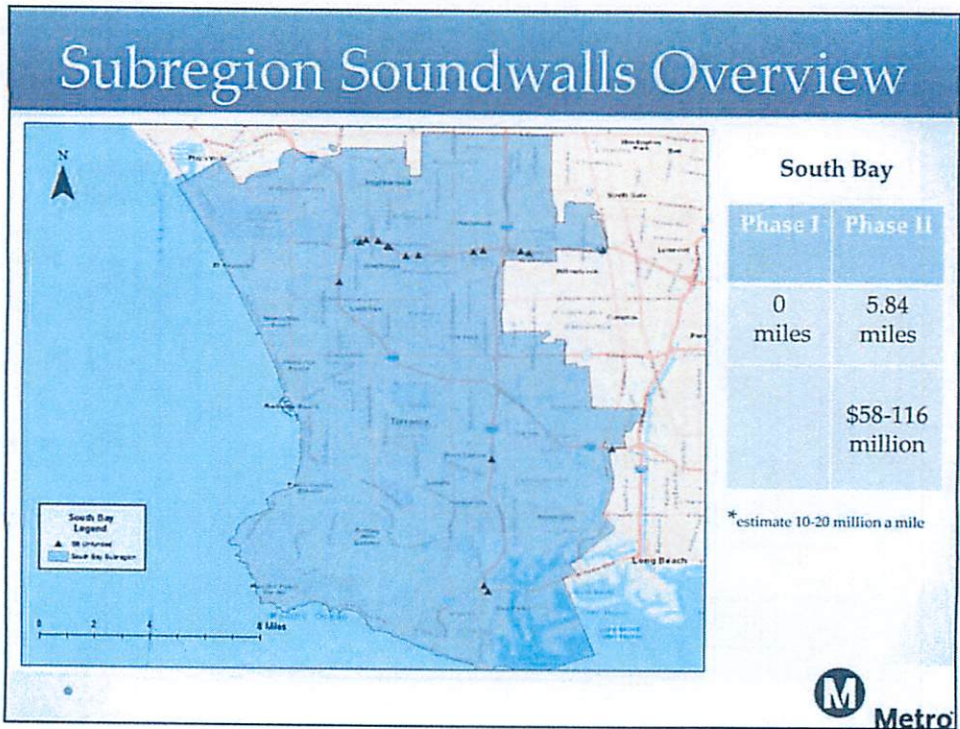
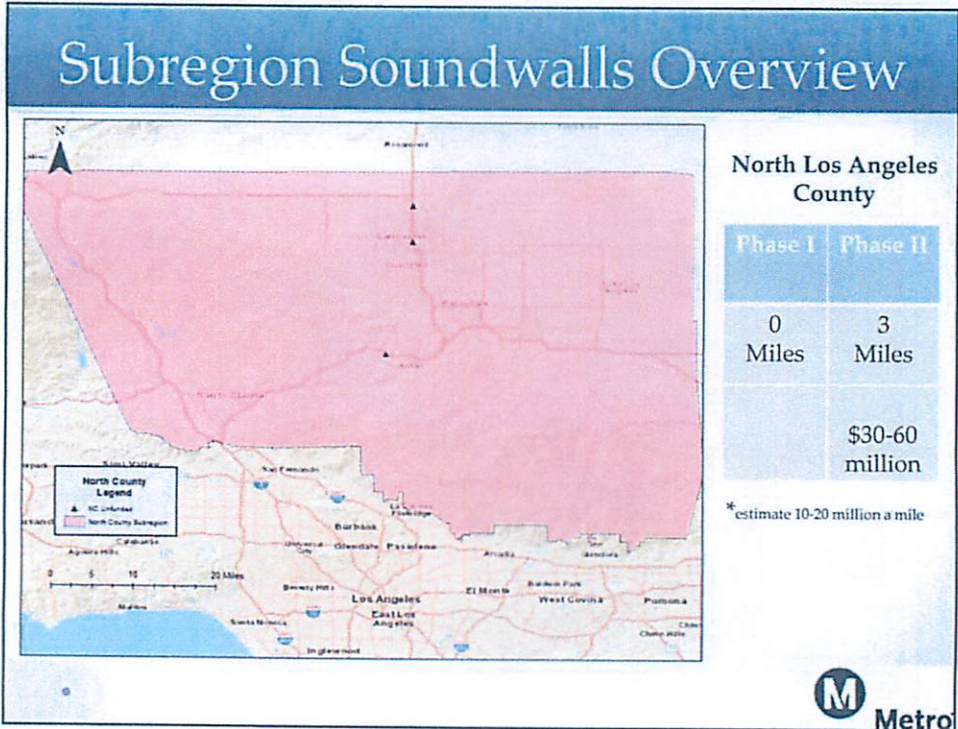
Acrylite - Soundstop TL4 System

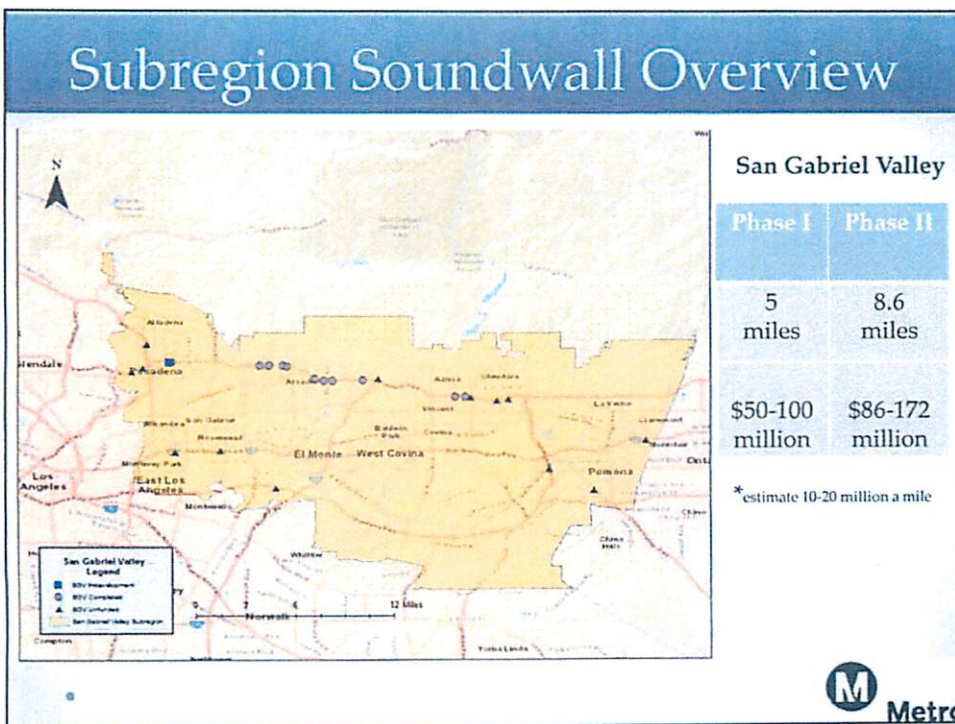
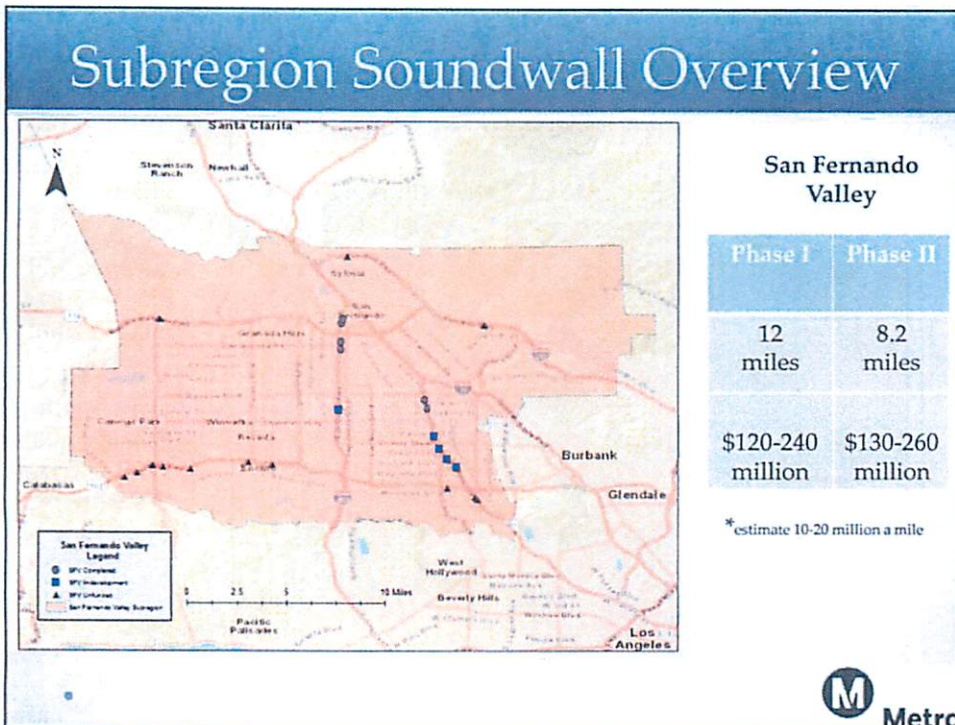


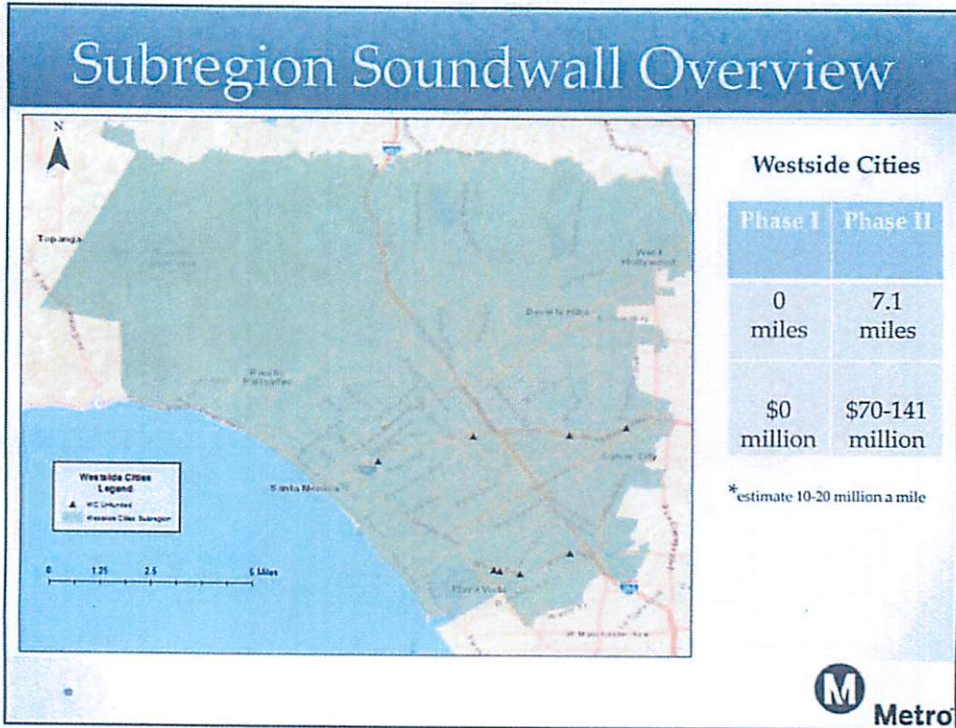












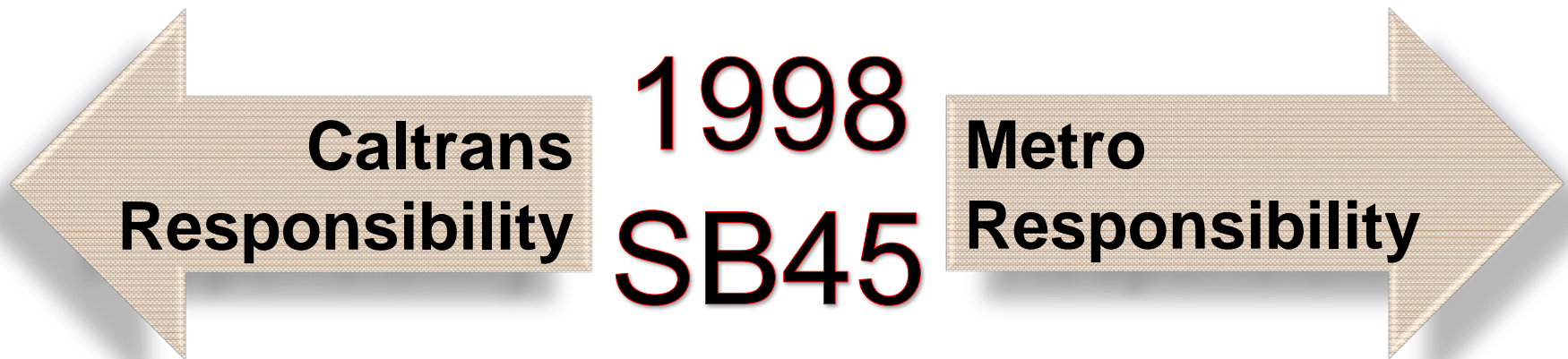
# Metro Soundwall Program

Highway Program  
February 2019



# Soundwall Program History

- Soundwalls are constructed:
  1. as part of the **new freeway capacity enhancement projects** where warranted per established criteria, or
  2. as **retrofit** for protection of eligible residential neighborhoods constructed before an adjacent freeway







# Soundwall Program History



Post May 1989 Phase I and II soundwall priority lists

- **Phase I** – Soundwalls where HOV lanes were constructed without the required soundwalls
  - [Priority 1](#): Soundwalls were constructed on one side of the freeway only
  - [Priority 2](#): Soundwalls were not constructed
  - [Priority 3](#): Soundwalls that met the requirements to be in Phase I but were identified after establishment of the initial Phase I list
- **Phase II** – All other soundwalls



# Eligibility Criteria for Soundwall Construction



**Feasibility Test** - A soundwall of a reasonable height constructed adjacent to a freeway must be able to attenuate noise.

- 1. Noise Level Threshold** - A minimum noise level of 67 dBA for one hour (the highest one hour noise reading)
- 2. Noise Reduction:** Min. 5 dBA reduction with a proposed wall
- 3. Cost Feasibility** - Max. \$92,000 cost per dwelling unit.



# Soundwall Project Funding & Delivery



1. Noise Investigation
2. Prepare Noise Barrier Scope Summary Report (NBSSR) to identify the proposed size and locations of soundwalls, environmental and other impacts, and provide the estimated cost
3. Priority assignment
4. Funding to proceed to design and construction phases

# Construction Requirements



# Alternative Materials



Metro

# Soundwall Program Status



Phase/Package	Status
Phase I, Priority 1, Packages 1-8	Completed
Phase I, Priority 2, Package 10	In Design
Phase I, Priority 2, Package 11	In Construction (Package 9 Scope included in Package 11)
Phase I, Priority 2, Packages 12-14	NBSSR Completed Not Funded for Design or Construction
Phase I, Priority 3	List not funded/not prioritized
Phase II	List not funded/not prioritized

# Remaining Walls Phase I



## Priority 2

<u>Pkg</u>	<u>Route</u>	<u>Miles</u>	
12	210	1.7	Glendora
13	405	9	Long Beach, Carson
14	134	<u>0.6</u>	Eagle Rock
		<b>11.3</b>	<b>NET: 4.06 miles</b>

## Priority 3

	57	7.8	Diamond Bar
	91	5.6	Bellflower
	118	13.8	Los Angeles
	134	0.6	Toluca Lake, Burbank
	405	<u>0.7</u>	Long Beach, Los Angeles
		<b>28.5</b>	<b>NET: 7.6 miles</b>



# Remaining Walls

## Phase II



<u>Route</u>	<u>Miles</u>	<u>Jurisdiction</u>
2	9.2	Los Angeles
5	10.2	Los Angeles
10	38.33	Santa Monica, LA, Alhambra, Monterey Park
14	8.4	Los Angeles, Lancaster
47	1.2	Los Angeles
57	2.8	Pomona
60	7.3	Los Angeles
71	1.7	Pomona
90	2.6	Los Angeles
91	0.12	Cerritos
101	14.77	Los Angeles, SFV, Calabasas
105	10.52	Los Angeles, Hawthorne, Lynwood, Willowbrook
110	18.55	Los Angeles, San Pedro
118	0.2	Los Angeles, Chatsworth
134	1.29	Los Angeles, Burbank, Glendale
210	42.6	Los Angeles, Glendale, Pasadena, Arcadia, Glendora,
405	3.04	Los Angeles, Long Beach
605	3.05	Lakewood, Pico Rivera, Whittier, Norwalk
710	<u>2.4</u>	Bell, South Gate
	<b>178.27</b>	<b>(NET: 68.8 miles)</b>







# Soundwall Cost



- ❑ Current cost (design and construction):
  - \$10 Million/mile if placed adjacent to the freeway shoulder
  - \$20 Million/mile if on bridge structures or retaining walls
  - Phase I: \$216.6 - \$433.2 million
  - Phase II: \$688 million - \$1.3 billion
  
- ❑ Funds in LRTP (starting in 2024): \$350.8 million

# Soundwall Funding



Eligible Fund Source	Eligible Phase	Comments
Prop. C 25% & RIP	I	2024-2040 Years New Funding is Available
<b>Measure R</b>		
Metro Allocation	I & II	\$17.3 (2024). Nearly all funds are programmed to other projects and programs
Subregional Highway Funds & Local Return	I & II	Only Arroyo Verdugo and Gateway Cities have programmed part of their allocations to build soundwalls
<b>Measure M</b>		
Subregional Highway Funds & Local Return	I & II	Guidelines Developed. Local return may be used to build soundwalls.
SB 1 Local Partnership Program	I & II	LPP Funds a broad variety of projects. Limited funding availability, soundwalls have to compete.





# For More Information

Soundwall Program Webpage:  
<https://www.metro.net/projects/soundwalls>





## Board Report

File #: 2018-0798, File Type: Agreement

Agenda Number: 8.

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### AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE FEBRUARY 20, 2019

**SUBJECT: FUNDING AGREEMENT FOR SR-57/SR-60 INTERCHANGE IMPROVEMENTS**

**ACTION: APPROVE RECOMMENDATION**

#### **RECOMMENDATION**

AUTHORIZE the Chief Executive Officer (CEO) to execute Funding Agreement #9200000000M500201 for \$29,525,000 with San Gabriel Valley Council of Governments (SGVCOG) for support services for the SR-57/SR-60 Interchange Improvements.

#### **ISSUE**

Metro, in collaboration with Caltrans, SGVCOG, and the Cities of Diamond Bar and Industry, is leading improvements to the SR-57/SR-60 Interchange to alleviate operational deficiencies and improve mobility and safety along both roadways. The funding agreement will enable Metro to complete utility coordination, right-of-way acquisition and procurement and construction management services for the proposed project.

#### **BACKGROUND**

In September 2018 the Metro Board awarded a contract for consulting services for preparation of Plans, Specifications & Estimates (PS&E) for the proposed improvements (File # 2018-0238/Item 47 - Attachment A). Now that the PS&E phase is underway, it is Metro's intention to perform utility coordination/relocation and right-of-way acquisition parallel to the development of final design to improve efficiency and reduce schedule and cost risk.

#### **DISCUSSION**

The SR-57 and SR-60 are major freeways and important interregional transportation and goods movement corridors in Los Angeles County. They meet in the Cities of Industry and Diamond Bar in the San Gabriel Valley and share the same alignment for over one mile. This segment experiences severe congestion because of high truck volumes and numerous weaving movements between the SR-57 and SR-60 and traffic entering and exiting Grand Avenue.

In order to facilitate expeditious development and implementation of the SR-57/SR-60 Interchange Improvements project, Metro is entering into an agreement with the SGVCOG to perform support

services for utility coordination and right-of-way acquisition during the PS&E Phase and construction management services during the Bid & Award and Construction Phase.

SGVCOG is uniquely qualified to perform support services for utility coordination, right-of-way acquisition and construction services via their experienced personnel from the Alameda Corridor-East (ACE) Construction Authority. Since 1998 the ACE Construction Authority, now the SGVCOG Capital Projects and Construction Committee, has been performing right-of-way acquisition and construction phase services for numerous grade separation projects in the San Gabriel Valley and coordinating with the same utility companies as those that will be involved with the SR-57/SR-60 Improvements project.

### **DETERMINATION OF SAFETY IMPACT**

The proposed action has no adverse impact on safety of Metro's patrons, employees or users of these facilities. Caltrans highway safety standards are followed in the design and construction of the proposed improvements and exceptions to the standards will be incorporated in accordance with Caltrans and Federal highway Administration (FHWA) procedures.

### **FINANCIAL IMPACT**

The Measure M Expenditure Plan allocates \$205 million in Measure M (Highway 17%) funding for the SR-57/SR-60 Interchange Improvements ( Line 18 of the Expenditure Plan).

Of the \$29,525,000 projected cost of services to be provided by the SGVCOG, \$7,925,000 for pre-construction costs have been set aside for FY19, FY20 and FY21, using Measure M (Highway 17%) and Trade Corridor Enhancement Program (TCEP) funds from SB1.

The FY19 budget includes \$12 million in Highway Program Cost Center 4720, in Project 475002 SR-57/SR-60 Interchange Improvements, Task 5.3.100, Account 50316 (Professional/Technical Services). Staff will manage within the current FY19 budget to administer the project for ROW acquisition(s) and preconstruction efforts.

Since this is a multi-year project, the Project Manager, the Cost Center Manager, and the Senior Executive Officer, Program Management - Highway Program will be responsible for coordinating the programming and budgeting costs in future fiscal years.

### **Impact to Budget**

The source of funds to date for this project is Measure M (17%) Highway Funds and TCEP funds from SB1. These funds are not eligible for bus and rail operating capital expenditures. No other funds have been considered. Staff will continue to pursue additional funding opportunities as they become available.

## **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

The proposed project is consistent with the following Metro Vision 2028 Strategic Plan Goals:

Goal 1: Provide high-quality mobility options that enable people to spend less time traveling by alleviating the current operational deficiencies and improving mobility along the mainline and the SR 57/SR 60 interchange.

Goal 2: Transform LA County through regional collaboration by partnering with Caltrans and the SGVCOG and the Cities of Diamond Bar and Industry to identify needed improvements and taking the lead in developing and implementing the Project.

## **ALTERNATIVES CONSIDERED**

The Board may elect not to approve the execution of this Funding Agreement. However, this alternative is not recommended. Awarding the Funding Agreement will allow for completion of the pre-construction activities and project readiness for construction, which in turn, will allow for implementation of the much-needed improvements at the SR-57/SR-60 Interchange.

## **NEXT STEPS**

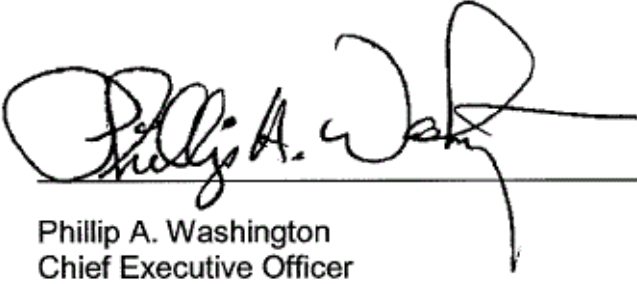
Upon Board approval, staff will issue Funding Agreement #9200000000M500201 to SGVCOG to perform utility coordination, right-of-way acquisition and construction services for improving the SR-57/SR-60 Interchange.

## **ATTACHMENTS**

Attachment A - File # 2018-0238 (Item 47) September 27, 2018 Board Report

Prepared by: Bruce Schmith, Sr. Director, Program Management-Highway Program (213) 418-3367  
Aline Antaramian, Deputy Executive Officer, Program Management-Highway Program (213) 922-7589  
Abdollah Ansari, Sr. Executive Officer, Program Management-Highway Program (213) 922-4781  
Bryan Pennington, Deputy Chief Program Management Officer (213) 922-7449

Reviewed by: Richard F. Clarke, Chief Program Management Officer (213) 922-7557



Phillip A. Washington  
Chief Executive Officer



## Board Report

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File #: 2018-0238, File Type: Contract

Agenda Number: 47.

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**REGULAR BOARD MEETING  
SEPTEMBER 27, 2018**

**SUBJECT: PLANS, SPECIFICATIONS AND ESTIMATES (PS&E) FOR  
SR-57/SR-60 INTERCHANGE IMPROVEMENTS**

**ACTION: APPROVE RECOMMENDATION**

**RECOMMENDATION**

AUTHORIZE the Chief Executive Officer (CEO) to execute a three-year, firm fixed price Contract No. AE51890000 to WKE, Inc. in the amount of \$21,771,625 for Architectural and Engineering (A&E) services for the preparation of Plans, Specifications and Estimates (PS&E) for SR-57/SR-60 Interchange Improvements, subject to resolution of protest(s), if any.

**ISSUE**

Metro, in collaboration with Caltrans, the San Gabriel Valley Council of Governments (SGVCOG), and the Cities of Diamond Bar and Industry, is leading improvements to the SR-57/SR-60 Interchange to alleviate operational deficiencies and improve mobility and safety along both roadways. This contract award will enable Metro to complete the PS&E for the proposed improvements in the eastbound direction of the SR-57/SR-60 interchange (Attachment C).

**DISCUSSION**

The SR-57 and SR-60 are major freeways and important interregional transportation and goods movement corridors in Los Angeles County. They meet in the Cities of Industry and Diamond Bar in the San Gabriel Valley and share the same alignment, or confluence, for over one mile. Within this confluence is the Grand Avenue interchange. This segment experiences severe congestion because of high truck volumes and numerous weaving movements between the SR-57 and SR-60 and traffic entering and exiting Grand Avenue. Higher than statewide average accident and injury rates occur in several locations within the limits of the proposed improvements. Project Approval and Environmental Document (PA&ED) phase was completed and approved by Caltrans in October 2013.

Recognizing the need for corrective measures at the SR-57/SR-60 interchange, this project is funded in part by Measure M and the Metro Board approved placement of this project on the "TWENTY-EIGHT BY '28" project list for expeditious delivery. This engineering services contract is for preparation of PS&E and a bid package for construction of the aforementioned improvements.



### **DETERMINATION OF SAFETY IMPACT**

The proposed action has no adverse impact on the safety of Metro's patrons, employees or users of these facilities. Caltrans highway safety standards are followed in the design of the proposed improvements and exceptions to the standards will be incorporated in accordance with Caltrans and Federal Highway Administration (FHWA) procedures.

### **FINANCIAL IMPACT**

This PS&E contract relates to improvements with a total estimated cost of \$300 million in year of expenditure. The funding for the improvements is included in the Long Range Transportation Plan Financial Forecast and is comprised of State and federal formula and discretionary grants, and Measure M funding for pre-construction costs.

The Measure M Expenditure Plan allocates \$205 million in Measure M Highway 17% funding for the SR-57/SR-60 Interchange Improvements (Line 18 of the Expenditure Plan). The Measure M funding is available for construction starting in FY 2025. Furthermore, this project received a recent award of \$22 million from SB 1 Trade Corridors Enhancement Program (TCEP), of which \$17 million is available for the PS&E phase.

Highway Program staff has requested \$12 million in Measure M funds in the FY 19 budget in Highway Program cost center 4720, in SR-57/SR-60 Interchange Improvements Project 475002, Task 5.3.100, Account 50316 (Services, Professional/Technical). Based on TCEP grant requirements, approximately \$8.2 million of the FY19 projected expenses of \$12 million will be funded by the TCEP grant and the remaining amount will be funded by local matching funds.

Since this is a multi-year project, the Project Manager, the Cost Center Manager, and the Senior Executive Officer, Program Management - Highway Program will be responsible for coordinating the programming and budgeting costs in future fiscal years.

#### **Impact to Budget**

The source of funds for this project is Measure M Highway Construction Capital (17%) funds and TCEP funds from SB1. These funds are not eligible for bus and rail operating capital expenditures.

### **ALTERNATIVES CONSIDERED**

The Board may elect not to award the contract. However, this alternative is not recommended. Awarding this professional services contract will allow for completion of the pre-construction activities and project readiness for construction, which in turn, will allow for greater opportunities to seek and secure grant funds that may become available for construction of much needed improvements at this interchange.

### **NEXT STEPS**

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Upon Board approval, Contract No. AE 51890000 with WKE, Inc. will be executed to prepare the PS&E for improving the SR-57/SR-60 Interchange.

**ATTACHMENTS**

Attachment A - Procurement Summary

Attachment B - DEOD Summary

Attachment C - Project Location Map

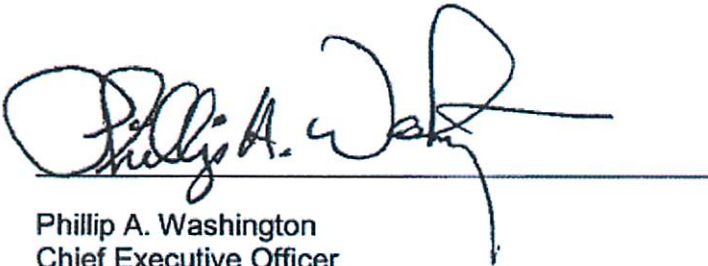
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