Metro

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

Agenda - Final

Wednesday, January 16, 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
Հայերէն	ภาษาไทย
Tiếng Việt	ហាមមើម

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
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 UPDATE 2018-0806

RECOMMENDATION

RECEIVE report by the Caltrans District Director on Delivery of Projects on I-5.

6. 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.

(CARRIED OVER FROM NOVEMBER AD HOC CONGESTION, HIGHWAY, AND ROADS COMMITTEE)

Attachments: Attachment A - Road Barriers Motion
Presentation

7. SUBJECT: CONGESTION PRICING STRATEGIES 2018-0818

RECOMMENDATION

RECEIVE oral report on Congestion Pricing Strategies presented by Dr. Manville.

8. SUBJECT: I-10 EXPRESSLANES BUSWAY PILOT PROGRAM 2018-0562

RECOMMENDATION

AUTHORIZE the development of an implementation plan for the I-10 ExpressLanes Pilot Program.

Attachments: Attachment A - Motion 43
Attachment B - I-10 ExpressLanes Busway Pilot Prelim Assessment
Presentation

9. SUBJECT: METRO EXPRESSLANES - CUSTOMER SERVICE CENTER OPERATIONS 2018-0544

RECOMMENDATION

AUTHORIZE the Chief Executive Officer to award firm fixed price Contract No. PS51236000 to Faneuil, Inc. to provide the personnel, services, and expertise to operate the Metro ExpressLanes Customer Service Centers for an eight-year base period, with three, two year options, in the amount of

$83,022,159 for the base period and $86,352,515 for all option years exercised, for a total of $169,374,674, subject to resolution of protest(s), if any.

Attachments: Attachment A - Procurement Summary
Attachment B - DEOD Summary

10. SUBJECT: I-10 AND I-110 METRO EXPRESSLANES "PAY-AS-YOU-USE" MODEL 2018-0703

RECOMMENDATION

APPROVING a one-year pilot of the “Pay-as-You-Use” model.

Attachments: Attachment A - Motion 42.pdf
Attachment B - FY18 Performance Report
Attachment C - Demographic Analysis of Express Lane Regions
Attachment D - Comparison Chart
Attachment E - Surcharge Assumptions and Costs.pdf
Presentation

SUBJECT: GENERAL PUBLIC COMMENT 2018-0807

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

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

Metro

Board Report

File #: 2018-0652, **File Type:** Motion / Motion Response **Agenda Number:** 5.

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

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

Metro

Board Report

File #: 2018-0424, **File Type:** Motion / Motion Response **Agenda Number:** 61.

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

NOVEMBER 2018

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.

Caltrans

BOARD ACTION

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

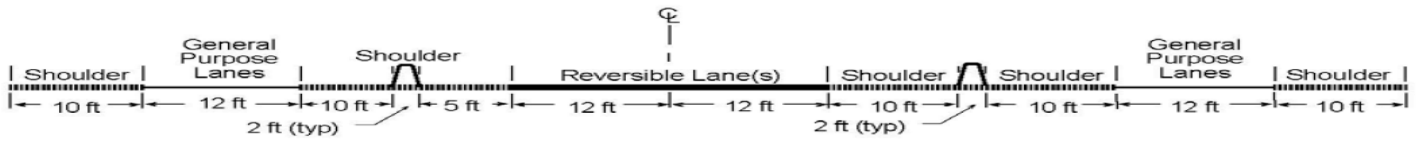
- **1. Identifying the potential freeway corridor segments such as the I-405 between I-105/LAX to I-710, and others, that have unique directional traffic flows.**
- 2. Coordination with Caltrans to identify the associated capital costs such as bridge replacement.
- 3. Coordination with Caltrans to identify 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

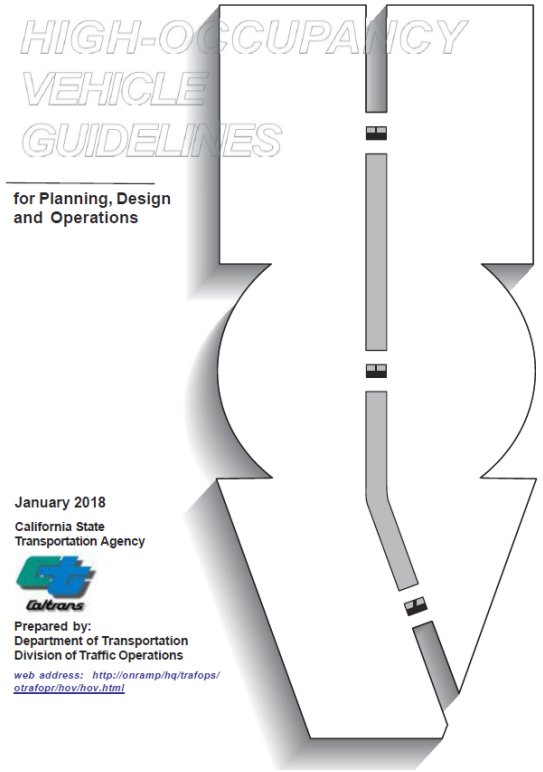
From High-Occupancy Vehicle Guidelines for Planning, Design & Operations. January 2018.

- 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



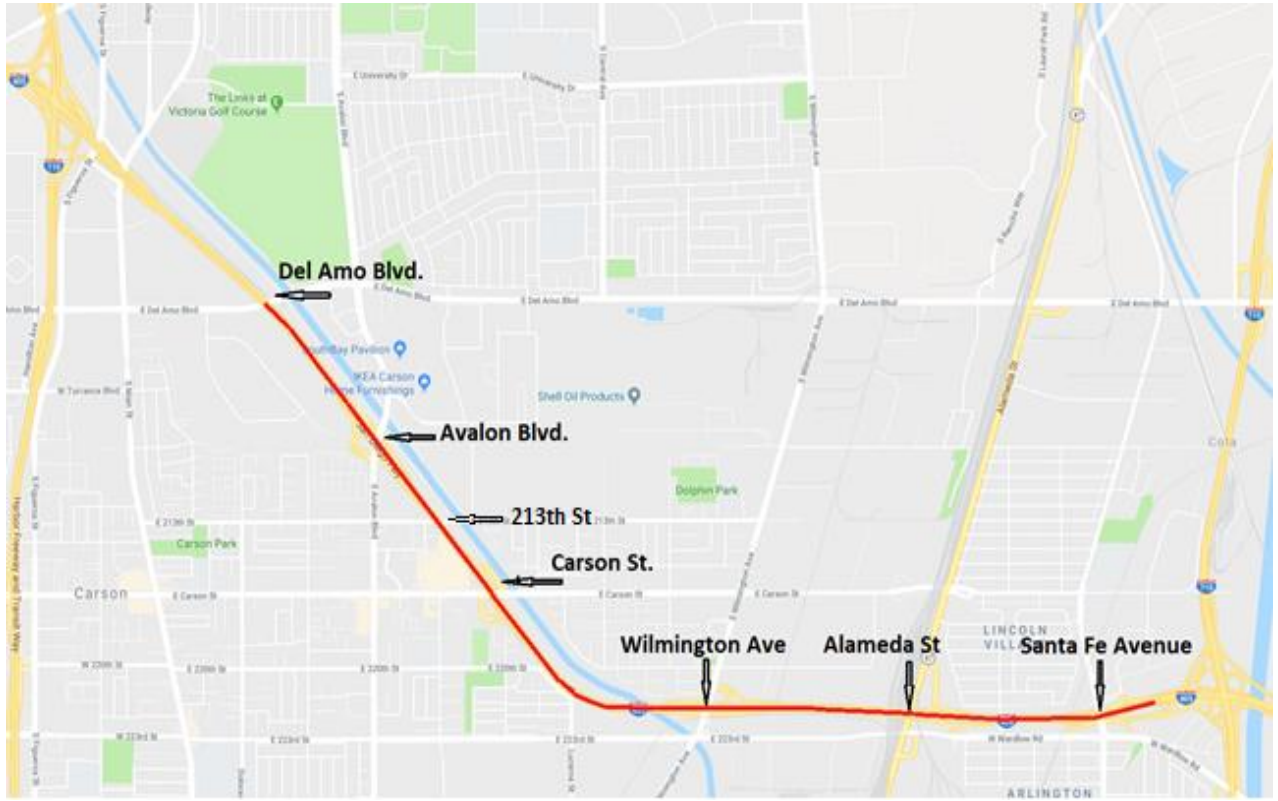
REVERSIBLE BARRIER-SEPARATED HOV FACILITY



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)

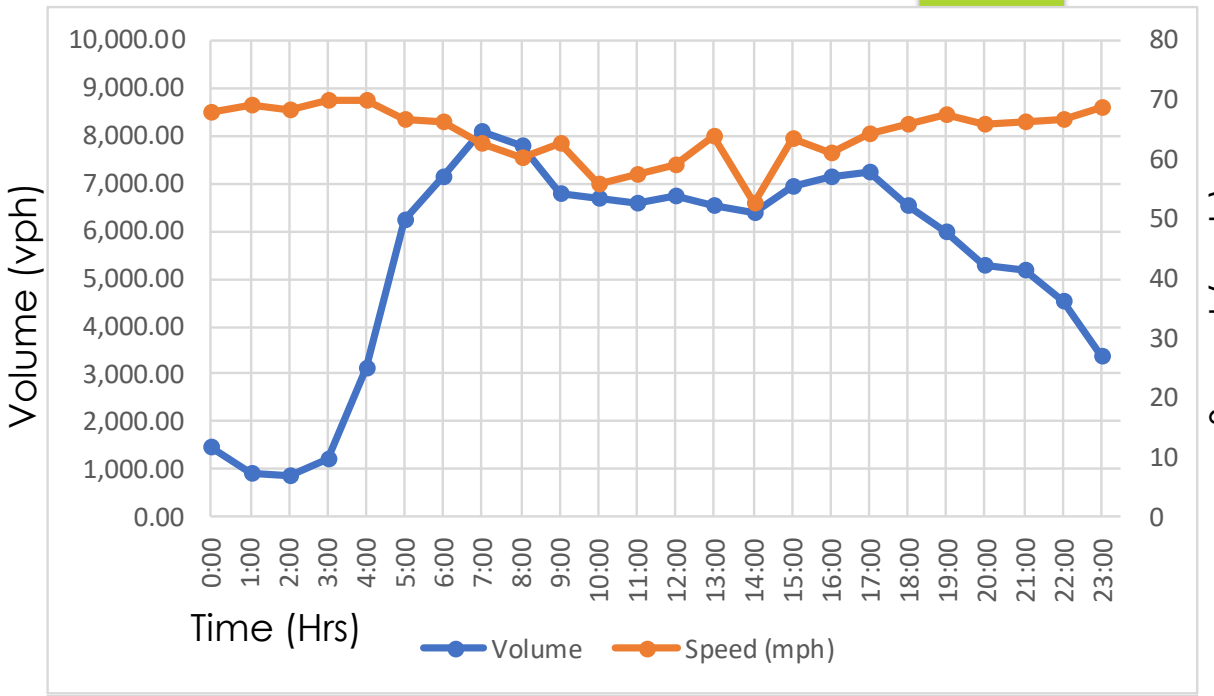


- I-405 is the most congested urban freeway in California, and the site of the top bottlenecks in Los Angeles County.
- There are no major physical constraints located in the median, making it physically feasible for movable barrier system, if 65/35 split tends to exist.
- This segment of I-405 is part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

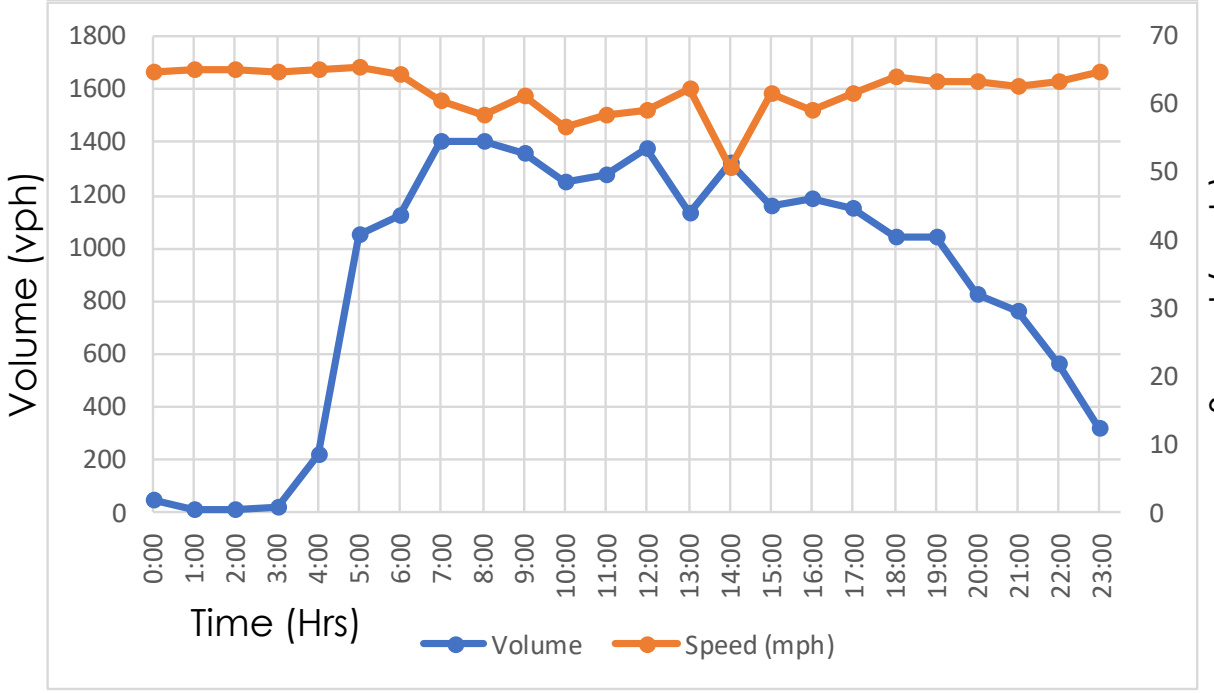
DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 NB

AT AVALON BLVD.

GENERAL PURPOSE (4 LANES)



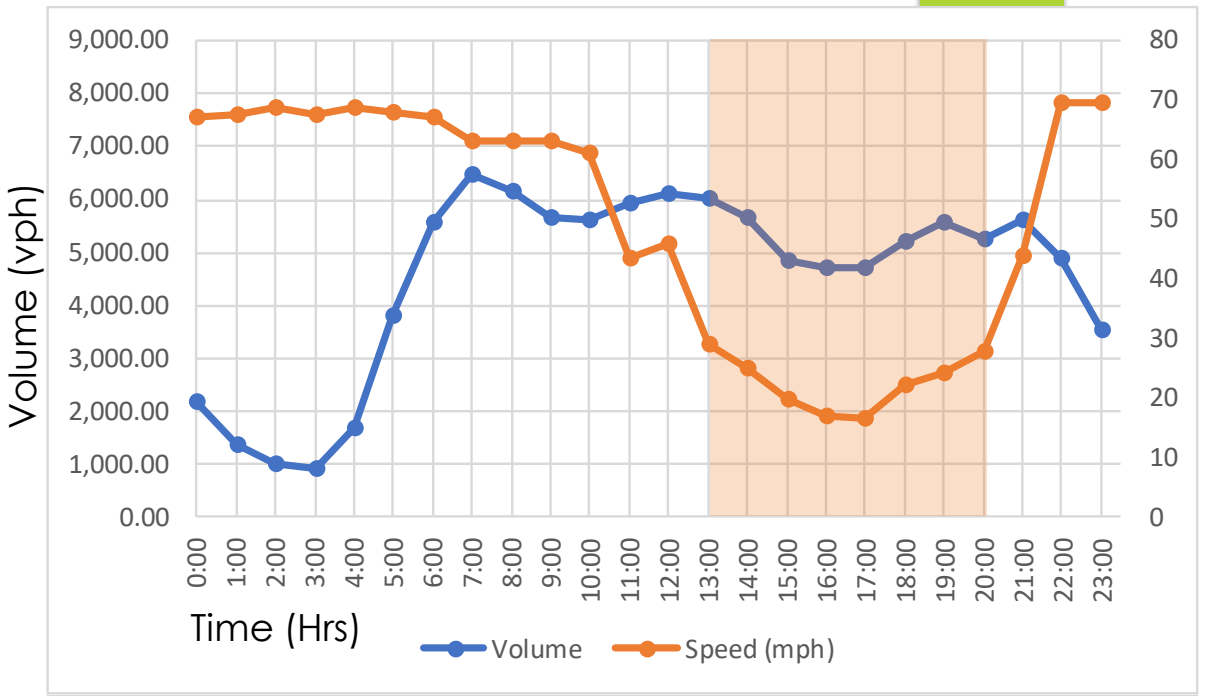
HOV ONLY (1 LANE)



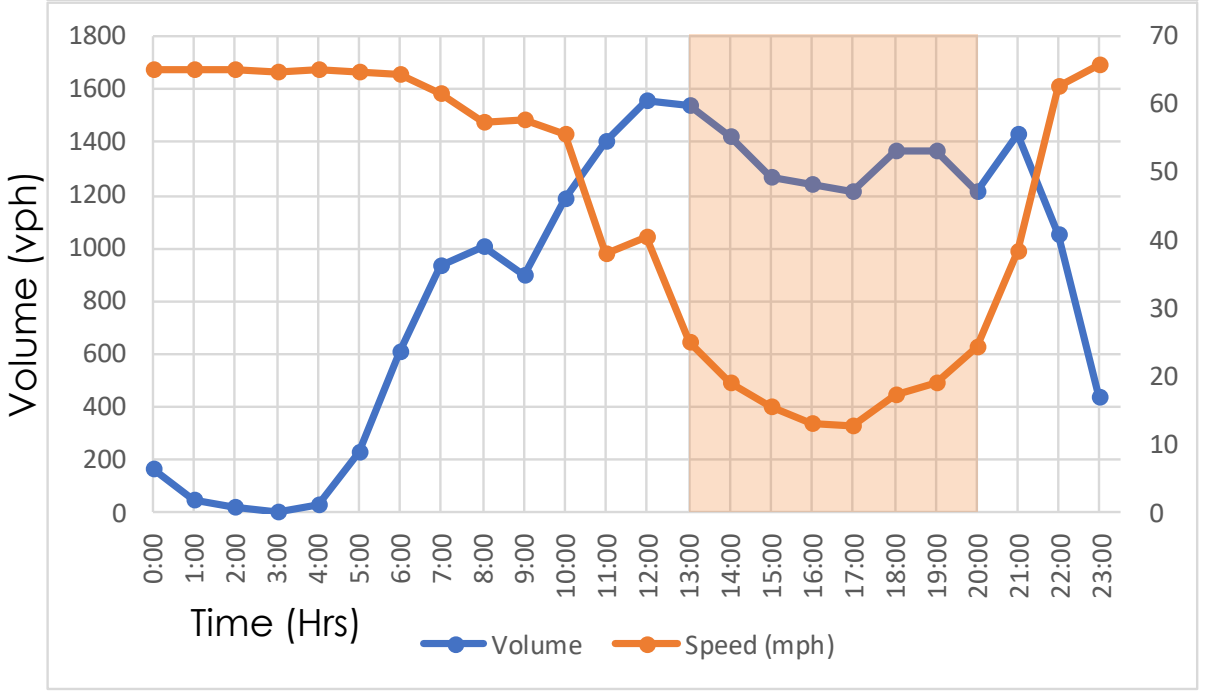
DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 SB

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

Lowest Volume — Highest Volume

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

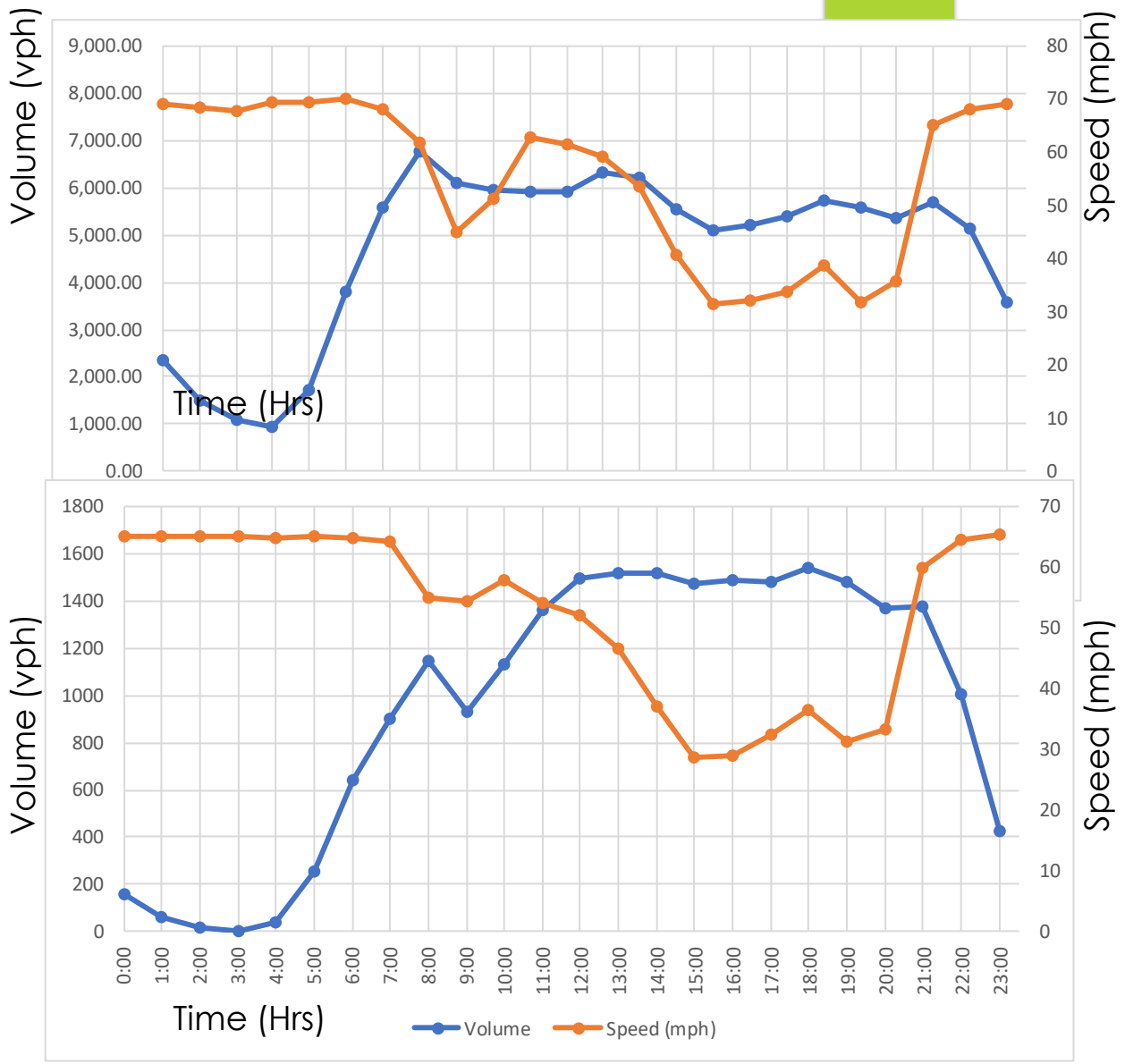
< 35 MPH — > 60 MPH

DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 NB

AT SANTA FE AVE.

GENERAL PURPOSE (4 LANES)

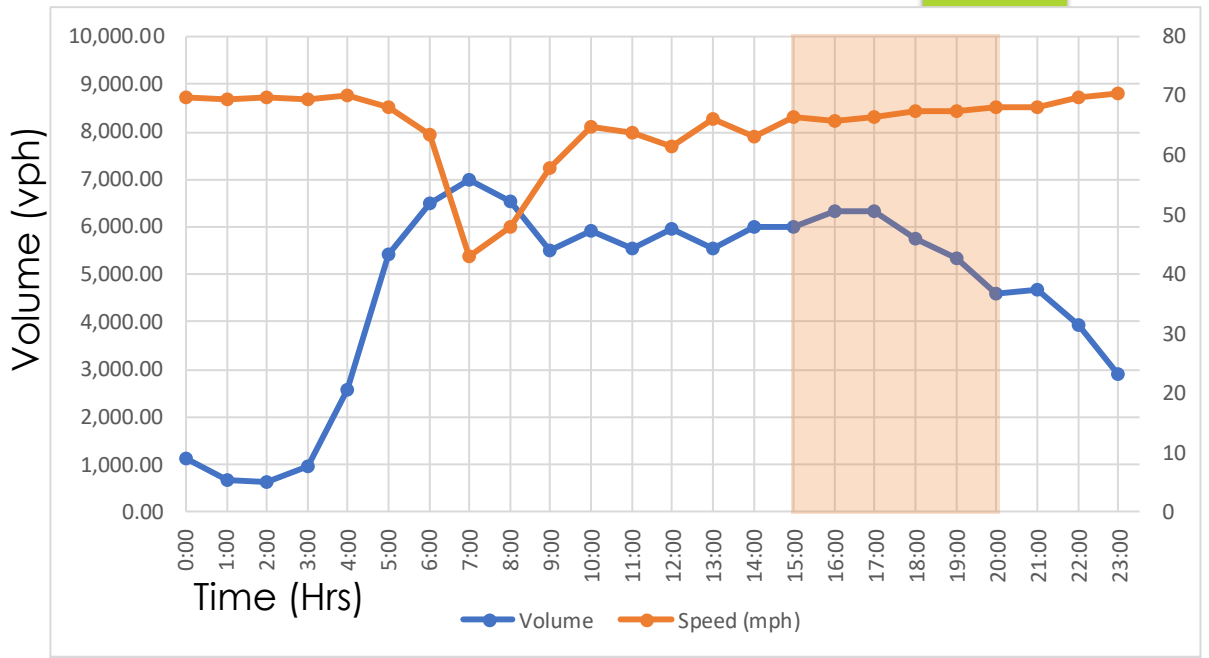
HOV ONLY (1 LANE)



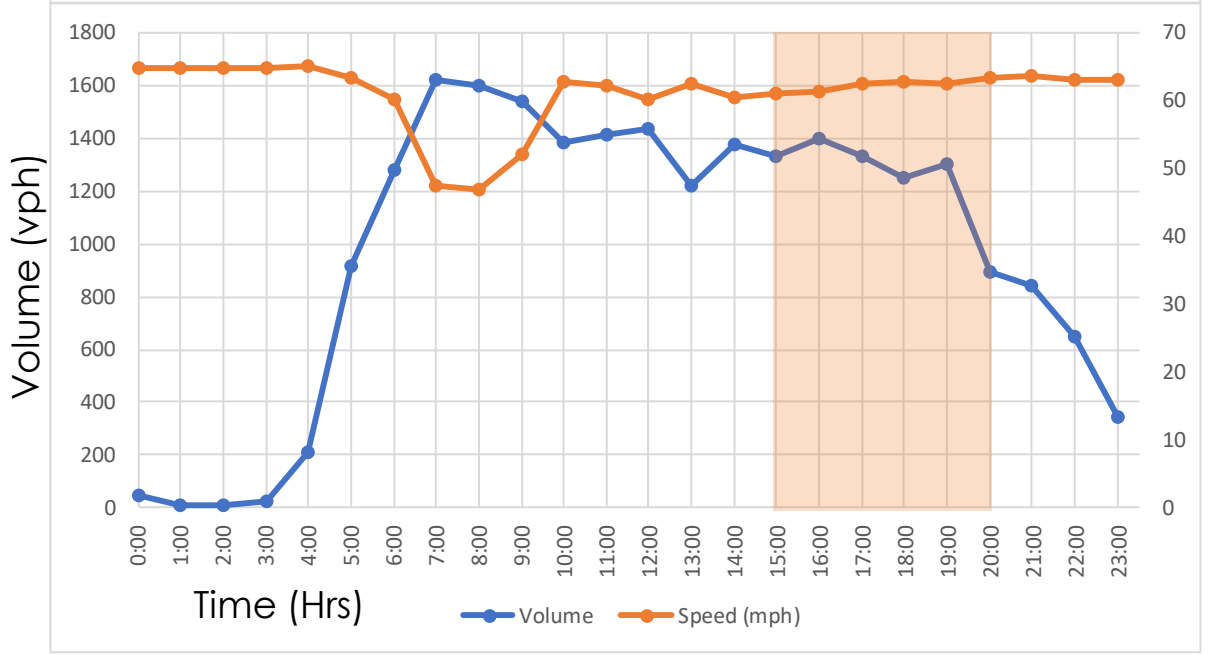
DIRECTIONAL VOLUME AND SPEED COMPARISON I-405 SB

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 omplementing 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.

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

Board Report

File #: 2018-0818, **File Type:** Oral Report / Presentation **Agenda Number:** 7.

AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE
JANUARY 16, 2019

SUBJECT: CONGESTION PRICING STRATEGIES

RECOMMENDATION

RECEIVE oral report on Congestion Pricing Strategies presented by Dr. Manville.

Congestion Pricing: Overview

Michael Manville
Department of Urban Planning
Institute of Transportation Studies
UCLA

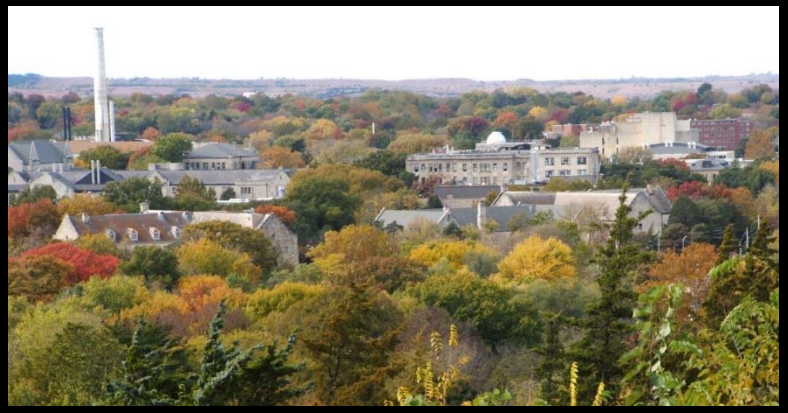
UCLA

ITS INSTITUTE OF TRANSPORTATION STUDIES

Congestion as Distorted Prices

1. Drivers do not pay for the delay they impose on others
2. Drivers use infrastructure without paying for it by use
3. People do not pay for valuable urban land they occupy

Median home price: $1.4 million
Average commercial rent: $72/sq ft
Price to drive across: zero



Median home price: $197,000
Average commercial rent: $12/sq ft
Price to drive across: zero

Price Controls Have Four Consequences

- Shortages – You run out of the good
- High Search Costs – People expend extra energy to find the good
- Misallocation – The good is consumed both by people who value it a lot and people who don't
- Shadow Markets – the cost of the good ends up in the cost of other goods

Every day is black Friday on the roads: underpricing leads to a shortage

The Fundamental Law of Road Congestion

Suppose you capacity to a road:

If a New Lane or Train Pulls Some Cars off the Road

- Speed increases, *at first*
- But time is the biggest and most salient personal cost of driving
- So as speed rises price of driving falls
- Price falls ➔ demand rises
- People start driving on the road from
- --Other routes
- --Other times
- --Other modes
- Road returns to original congestion level
- Called *triple convergence*

You Can't Build or Buy Your Way out of Congestion

Can't reduce congestion by making driving at peak hours *cheaper.*

Congestion Pricing

- Only solution that addresses *cause* of congestion
- *Performance* pricing: *Not* a toll designed to raise revenue
- Government sets a performance standard (e.g., 55 mph), and the price floats to lowest level that achieves it
- Benefit comes from *charging the price*, not *spending the revenue*

Where It's Used, It Works

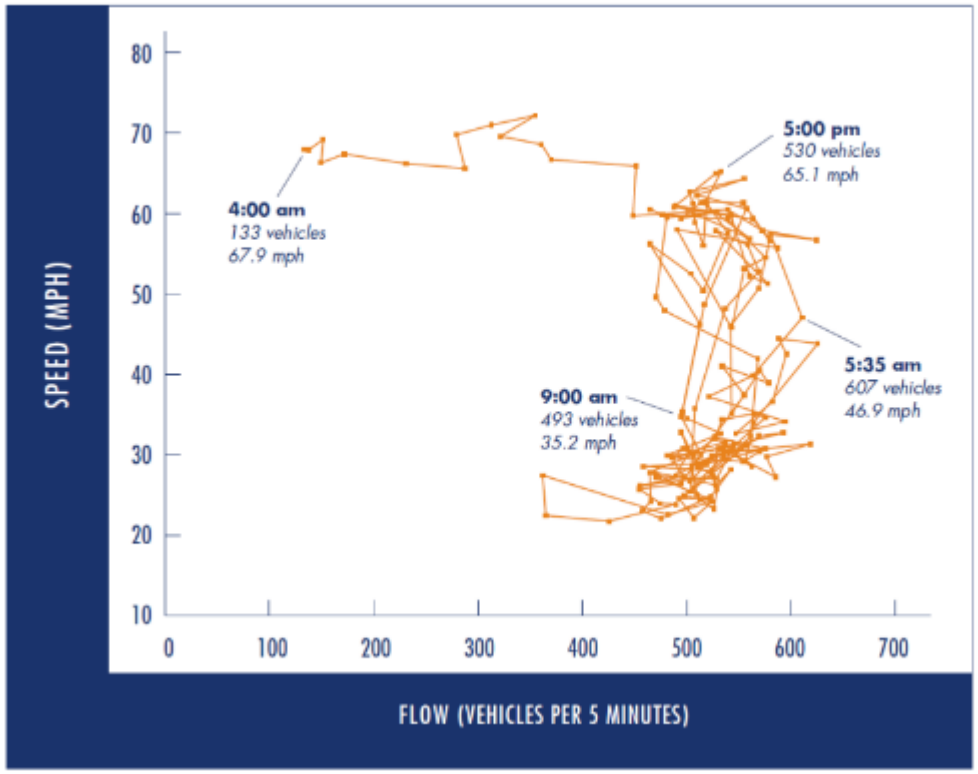
Can be cordons, corridors, or networks

Pricing Creates Triple *Divergence*

- Some people who would travel on busy roads at busy times switch to
  - Other routes
  - Other times
  - Other modes

Not many people have to switch

Congestion is Non-Linear



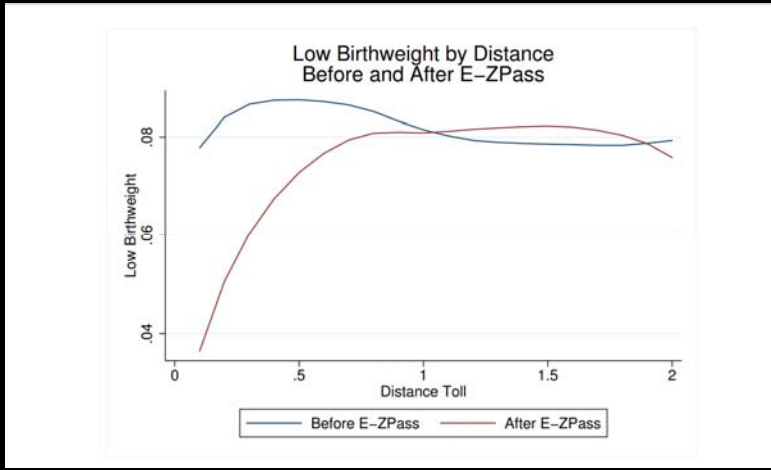
Speed vs. flow on I-10 westbound in 5 minute intervals from 4:00 am to 6:00 pm

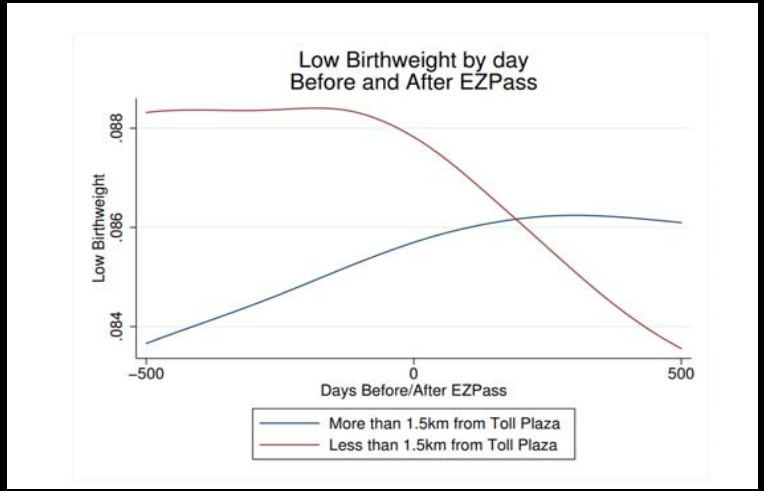
Small share of vehicles can tip a road into gridlock. So slowing or preventing their entry removes bottlenecks, and moves more people.

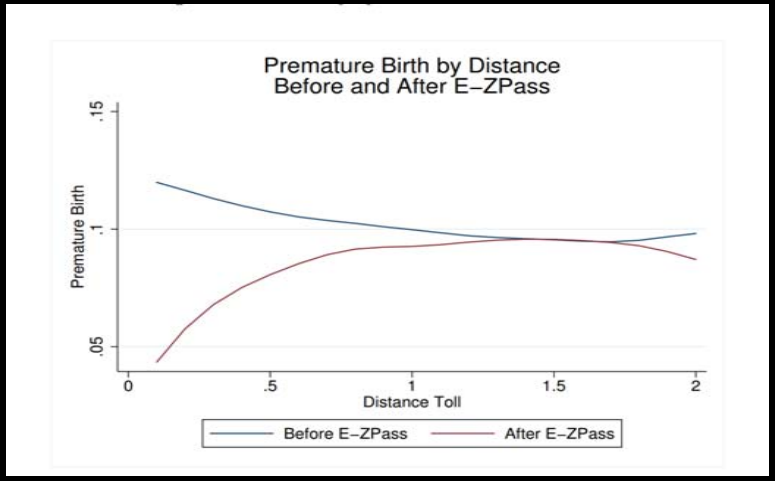
Is this Fair?

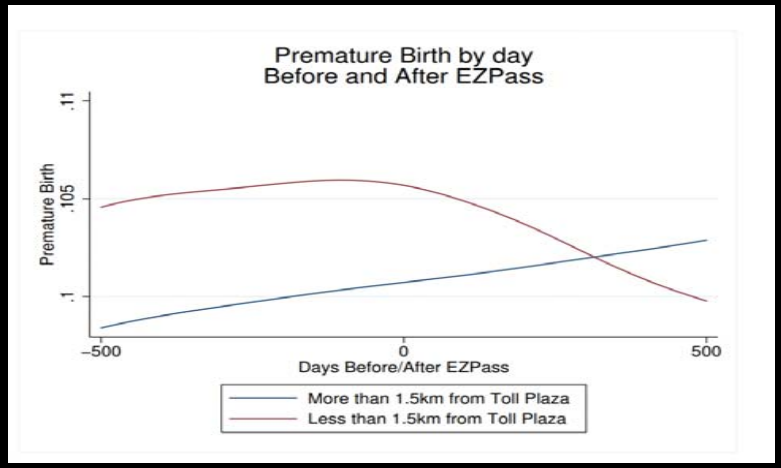
- Congestion prices are regressive
- The entire transportation finance system is regressive (gas taxes, sales taxes, registration fees)
- Most of the infrastructure system is regressive (water meters, electric meters, etc)
- Priced roads disproportionately benefit the affluent
- *So do free roads*
- Priced roads, unlike free roads, produce revenue to help disadvantaged people
- Equity concern can be solved with the revenue

Congestion has Public Health Consequences









UCLA

ITS INSTITUTE OF TRANSPORTATION STUDIES

Thank you

mmanvill@ucla.edu

Find research reports and policy
www.its.ucla.edu

UCLA

ITS INSTITUTE OF TRANSPORTATION STUDIES

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

Metro

Board Report

File #: 2018-0562, **File Type:** Motion / Motion Response **Agenda Number:** 8.

AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE
JANUARY 16, 2019

SUBJECT: I-10 EXPRESSLANES BUSWAY PILOT PROGRAM

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

AUTHORIZE the development of an implementation plan for the I-10 ExpressLanes Pilot Program.

ISSUE

This report is in response to Director Fasana's April 2018 Motion 43 amended by Director Solis (Attachment A), requesting that Metro staff work with Caltrans and other stakeholders to develop a pilot exclusively for the I-10 ExpressLanes that increases toll free occupancy requirements from HOV2/HOV3 to vanpools and transit, as a means of preserving the ExpressLanes as a fast, reliable travel option for transit users and all corridor travelers. The Motion requested that Metro Staff report back on:

1. Potential effects of implementing this pilot;
2. Key decision points and milestones for implementation; and
3. Solicitation of feedback and evaluation of potential impacts associated with this pilot, with focus on low-income commuters.

Please note that the Board Motion also mentioned outreach to SCAQMD, but in subsequent conversations with the Board Motion contributors' staffs, this was determined to have been included in error.

BACKGROUND

Historical Perspective
The I-10 ExpressLanes facility was originally built as a busway, and was subsequently opened to HOV3+ traffic for a limited period during a bus strike in 1974. The busway was formally opened to HOV3+ in 1976 to further reduce congestion on the freeway corridor. The ExpressLanes adopted existing occupancy requirements of HOV3+ during peak periods and HOV2+ during the off-peak at the time of opening.

Performance Challenges
The success of the ExpressLanes has resulted in increases in volume year over year since program inception in 2013. A more detailed look at the data for the I-10 reveals that in fiscal year 2018, there were over 15.9 million trips on the I-10 ExpressLanes-a 4.7% increase over the previous year and a 58% increase since 2014. Concurrently, morning commute

speeds have decreased by 12.5% between 2013 and 2018. When traffic density increases to the point that speeds fall below 45mph, the system goes into HOV-Only mode and only HOVs are allowed to enter the ExpressLanes. From 2014 to 2017, HOV-Only time increased by 250% before falling by 14% in 2018.

While the 2018 ExpressLanes Operations Performance Report indicates that 41% of the users of the I-10 ExpressLanes were HOV3+, that data is based on self-declaration. However, based on independent mode-split measurements conducted by Metro in 2018 and the most recent Caltrans Managed Lanes Report, mode split on the I-10 ExpressLanes during peak periods (as measured east of I-710) is:

- Single Occupant Vehicles: 65%
- Carpools with 2 persons: 20%
- Carpools with 3 persons: 4%
- Carpools with more than 3 persons: Less than 1%
- Vanpools: 2%
- Buses: 4%
- Clean Air Vehicles (may include above vehicle types as well): 6%

This data confirm the fact that a sizable proportion of ExpressLanes users mis-represent vehicle occupancy during peak, resulting in increased congestion in the ExpressLanes and increased tolls for those who are accurately reflecting vehicle occupancy.

Travel time reliability for transit vehicles on the I-10 ExpressLanes has also diminished in recent years, impacting on-time performance. Metro operations have had to modify the Silver Line schedules by including additional travel time to maintain a schedule that meets passenger demand. Up to 19% of Foothill Transit buses on I-10 operate behind schedule (varies by month), with the Silver Streak buses delayed by an average of 10 minutes during the AM Peak Hour (8-9 AM).

Enforcement Challenges
There are also enforcement challenges associated with the current exemption of HOV2 and HOV3+ travelers from tolls. This has resulted in a proportion of users on the I-10 ExpressLanes mis-representing their occupancy levels with the intent of improperly obtaining toll-free passage. When travelers mis-represent their vehicle occupancies, it undermines public trust in the ExpressLanes and constrains the ability to effectively manage demand and congestion in the lanes, as discussed in greater detail in Attachment B. While current CHP enforcement and technological solutions under development can be used to discourage this behavior, both of these strategies have limitations.

This proposed pilot is expected to mitigate this source of toll leakage and to therefore enhance fairness/equity across all users, as a product of:

- fewer opportunities for occupancy mis-representation therefore preventing toll rates from being inflated by SOVs declaring as HOVs,
- greater ease of enforcement, and
- a diminished dependency on occupancy detection systems.

DISCUSSION

Increasing the HOV threshold to the Original Requirement

Increasing the HOV occupancy requirement will align with the original intent/spirit of the ExpressLanes/Busway, and will help to mitigate the overutilization of existing ExpressLanes, particularly where capacity is more constrained (e.g., the one-lane segments of the I-10 ExpressLanes). Managing demand by raising HOV minimum occupancy requirements is supported by Caltrans and permitted per Title 23 Section 166 of the U.S. Code as a congestion mitigation strategy.

In response to the motion, this section includes discussion of the following: (1) Potential mobility effects, (2) Low-income commuter surveys, and (3) Inclusion of HOV5+ vehicles for toll exemption.

The key decision points and necessary milestones for implementing this pilot are: (1) obtaining concurrence from Caltrans and FHWA, (2) collecting and analyzing data needs, and (3) developing a formal implementation plan.

In an effort to assess the preliminary impacts of the proposed pilot, staff performed a micro-simulation analysis, conducted a survey of low-income commuters and evaluated the viability of toll free passage for vanpools.

Potential Mobility Effects of Implementing this Pilot

Using an integrated combination of simulation analysis, travel demand modeling, and dynamic toll modeling, the potential mobility impacts of this pilot program were evaluated. At this early stage, these should be interpreted as sketch-planning level results only. This operational impact analysis considered the AM Peak (6-9 AM) and PM Peak (4-7 PM) periods of a typical business day. Detailed analysis results are provided in Attachment B.

ExpressLanes-Specific Mobility Outcomes

- Increase in daily peak period person throughput by 600 persons (a 4% increase from current ExpressLanes throughput).
- Changes in average end-to-end travel times as follows:
    - Increase in Westbound AM Peak by 0.3 minutes.
    - Decrease in Westbound PM Peak by 0.1 minutes.
    - No change to Eastbound AM Peak
    - Increase in Eastbound PM Peak by 1.8 minutes due to queueing at the east end where the ExpressLanes merge back into the general-purpose lanes.
- Increase in average delay cost to ExpressLanes users of $0.18 per person-trip. This is a result of some queueing at the end of the ExpressLanes where they merge back into the general purpose lanes.
- Transit impacts were found to be negligible with respect to average travel time performance. Because simulation models are not designed to directly capture reliability impacts, these could not be evaluated.

General Purpose Lane Mobility Outcomes

- Overall increase in average end-to-end travel times by four minutes. Currently corridor-wide travel times rise above their average levels by as much as 26 minutes from day to day during peak periods due to random variations in traffic. When focusing specifically on the PM Peak eastbound direction, the average projected travel time increase is 21 minutes.

Corridor-wide Mobility Outcomes

- Overall mobility benefit of approximately $3.7 million per day in time/delay cost savings corridor-wide.
- Provision of a more long-term sustainable toll strategy that is less susceptible to congestion-especially congestion caused by vehicles that mis-represent occupancy.

Interpretation

This pilot could potentially achieve the stated goals of reducing ExpressLanes travel times for transit and is anticipated to increase person throughput. The new proposed toll policy also affords other tangible mobility benefits that, while outside the scope of the current analysis, are important to note qualitatively:

- Substantial improvement in travel time reliability when using the ExpressLanes, as the modification of criteria for toll-exempt trips would allow the toll system to manage congestion far more effectively. Travel time reliability is a measure of the predictability and consistency of travel times on the corridor. As travel time reliability improves, travelers benefit by not having to include as much schedule buffer in their travel plans.

- Faster response times for emergency vehicles and Freeway Service Patrol vehicles, which results in faster clearing of incidents and reduced delays.
- Minimizing opportunities for mis-representation of occupancies to avoid payment.

Low-income Commuter Surveys

The 2018 ExpressLanes Customer Survey found the majority of respondents did not support changes to the current toll structure on the I-10 ExpressLanes, though 25% of survey respondents expressed interest in joining vanpools if that were required for toll-free travel. It should be noted that this survey was distributed to current customers only, and is not necessarily a representative sample of all corridor users.

At outreach events targeting low-income commuters along the corridor, feedback was collected from 479 participants regarding the changes being proposed under this pilot. The researchers attempted to target participation by various ethnic groups according to the racial distribution of the population around I-10. ExpressLanes users constituted 51% of the survey sample and completed an average of 3.8 trips per week on the I-10 ExpressLanes. The major findings were:

- Very few have ever used a vanpool on the I-10 ExpressLanes.
- Approximately 41% of current ExpressLanes users would continue to use the ExpressLanes alone or as a carpool while 23% would shift to general purpose lanes under the proposed policy.
- Approximately 56% of non-ExpressLanes users would continue to use the general purpose lanes while 18% would shift to the ExpressLanes under the proposed policy.

Inclusion of HOV5+ Vehicles for Toll Exemption

Federally registered vanpool programs require that the vehicle itself be leased from the program by one of the occupants for reporting and tracking purposes, and that the vehicle have a minimum seating capacity of 7 persons (minimum occupancy requirements vary by program). This requirement can be a deterrent to participation. As a result, Metro ExpressLanes staff is recommending an alternative approach wherein toll-free travel is offered not only to registered vanpools, but also to any vehicles carrying enough passengers to have otherwise qualified as a vanpool based on occupancy.

Based on a review of other ExpressLanes facilities across the country which offer toll-free passage to vanpools, staff found that the majority of the surveyed facilities had a minimum vanpool occupancy requirement of 5 persons. Attachment B provides additional information regarding the treatment of Vanpools in other ExpressLanes facilities throughout the country. Therefore, staff recommends that the occupancy threshold for toll-free passage be set to 5 persons per vehicle.

Key Decision Points and Necessary Milestones for Implementing this Pilot

This section outlines major milestones and key decision points associated with further advancing and implementing this policy, along with progress made in each of these areas to date.

Obtain concurrence from Caltrans and FHWA
Caltrans District 7 indicated support for an HOV5+ occupancy requirement for toll-exempt travel on the I-10 ExpressLanes from the outset. Metro and Caltrans worked collaboratively to submit a formal request from Caltrans seeking FHWA's concurrence regarding the proposed policy change. FHWA recently approved implementation of a pilot program with the condition of submittal of an Implementation Plan for their review prior to deployment. Additionally, FHWA requested inclusion of a before/after study as well as involvement in public outreach activities associated with the pilot.

Additional Data and Analysis
Additional data collection and analysis is needed to support the successful planning and implementation of this pilot. The anticipated timeframe for completing this milestone is Fall 2019. This would include:

1. a more detailed examination of the potential effects of this policy on transit operations;
2. additional market research regarding barriers to toll lane, transit, and vanpool usage among commuters, including

economically disadvantaged stakeholders;
3. a more detailed examination of impacts of the policy on ExpressLanes usage by low-income customers; and
4. a comprehensive assessment of the optimal method for incentivizing HOV5+ and vanpool formation, and for handling the associated toll exemptions through a third party provider.

Develop a Formal Implementation Plan
Results from the additional data collection and analysis activities will inform the development of a more robust, comprehensive implementation plan with additional specificity regarding the various aspects associated with deployment of this pilot project. The anticipated timeframe for completing this milestone is 12-15 months. The implementation Plan would be submitted for approval by FHWA. The plan would include:

- identifying any additional resources required for successful implementation including operational, public engagement/educational, and staffing.
- a detailed cost estimate and schedule,
- a strategy for third-party mobile app integration with the ExpressLanes Back Office System to confirm occupancy and designate toll-exempt trips,
- a comprehensive outreach and education plan, and
- a detailed framework for the Before/After Study.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The FY18 I-10 ExpressLanes Pilot Program aligns with Strategic Goal 1: Provide high quality mobility options that enable people to spend less time traveling. ExpressLanes provides drivers with the option of a more reliable trip while improving the overall operational efficiency of the freeway network.

FINANCIAL IMPACT

Funding for support activities including collaborating with other transit providers, conducting additional market research, further assessment of low-income customer impacts, performing additional investigation into optimal methods for handling vanpool/higher occupancy carpool toll-free passage as well as development of an implementation plan is anticipated to be $1.4 million. Funds to initiate these efforts are available in the FY19 budget in cost center 2220. Because this is a multi-year program, the cost center manager and the Executive Officer of the Congestion Reduction department programs will be responsible for budgeting for future years.

Impact to Budget
The funding for this action will come from toll revenues generated from the Metro I-10 ExpressLanes operations. No other funds were considered for this activity.

ALTERNATIVES CONSIDERED

The Board could choose not to implement the pilot. This alternative is not recommended since, based on current analysis, the pilot can increase overall person throughput, assure travel time reliability for transit vehicles, and address current enforcement challenges related to scofflaws, revenue leakage and HOV only minutes.

NEXT STEPS

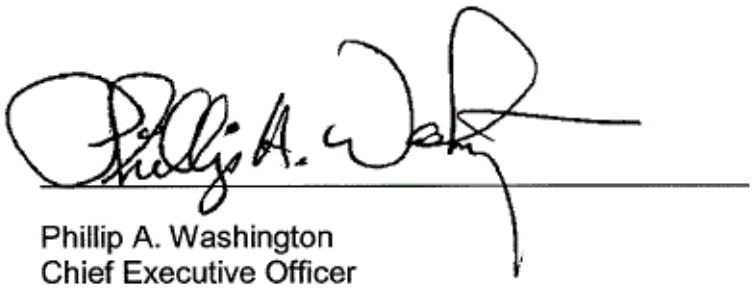
Upon Board approval, staff will continue development of the I-10 ExpressLanes Pilot Program through the following steps: 1) Begin data collection and establish Before/After Study criteria, 2) Utilize existing consultant resources to conduct market research inclusive of low income communities, 3) Prepare statement of work for development of the implementation plan including a public outreach/education and marketing research plan, staff resources, identification of necessary changes to the back office and roadside systems and signage, and development of program cost estimates; and 4) return to the Board as necessary regarding progress.

ATTACHMENTS

Attachment A - Motion 43
Attachment B - I-10 ExpressLanes/Busway Pilot Preliminary Assessment

Prepared by: Alice Tolar, Manager, Transportation Planning, Congestion Reduction, 213.418.3334
Robert Campbell, Manager, Transportation Planning, Congestion Reduction, 213.418.3170

Reviewed by: Shahrzad Amiri, Executive Officer, Congestion Reduction, 213.922.3061



Phillip A. Washington
Chief Executive Officer

ATTACHMENT A

File #: 2018-0195, **File Type:** Motion / Motion Response **Agenda Number:** 43.

REGULAR BOARD MEETING
APRIL 26, 2018

Motion by:

Director Fasana

as amended by Solis

I-10 ExpressLane/Busway Pilot

The I-10 El Monte Busway opened in 1973 as an exclusive busway with stations at El Monte, California State University at Los Angeles, and Los Angeles County USC Medical Center. The El Monte Bus Station, rebuilt and reopened in 2012, is the busiest bus terminal west of Chicago.

Construction of the busway resulted in substantial increases in bus service along the corridor. According to a study by FHWA conducted in 2002, “Executive Report Effects of Changing HOV Lane Occupancy Requirements: El Monte Busway Case Study”, from 1973 to 1976, the number of buses using the lane in the morning peak-hour, peak-direction of travel increased from 21 to 64, with a corresponding increase in passengers from 766 to 3,044. Daily bus ridership levels increased from 1,000 to 14,500 passengers during the same period.

Three-person carpools were allowed to use the Busway for three months in 1974 during a strike by bus operators. The Busway was opened to 3+ carpools in 1976. At the time of conversion to an ExpressLane in 2013, the Busway operated at HOV 3+ during peak hours and HOV 2+ off-peak.

The I-10 Busway / HOV lane is being extended by Caltrans and Metro to the Los Angeles County Line, with an extension to Baldwin Park already open. San Bernardino County is beginning construction this year on an I-10 ExpressLane that would meet up with the Metro / Caltrans lane at the County line and extend to I-15 in 2022, and Redlands in 2026.

The Express Lane allows low occupancy vehicles to use the lanes with payment of a fee, which varies dynamically with traffic levels. To remain consistent with prior HOV 2+ and 3+ requirements, Metro developed a switchable Fastrak transponder for carpools. As ExpressLane acceptance among customers has grown, the busway has grown more congested and has degraded bus service in the corridor. As demand and price have increased, transponders are being switched to HOV 2+ or 3+ to avoid tolls.

The switchable transponder requires CHP to manually observe vehicles to determine if the number of

occupants is consistent with the setting on the transponder. Due to right of way constraints, enforcement of ExpressLane requirements is difficult on I-10, as limited room is available to pull-over and issue citations. CHP enforcement slows traffic in the ExpressLane.

Physical constraints within the right-of-way footprint also limit the ability to place thermal readers that may be able to detect vehicle occupants in the ExpressLane.

One alternative to CHP enforcement is to move to an automated approach where all cars are charged without regard to the number of occupants, through a “Pay-as-You-Use” model.

The Foothill Gold Line and Metrolink also provide east/west service through the San Gabriel Valley. The Gold Line, which will extend east to Montclair, currently is operating at capacity in some locations during peak hours according to the “Metro Rail Capacity Study” that is being presented to the System Safety, Security and Operations Committee in April 2018.

As Metro prepares to expand its ExpressLane network, piloting a new operating approach on I-10 will provide valuable insight on how best to maximize mobility on ExpressLanes.

Therefore, to keep buses moving and enable movement of more people efficiently within the I-10 ExpressLane,

SUBJECT: MOTION BY FASANA AS AMENDED BY SOLIS
I-10 EXPRESSLANE/BUSWAY PILOT

APPROVE Motion by Fasana that:

A. Metro staff work with Caltrans and other stakeholders to develop, within existing federal and state guidelines, a pilot exclusively for the I-10 ExpressLane / Busway that would define carpools as registered vanpools with all other vehicles (other than passenger buses) subject to fees through a “Pay-as-You-Use” model. The Zero Emission Vehicles using the corridor would be eligible for discounts in effect at the time the pilot commences; and

B. Report back to the Metro Board within 180 days on potential effects, key decision points and milestones necessary to implement this pilot including community outreach with feedback and surveys as well as service analysis on impacts and exemptions for low income commuters. The proposed pilot program to be consulted with SCAQMD in relation to Air Quality Management Plan and its impact to sticker program for Electric Vehicle.

I-10 ExpressLanes/Busway Pilot
Preliminary Assessment

- **Vanpool Best Practices**
- **Initial Outreach Findings**
- **Operational Impact**

October 2018

SUBJECT: MOTION BY FASANA AS AMENDED BY SOLIS
I-10 EXPRESSLANE/BUSWAY PILOT
APPROVE Motion by Fasana that:

A. Metro staff work with Caltrans and other stakeholders to develop, within existing federal and state guidelines, a pilot exclusively for the I-10 ExpressLanes / Busway that would define carpools as registered vanpools with all other vehicles (other than passenger buses) subject to fees through a "Pay-as-You-Use" model. The Zero Emission Vehicles using the corridor would be eligible for discounts in effect at the time the pilot commences; and
B. Report back to the Metro Board within 180 days on potential effects, key decision points and milestones necessary to implement this pilot including community outreach with feedback and surveys as well as service analysis on impacts and exemptions for low income commuters. *The proposed pilot program to be consulted with SCAQMD in relation to Air Quality Management Plan and its impact to sticker program for Electric Vehicle.**

NOTE: *The italicized portion of the Board Motion was subsequently determined to be related to a separate Motion pertaining to the Clean Air Vehicle policy and does not apply to this Motion.

Table of Contents

1. Executive Summary

The Board is considering a pilot program to allow registered vanpools and registered higher occupancy vehicles (more than 4 persons per vehicle) to travel in the Metro ExpressLanes free of charge upon meeting certain requirements, as a pilot on the I-10. This white paper examines the potential to remove toll-free options for high-occupancy vehicles with less than 5 occupants (HOV2+ or 3+) while continuing to allow toll-free access on the I-10 ExpressLanes to registered vanpools and some other form of higher occupancy vehicles (HOV5+).

This analysis examines express toll lane (ETL) facilities in several areas of the United States that offer some form of a toll exemption program for vanpools/carpools. While most agencies provide toll-free travel to registered vanpools, they vary in requirements.

Should the Board direct staff to remove the HOV toll-free policies, higher-occupancy vehicles may still be allowed to use the ETLs toll-free with a variety of implementation options, from the stringent federally-registered vanpool, to an Express HOV 5+ policy under which both vanpools and larger carpools would fall. The following are five alternatives to consider when implementing a pilot program, listed from least restrictive to most restrictive:

- **Alternative 1:** All 5+ occupancy vehicles are eligible to receive toll exemption.
- **Alternative 2:** Pay-By-Plate; all 5+ occupancy vehicles with HOV-specific decal are eligible to receive toll exemption. Tolling to be tiered (plate only / FasTrak / decal).
- **Alternative 3:** All 7+ occupancy vehicles are eligible to receive toll exemption.
- **Alternative 4:** All 5+ occupancy vehicles that maintain reporting requirements (to be determined by staff) are eligible to receive toll exemption.
- **Alternative 5:** Only LA Metro Vanpool Program-registered vanpools are eligible to receive toll exemption.

Based on this analysis, **Alternative 1 (all 5+ vehicles toll-exemption eligible)** is the recommended alternative. From a customer perspective, this option offers the highest ease of use, as those customers likely to use the program would probably already own a FasTrak transponder and account in good standing. Alternative 1 follows similar usage of those accounts and transponders to the existing condition, so customers will not have to become accustomed to new processes. Ease of use could be marketed to potentially new ExpressLanes HOV5+ Vehicle Pool as this alternative has the lowest barrier to entry for receiving toll exemption, it has the greatest potential to lower congestion in the ExpressLanes as more travelers may switch to this Express HOV 5+ mode of transport.

Due to its ease of use for the traveling public, this alternative has the highest potential to convert existing 2 and 3+ occupancy vehicles to 5+ occupancy vehicles, thereby reducing congestion for all expressway users.

The core benefit of the future toll scenario is the consistent availability of a faster and more reliable travel option to everyone on the corridor whenever it is needed. While this benefit comes at a travel time cost to the general-purpose lanes, the overall effect is a significant cost savings to the users of the

corridor in the form of improved trip performance and reliability for the trips with the highest value to travelers at all times. Additionally, Metro may employ several mitigation measures to offset any adverse impacts of this policy change, including investment of additional toll revenues, conducting marketing research, and implementing a comprehensive public outreach plan.

Public perception of any change to the toll policy may be a significant issue to existing customers or those considering the use of Metro ExpressLanes, as some customers may be expected to pay for a service they had come to expect, or understood to be free. Introducing a change to this policy will require extensive outreach to all customers of the ExpressLanes, including those that primarily travel on the I-110 corridor, to mitigate the risk of customer confusion when the new policy takes effect. In the 2018 Metro ExpressLanes Customer Survey, the majority of respondents did not support changes to the current toll structure on the I-10 ExpressLanes, though 25% of survey respondents expressed interest in joining vanpools if that were required for toll-free travel. Additionally, based on the surveys conducted, ExpressLanes staff also anticipates a need for focused outreach to low-income segments of the population.

The most significant projected benefits of this pilot are an increase in person throughput on the ExpressLanes by 600 persons daily during the peak periods, and a net economic savings of $3.7 million daily to the users of the corridor in the form of improved trip performance and reliability for the trips with the highest value to travelers at all times. Travel times in the ExpressLanes are also expected to increase by an average of 30 seconds due to queueing at the eastbound end where the ExpressLanes merge back into the general purpose lanes. The pilot is expected to also result in an average increase in toll rates by $0.20/mile during the peak periods, and an average increase in end-to-end travel times in the general purpose lanes by 6 minutes (with more pronounced increases in travel time for the eastbound direction in the PM Peak).

This white paper provides additional detail regarding each of the alternatives and applicable industry standards. The overall white paper is structured as follows:

- Background and Current Policies
- Vanpool Programs in Los Angeles and Other Regions
- Public Outreach
- Operational Issues and Solutions
- Options Analysis
- Recommended Alternative
- Impact Analysis
- Conclusion
- Sources

2. Background and Current Policies

This section provides historical context for the white paper, describing the background of the Metro ExpressLanes and the current tolling policies and issues.

Background of the Metro ExpressLanes

The I-10 High Occupancy Vehicle (HOV) lanes system began operation as the El Monte Busway in 1973. A bus operators job strike in 1974 led to allowing vehicles with a minimum of three occupants to use the Busway for a three-month period. Soon thereafter, a policy was established to allow HOVs with three or more occupants (HOV3+) to use the facility in perpetuity along with buses.

The Metro ExpressLanes Program in Los Angeles County began in 2008, when the U.S. Department of Transportation (U.S. DOT) awarded the Metro-CalTrans partnership, a $210.5 million grant to showcase a system of Express Lanes along the I-110 (Harbor Freeway) and the I-10 (San Bernardino Freeway) corridors. The enabling projects were implemented in 2012 and 2013 respectively, where the (then) HOV lanes were transformed to HOT lanes.

Since its implementation, the Metro ExpressLanes Pilot Program on I-110 and I-10 has yielded a number of operational and mobility benefits. The strategy has provided congestion reduction benefits to SOVs while improving trip reliability for carpoolers and bus riders traveling the Express Lanes. Due to the success of the Metro ExpressLanes Pilot Program, California State Senate Bill 1298 was signed into law in September 2014, granting Metro the authority to conduct, administer, and operate the I-110/I-10 Express Lanes Program indefinitely. HOT lanes allow carpoolers, vanpoolers and eligible clean air vehicles to use the facility at no (or reduced) charge while SOVs are afforded the option to travel the facility by paying a variable toll, thus avoiding traffic congestion that often occur in General Purpose (GP) lanes.

Current Tolling Policies and Issues

Metro currently implements congestion pricing to keep ExpressLanes traffic moving at 45 mph, on average. If average speeds fall below that threshold, the lanes may be switched to “HOV Only” access, prohibiting use of the lanes by toll-paying single-occupant vehicles (SOVs) until speeds improve.

I-10 ExpressLanes: These lanes are operational all day every day. Where not physically separated, the I-10 ExpressLanes are separated from the general-purpose lanes by double solid white lines, for which crossing the lines can result in a citation. A FasTrak or FasTrak Flex transponder (for HOVs) is required for use of the ExpressLanes; without a transponder, the registered owner of the vehicle will receive a notice of violation which carries an additional administrative fee. Two-person carpools (HOV 2) with a FasTrak Flex set to 2 are toll-exempt, except during the peak traffic hours of 5am to 9am and 4pm to 7pm Monday through Friday. Three-plus person carpools (HOV 3+) with a FasTrak Flex set to 3+ are toll exempt at all times (both registered- and non-registered vanpools travel toll-free at all times under this category). Solo drivers pay the posted toll at time of entry.

I-110 ExpressLanes: These lanes are operational all day every day. Where not grade-separated, the I--110 ExpressLanes are separated from the general purpose lanes by double solid white lines, for which crossing can result in a citation. A FasTrak or FasTrak Flex transponder (for HOVs) is required for use of the ExpressLanes; without a transponder, the registered owner of the vehicle will receive a notice of violation, carrying an additional administrative fee. Carpools (HOV 2+) with a FasTrak Flex set to 2 or 3+ are toll exempt at all times (both registered- and non-registered vanpools travel toll-free at all times under the 3+ category). Solo drivers pay the posted toll at time of entry.

3. Vanpool Programs in Los Angeles and Other Regions

The Metro Vanpool Program is a Federally-registered program which offers leased vans through the Enterprise Rideshare and CalVans programs. Any vanpool of three or more people is eligible to travel the ExpressLanes free of charge with a FasTrak Flex set to the 3+ position. Metro Vanpools of five or more regular riders may receive subsidies of up to $400 (not to exceed 50% of lease costs) per eligible vanpool. Subsidy eligibility applies if the following conditions are met:

- Vanpool operates at least 30 miles round-trip and three days each week
- Vanpool vehicle must be designed to seat a minimum of 7 occupants
- Vanpools must begin service with at least 70% of vehicle seats occupied
- Vanpool agreement holder agrees to all terms and conditions of the Metro Vanpool Program.
- Vehicle lease fare is less than or equal to maximum lease authorized.
- Vanpools must end at a work site located within Los Angeles County
- Vehicle selected is less than four years old and/or 200,000 miles
- Vanpool vehicles or passengers receiving financial subsidy and/or incentives from any public funding source, private transit, private shuttles, day care/primary school trips, charter trips, owner-operated vanpools vehicle feeder services, and private vanpools are not eligible to enroll in the Metro Vanpool Program.

The Metro Vanpool Program is largely in line with what other public agencies provide in terms of Federally-registered vanpool programs. Some less formal vanpool programs such as those offered through employers may have higher rider occupancy requirements.

This section provides an overview of the Federal and local regulations related to vanpools, as well as an assessment of how many vanpool programs may potentially travel on the Metro ExpressLanes for commuter trips. In addition, this section provides a description of which express lanes facilities offer toll exemptions to vanpools.

Definitions of Vanpool Programs

The federal government has a distinct definition of a vanpool, which is required to be met by public agencies receiving funds to sponsor vanpools. Metro's Vanpool Program is considered Federally registered; as such, any changes to the ExpressLanes program to incorporate vanpools must also meet the Federal definitions, described below.

Metro Vanpool: For purposes of this white paper, this term refers to vanpools enrolled in Metro's existing Federally-registered vanpool program, which meets the definition of "Vanpool" below.

Vanpool[3] (as defined in the Federal Transit Administration National Transit Database Glossary: A transit mode comprised of vans, small buses and other vehicles operating as a ridesharing arrangement, providing transportation to a group of individuals traveling directly between their homes and a regular destination within the same geographical area. The vehicles shall have a minimum seating capacity of seven persons, including the driver. For inclusion in the National Transit Database (NTD), it

is considered mass transit service if it meets the requirements for public mass transportation and is publicly sponsored. Public mass transportation for vanpool programs must:

- Be open to the public and that any vans that are restricted a priori to particular employers in the public ride-matching service of the vanpool are excluded from the NTD report;
- Be actively engaged in advertising the vanpool service to the public and in matching interested members of the public to vans with available seats;
- Whether operated by a public or private entity, be operated in compliance with the Americans with Disabilities Act of 1990 and implementing regulations at 49 CFR 37.31; and
- Have a record-keeping system in place to meet all NTD Reporting Requirements, consistent with other modes, including collecting and reporting full-allocated operating and capital costs for the service.

Publicly sponsored service is:

- Directly-operated by a public entity;
- Operated by a public entity via a contract for purchased transportation service with a private provider; or
- Operated by a private entity as a grant recipient or sub-recipient from a public entity; or
- Operated by an independent private entity with approval from a public entity that certifies that the vanpool program is helping meet the overall transportation needs of the local urbanized area.

This is referred to as "Federally-registered" throughout this white paper and is a requirement for consideration of federal transit funds.

Casual Vanpool: While there is no standard definition of casual vanpool, for purposes of this white paper, the term shall describe vanpools established through a group of individuals with similar commuting patterns, without federal or state guidelines, and no reporting requirements. For the purpose of some express lane discounts, this could also include large families. The practice of spontaneous carpool "slugging" fits within this definition, though it typically applies to carpools looking to use a two- or three- person occupied vehicle to utilize HOV/HOT lanes.

Private Vanpool: While there is no standard definition of private vanpool, for purposes of this white paper, the term shall describe vanpools operating under an employer's vanpool definition and guidelines. The employer may provide incentives to use the vanpool. Vehicles may be leased or owned by the employer, or by the employee, dependent upon the how the employer has set up its program.

State/Local Vanpool: While there is no standard definition of state/local vanpool, for purposes of this white paper, the term shall describe vanpools operating under a state or local governmental agency's definition of vanpool. The agency sets the rules and guidelines for participation and may offer incentives to use the vanpool. Vehicles may be leased or owned, depending upon the agency, and are simply registered with the agency. Dependent upon the agency's policies, there may be reporting requirements of vanpools.

Vanpool Service[4] (as defined in the Federal Transit Administration NTD Glossary): Transit service

operating as a ride sharing arrangement, providing transportation to a group of individuals traveling directly between their homes and a regular destination within the same geographical area. The vehicles shall have a minimum seating capacity of seven persons, including the driver. Vanpools must also be open to the public and that availability must be made known. This service does not include ridesharing coordination.

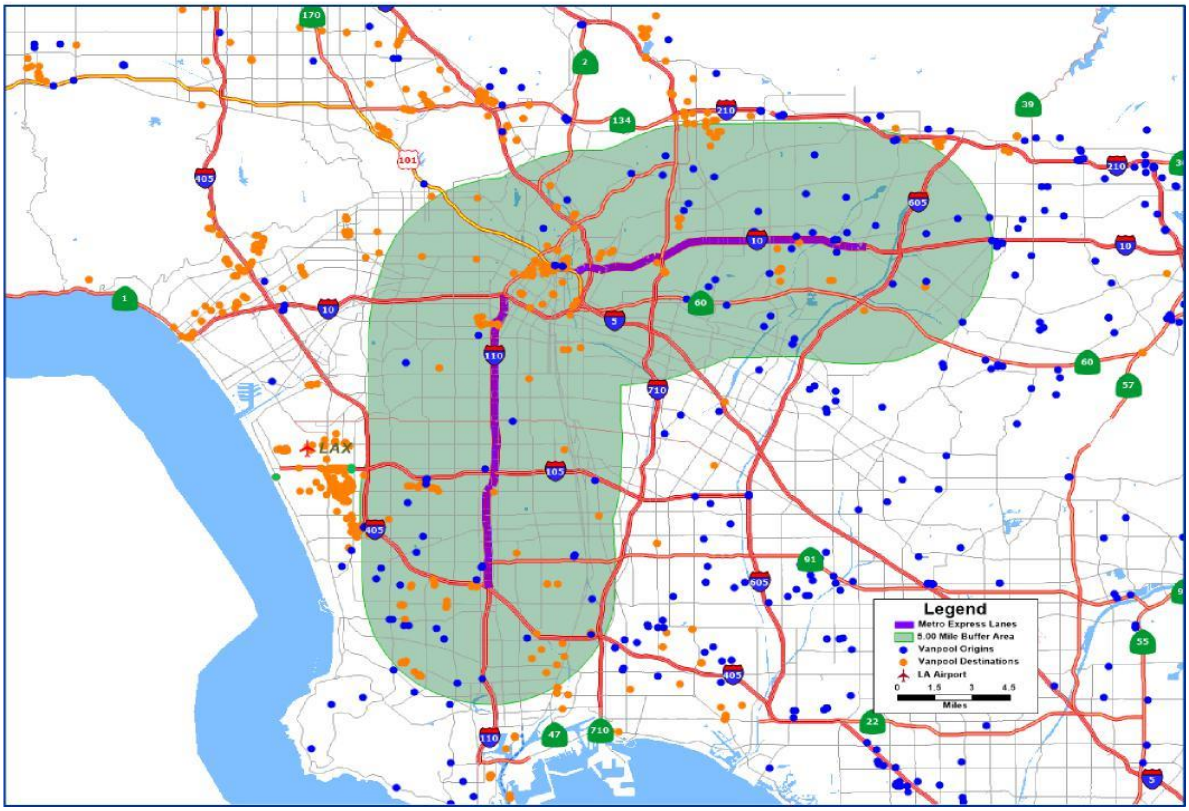
Vanpool Vehicle[5] (as defined in the Federal Transit Administration Van Pool Policy FAQs): Commuter highway vehicle and vanpool vehicle are vehicles with seating capacity for at least six adults (not including the driver); and at least 80% of the mileage use can be reasonably expected to be for the purposes of transporting commuters in connection with travel between their residences and their places of employment.

Vanpool Vehicle[6] (as defined in the California Vehicle Code, Division 1): A "vanpool vehicle" is any motor vehicle, other than a motor-truck or truck tractor, designed for carrying more than 10 but not more than 15 persons including the driver, which is maintained and used primarily for the nonprofit work-related transportation of adults for the purposes of ridesharing.

Current Registered Vanpools in the Metro ExpressLanes

As of June 1, 2018, there were 1,291 registered Metro Vanpool Program vanpools (requiring 7 or more persons). Among them, roughly 89 vanpools start their daily commute within a five-mile buffer area of Metro ExpressLanes (I-110 and I-10), as shown in Figure 1.

Figure 1: Current Metro Vanpool Origins and Destinations



There are about 313 vanpools which end their commute within the five-mile buffer area and 14 vanpools that have both their origin and destination within the buffer area. Therefore, there are a total of 388 vanpools that would potentially use the ExpressLanes on their commute routes, which is approximately 30% of all registered vanpools.

Adjacent to the five-mile buffer area of the ExpressLanes, there are a few locations that seem to attract significant vanpool demand. One is the LA International Airport/El Segundo area, which contains about 316 vanpool destinations, and another is the Santa Monica/Beverly Hills area, which has about 138 vanpool destinations. These 454 vanpools are also potential users of the ExpressLanes.

Based on this preliminary analysis, there are a total of approximately 842 vanpools which could potentially travel on the Metro ExpressLanes for commuter trips (defined as being two trips per weekday). That equates to 65% of all vanpools enrolled with the Metro Vanpool Program.

Note: this was a high-level GIS analysis performed. As such, these numbers may underrepresent vanpools using the ExpressLanes since they may begin or end their trips outside of the five-mile buffer established for this exercise. Also, this analysis did not take into consideration other registered vanpool program participants.

Other Express Lane Facilities Which Offer Toll Exemptions to Vanpools

Several other agencies across the U.S. have incorporated vanpools into their tolling policies. Table 1 provides an overview of existing ETL facilities that allow either registered or unregistered vanpools to travel toll-free.

Table 1: Existing ETL Facilities Offering Toll Exemption to Vanpools

Express Lane Facility	Location		Registering Agency	Registration Level Required to Achieve Exemption	Occupancy Declaration		Minimum Occupancy	Occupancy Enforcement
	Region	State			Type	Methodology		
I-10 & I-110 ExpressLanes[7]	Los Angeles	CA	Registration not required for toll exemption	-	Active	FasTrak® Flex set at 3+	3 (exempt under HOV 3+ policy)	Law enforcement observation
State-owned Toll Bridges[8]	San Francisco	CA	511.org	Federal		Registration with 511.org, FasTrak® Flex set at 3+ and use of designated carpool lanes	11	Law enforcement observation
I-405 Express Lanes[9]	Seattle	WA	Washington Department of Transportation (WSDOT)	Federal	Active	Flex Pass set to HOV	5	Law enforcement observation
SR-167 HOT Lanes[10]	Seattle	WA	WSDOT	Federal	Passive or Active	Qualified number of passengers in vehicle or set Flex Pass to HOV if present	5	Law enforcement observation
SR-520 Bridge[11]	Seattle	WA	WSDOT	Federal	Passive	Qualified number of passengers in vehicle	5	Law enforcement observation
MoPac Express Lanes[12]	Austin	TX	Capital Metro	Federal	Passive	TxTag registered to vanpool vehicle	5	Law enforcement observation
I-75 South Metro Express Lanes[13]	Atlanta	GA	State Road and Tollway Authority (SRTA)	Federal	Passive	Peach Pass registered to vanpool vehicle	5	Law enforcement observation
I-85 Express Lanes[14]	Atlanta	GA	SRTA	Federal	Active	Peach Pass registered to vanpool vehicle and pre-travel HOV declaration via Peach Pass GO! app or website	5	Law enforcement observation w/ assistance from automatic license plate readers
I-95 Express Lanes[15]	Miami	FL	South Florida Vanpool	Federal	Passive	95 Express decal on windshield of registered vehicle (must shield SunPass transponder if present)	6	Law enforcement observation
I-95 & I-495 Express Lanes[16]	Northern Virginia	VA	Registration not required for toll exemption	-	Active	E-ZPass Flex set to HOV	3 (exempt under HOV 3+ policy)	Law enforcement observation
I-66 Express Lanes[17]	Arlington	VA	Registration not required for toll exemption	-	Active	E-ZPass Flex set to HOV	2 (exempt under HOV 2+ policy)	Law enforcement observation

As shown in Table 1, these toll facility operators have very similar policies regarding toll exemptions for vanpools. The primary difference may be the level of registration required to claim a toll exemption; the majority of operators require enrollment through some vanpool program, most of which are Federally-registered. Our existing ExpressLanes policy is considerably more inclusive; allowing all HOV 3+ vehicles with the FasTrak Flex set to 3+ a toll exemption.

One standout among the policies is the use of a decal indicating HOV status on the 95 Express Lanes near Miami. Vanpools and HOV 3+ carpools wishing to obtain a toll exemption must register the South Florida Commuter Solutions (SFCS) organization to receive a special decal indicating HOV status. The sticker must be placed in the windshield of the vehicle and the user must shield any SunPass transponder to avoid being charged a toll. The transaction is then processed as an image-based transaction, the review process for which will indicate the presence of an HOV decal, and thus, a non-tolled transaction. The methods through which SCFS has chosen to verify enrollees may be much more labor-intensive than the Board wishes to pursue, but could be alleviated through implementation of any of the ridesharing smartphone apps discussed later in this white paper:

- Users call SFCS to initiate enrollment process
- Call center collects information
  - Address of each participant (must be unique to each user)
  - Employers, work hours, origin and destination, and timing for each user
- Call center then contacts employer for each user to verify this information
- Call center verifies routing to ensure it is reasonable
- Call center issues decal and registers the license plate with SunPass[18]

Many ETL operators offer some sort of HOV toll-exemption policy (typically HOV 3+) under which vehicles of five or more occupants would qualify for toll-free travel, if not under an expressly stated vanpool policy. These policies would include vanpools along the entire spectrum of registration requirements.

Table 2 below provides an overview of vanpool programs which operate in the previous ETLs.

Table 2: Vanpool Programs Near ExpressLanes Facilities

Vanpool Program	Location		Registering Agency	Lease or Own Vehicles	Vanpool Registration Level	Minimum Occupancy	Approximate No. of Vanpools in Program	Relevant Express Lanes
	Region	State						
Metro Vanpool Program[19]	Los Angeles	CA	LA Metro	Lease	Federal	5	1,291	I-10 & I-110 ExpressLanes
OCTA Vanpool Program[20]	Orange County	CA	Orange County Transportation Authority	Lease	Federal	5	530	91 Express Lanes
SANDAG Vanpool Program[21]	San Diego	CA	San Diego Association of Governments	Lease	Federal	7	540	I-15 Express Lanes
King County Commuter Van Program[22]	Seattle	WA	King County Metro Transit	Lease	Federal	5	2,400	SR-167 HOT Lanes & I-405 Express Lanes
CapMetro Rideshare Program[23]	Austin	TX	Capital Metropolitan Transportation Authority	Lease	Federal	5	200	MoPac Express Lanes
DART Vanpool[24]	Dallas	TX	Dallas Area Rapid Transit	Lease	Federal	6	200	LBJ Express, North Tarrant Express, DFW Connector, I-30 Express Lanes, I-35E Express Lanes, SH-114 Express Lanes, 635 East HOV/Express Lanes
METRO STAR Vanpool[25]	Houston	TX	Metropolitan Transit Authority of Harris County	Lease	Federal	5	400	US 290 Northwest, US 59 North, US 59 South, I-45 North, I-45 South, I-10 Katy Managed Lanes
SRTA Vanpool[26]	Atlanta	GA	State Road and Tollway Authority	Lease	Federal	5	-	I-75 South Metro Express Lanes & I-85 Express Lanes
South Florida Vanpool Program[27]	Miami	FL	South Florida Vanpool Program (Miami-Dade County Metropolitan Planning Organization)	Lease	Federal	6	250	I-95 Express Lanes

Vanpool Program	Location		Registering Agency	Lease or Own Vehicles	Vanpool Registration Level	Minimum Occupancy	Approximate No. of Vanpools in Program	Relevant Express Lanes
	Region	State						
Vanpool Alliance Vanpool Program[28]	Northern VA	VA	Vanpool Alliance (public/private partnership)	Lease or Own	State	7	-	I-95 & I-495 Express Lanes
UC Los Angeles[29]	Los Angeles	CA	UCLA	Lease or Own	State	7	150	I-10 & I-110 ExpressLanes
UC Davis - GoVanpool[30]	Davis	CA	UC Davis	Own	State	7	2	None in the area
Stanford University[31]	Stanford	CA	Stanford University	Own	Private (employees/ students only)	5	20	State-owned Toll Bridges in Bay Area
State of California[32]	Statewide	CA	State of California	Lease or Own	State	7	-	I-10 & I-110 ExpressLanes; 91 Express Lanes, state-owned toll bridges, I-15 Express Lanes
City of Los Angeles Vanpool Program[33]	Los Angeles	CA	City of Los Angeles	Lease	Local	8	110	I-10 & I-110 ExpressLanes
Emory University[34]	Atlanta	GA	Emory University	Lease	Private (employees/ students only)	7	11	I-75 South Metro Express Lanes & I-85 Express Lanes

4. Public Outreach

In the 2018 ExpressLanes Customer Survey, the majority of respondents did not support changes to the current toll structure on the I-10 ExpressLanes, though 25% of survey respondents expressed interest in joining vanpools if that were required for toll-free travel. It should be noted that this survey was distributed to current customers only, and is not necessarily a representative sample of all corridor users.

To address the Solis Amendment regarding community outreach to low-income commuters, 510 persons were approached at two outreach events in El Monte and Pomona as well as the Cal State LA Station/bus stop, USC hospital, Union Station and retail and grocery centers along the I-10 corridor in July 2018 to collect their opinions and feedback. Surveys were made available in English, Spanish, and Mandarin. The survey included screening questions to focus on those respondents that traveled on the I-10 ExpressLanes at least once a month and had an income that qualifies for the Low Income Assistance Program (i.e., an income that does not exceed twice the federal poverty level). The investigators attempted to target participation by various ethnic groups according to the racial distribution of the population around I-10. The collected responses included 61% from Latinos/Hispanics, 17% from African Americans, 11% from Caucasians, 8% from Asians, and 3% from other races. The findings from this low-income outreach effort are summarized below, with a total of 479 surveys completed altogether:

- Very few have ever used a vanpool on the I-10 ExpressLanes,
- Approximately 30% would continue to pay to drive alone or carpool in the ExpressLanes under the proposed policy,
- Approximately 40% would shift to the general purpose lanes under the proposed policy,
- Caucasians were the most likely to switch to vanpools under the conditions of the proposed pilot.
- African Americans, Latinos/Hispanics, and Asians were the most likely racial groups to switch to transit under the conditions of the proposed pilot.

Educational Outreach

Outreach will be a critical step toward a successful implementation of this proposed pilot. Adoption of a new policy will require a proactive and aggressive regional campaign to educate existing and new customers. For as long as the I-10 ExpressLanes have been in existence, the toll policy has granted exemption for both HOV3+ vehicles all day and HOV2s vehicles during off-peak periods. Introducing a change to this policy will require extensive outreach to all customers of the ExpressLanes, including those that primarily travel on the I-110 corridor, to mitigate the risk of customer confusion when the new policy takes effect.

Based on the surveys conducted in July 2018, ExpressLanes staff also anticipates a need for focused outreach to low-income segments of the population regarding the following topics:

1) The benefits of using transit on the ExpressLanes
2) Ongoing education and outreach regarding the Low Income Assistance Plan
3) Information about participation in vanpools.

Additional Data Needs

One important aspect of any feasibility analysis is the identification of additional data needs that still remain. For this proposed pilot, these needs include the following:

- Collaborate with transit providers regarding the potential effects of this policy on their operations as well as any needed modifications.
- Conduct additional market research regarding the barriers to toll lane use among low-income stakeholders, barriers to transit use among certain races, and barriers to carpooling among certain races.
- Assess the impact of this policy on ExpressLanes usage by low-income customers through focus groups and surveys to further inform any necessary policy improvements.
- Perform additional investigation into the optimal method for incentivizing vanpool utilization on the

corridor, and for handling vanpool toll exemptions.

5. Operational Issues and Solutions

Implementing this complex change in toll policy requires an analysis of all possible operational impacts. In addition to considering the impact to vanpools, the Board should consider the following issues which may impact the Metro ExpressLanes program:

- Public Perception
- Use of Transponders
- Occupancy Enforcement
- Equity Among All Travelers

This section provides a description of each of these operational issues and potential solutions to address these issues.

Public Perception

Public perception of any change to the toll policy may be a significant issue to existing customers, as some customers may be expected to pay for a service they had come to expect as free. To counter this perception, the pilot would likely include a public education campaign months before implementation and continuing for some time after the rollout of the revised policy to inform the public of what they can expect with the operation of the ExpressLanes and how it benefits both tolled- and non-tolled users.

Agencies have found that extensive public outreach is helpful in maintaining efficient and legal use of express lanes. For instance:

1. **Georgia:** Before converting I-85 HOV lanes to HOT lanes in Georgia, SRTA held more than 120 public outreach, community meetings or events regarding the project. Additionally, they held multiple media briefings, including some special sessions for area traffic reporters to help spread the word about the upcoming changes to the HOV lanes. This public education push did not end upon conversion of the lanes; rather SRTA kept up a public inquiry task force and implemented an online comments section on their website to ensure the public's voices were being heard. Twelve months after the conversion to HOT lanes, the customer satisfaction rating was at 88%; evidence that the considerable public outreach program was effective.[35] (education – success story)
2. **Minnesota:** When the Minnesota Department of Transportation (MnDOT) decided to implement a value-pricing strategy on I-394 west of Minneapolis, they found that having local political champions and concise public communications were key to initial customer acceptance of the project. The vocal support of local politicians made the project more palatable to their constituents, and clear communications on the benefits to both transit-and non-transit users helped gain additional public acceptance of the project.[36] (MnDOT education)

Upon implementation of the revised toll policy, staff will consider a grace period of several weeks during which occupancy violators may have violation fees reduced or eliminated.

Use of Transponders

As shown in Table 1, different agencies employ different techniques to address the use of the transponders for registered and/or non-registered vanpools. For instance:

- A regular (non-switchable) transponder can be used in conjunction with an HOV declaration app or website, as discussed later in the Occupancy Enforcement section. In this case, a vanpool/carpool vehicle is provided a transponder, and the occupants would be responsible for logging into the system and declaring HOV status ahead of any trip on the ExpressLanes.
- A switchable transponder is another solution for occupancy declaration, and the option which we currently use. In the case of our proposed shift to registered vanpools receiving a toll exemption, just a single HOV or vanpool switch option would be required of the transponder, as HOV options would be reduced to the single vanpool option. The current transponder could still be used, however, with toll algorithms revised to accept both the 2 and 3+ settings as the same category, as the HOV 2 policy would be eliminated.
- The issuance of a special decal (similar to the 95 Express decal in South Florida, discussed previously in the *Vanpool Programs in Los Angeles and Other Regions* section) to vanpools/carpools could simplify the implementation of a toll policy revision. A decal leaves the tolling agency only to verify enrollment and enforce occupancy requirements through the back office. This does require any other FasTrak or FasTrak Flex transponder to be obscured to avoid charges when using the decal to obtain a toll exemption.
- Image-based pay-by-plate (PBP) tolling is another option by which we could allow registered vanpools a toll exemption, nullifying the need for a transponder. This would require the vanpool vehicle's license plate be registered with us so that toll charges are not applied. All other vehicles would be charged as applicable and invoiced at the vehicle's Department of Motor Vehicles-registered address.

Occupancy Enforcement

An ongoing concern for any HOV toll exemption or discount policy is the enforcement of the number of occupants in vehicles claiming HOV status. As tolls rise, the impetus for occupancy violators to use the lanes as an exempt vehicle without meeting occupancy requirements increases, thereby, increasing the risk of traffic flow degradation as well as introducing a revenue risk where vehicles other than HOVs are tolled.

A 2015 study performed for the Utah Department of Transportation, examining performance issues on HOV lanes, found occupancy violation rates of 12-15% in the SR-167 HOT lanes in Washington, and roughly 28% in the I-66 Express Lanes in northern Virginia. By comparison, recent independent occupancy validations undertaken by a consultant team showed that the I-10 ExpressLanes experienced occupancy violation rates ranging from 28-38%, while the I-110

ExpressLanes experienced rates of 19-37% .

Metro staff have also investigated the various means by which an HOV using an express lane can indicate to the lane operator their HOV status for purposes of receiving a discounted toll rate on the facility. At present there are two basic means of doing so: Passive and Active.

- The "**passive**" means is by the simple procedure of fulfilling the requirements of the facility operator's minimum occupancy requirement, generally two persons in a vehicle (HOV 2) or three or more persons in a vehicle (HOV 3+) and driving on the facility.
- The "**active**" means may be either by having the minimum required number of people and a transponder in the vehicle or, having the minimum required number of people in the vehicle and giving advance notification to the facility operator either by pre-registering or using a smartphone app.

In some cases, either the "passive" or "active" method can be used by the driver if the facility operator utilizes both functionalities.

Travelers who commit to using an Express HOV 5+ method of travel may sometimes face the issue of not having enough passengers to meet occupancy requirements due to a co-traveler's absence. To best maintain an equitable and efficient system, the toll operator should implement an either/or policy to address this issue. Simply put, vehicles that typically meet the occupancy requirement, but may not on a given day due to a passenger absence, should not be allowed the toll exemption on those days. This could be addressed with any of the occupancy enforcement methods described below. This differs from Federally-registered vanpool programs such as the Metro Vanpool Program, which typically require a 70% to 80% occupancy rate over a 30-day period, allowing for some vacancies while still obtaining the toll exemption.

The following subsections describe various ways Metro may enforce occupancy requirements.

Enforcement Method #1: Visual Enforcement

Visual enforcement is the primary route of enforcement for most agencies, through either human confirmation at physical HOV lane declaration points, or via the toll system notifying officials of vehicle tag status in tandem with human confirmation of that status. Contracts are often held with state police for occupancy and traffic enforcement, while some agencies use their own traffic enforcement division for these tasks.

Enforcement Method #2: Automated Passenger Detection Systems

As visual technology advances, several automated passenger detection systems have come to market. This section describes the outcomes achieved by systems that have been tested by LACMTA, Caltrans, and New York MTA B&T.

LACMTA: Metro performed a test demonstration of an Automated Occupancy Detection System by Xerox (now Conduent) in October 2015. The test captured 14,093 vehicles over a 24-hour period, and was successful at properly identifying SOVs 94.1% of the time, for usable

images. When combined with supplemental manual image review, the researchers concluded that an accuracy of 99.9% might be achievable. As a result of this test, the Metro Board of Directors approved an extended Proof of Concept deployment of the Conduent Occupancy Detection System at high-risk locations along the I-10 and I-110 ExpressLanes in January 2018. Design of the system was completed and approved in September 2018, and full deployment is anticipated for completion in early 2019.

Caltrans: The California Department of Transportation made a pilot run of Conduent's Vehicle Passenger Detection System (VPDS) along northbound Interstate 5 in early 2015. Results came in at roughly 95% accuracy for the VPDS versus roughly 36% for human detection accuracy.

New York: Metropolitan Transportation Authority Bridges and Tunnels (MTA B&T) recently converted to All Electronic Tolling (AET) on the Verrazano Narrows Bridge (VNB) in New York City. As part of the conversion of the toll collection system to AET, an occupancy detection system (ODS) developed by Conduent was put into place to verify eligibility for the Staten Island Resident Carpool Discount. This system not only detects and verifies vehicle occupancy but is an integral part of the toll collection infrastructure. As the VNB AET system is integrated, it is required to match each transaction from each element of the system (i.e., occupancy and toll collection). There have been reported problems with the interface between the ODS and toll collector, but this should not discourage their use.

The Metropolitan Transportation Commission (MTC): The Metropolitan Transportation Commission (MTC) recently conducted a three-month pilot to assess how accurate automated Vehicle Occupancy Detection (VOD) camera systems are at determining vehicle occupancy. The MTC's goal is to improve HOV lane performance to increase person-throughput, In July 2017, the MTC's Operations Committee approved a pre-qualified bench of VOD system vendors for the purposes of testing technologies in the Bay Area. Vendors included: Conduent, Transcore, and Indra. Vendors piloted their existing systems on I-880 with results which indicated that overall system accuracy rates, as determined and reported by the vendors, ranged between 78% and 88% consistent with what was determined independently through a manual image review of 440 images per vendor (77% to 89%). The MTC considers the system accuracy rate to be low and suggests that the technology is not ready for use in issuing automated warnings or citations in a full-scale deployment on Bay Area. Concerns regarding open access to express and HOV lanes and the need for a robust network of VOD equipment (one or more per mile, coupled with capital cost for system development and integration, on-site equipment/infrastructure, power and communications, the annual operation could be significant..

Additionally, MTC is considering a new pilot whereby smartphone app-based occupancy verification systems are being tested. The systems pair and count individual smartphones in the vehicle providing a verified count of passengers that can be used to determine whether vehicles meet the lane occupancy requirement. Theoretically, MTC reports, data from the systems could be paired with toll tags or license plate camera data to charge those that mis-represent occupancy a toll in express lanes or issue an automated citation. Challenges include agencies agreeing on how to proceed and enforcement roles, California privacy laws, and funding.

Enforcement Method #3: Mobile Phone App Occupancy Declaration

Several agencies have developed mobile-device apps or websites through which HOV travelers must declare their status before travelling on ETLs. These are typically used in conjunction with non-switchable toll transponders but could be explored as an option with switchable transponders as well. The private sector has likewise come up with solutions for HOV occupancy declaration and verification. The following are a few examples of mobile phone app occupancy detection systems:

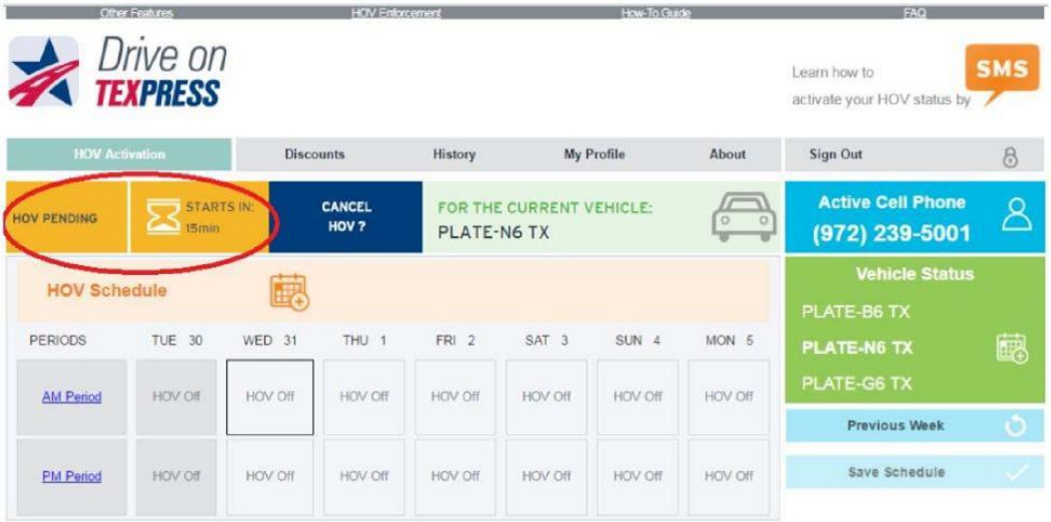
- **Georgia (Peach Pass GO!)**: Travelers must register with the app or associated website and input the correct setting (Toll/Non-Toll(HOV) 15 minutes prior to travel in express lanes to receive HOV discounts. Similar features relevant to our proposed vanpool/carpool toll policy could be modified and added to the Go Metro app, or could be developed as a stand-alone app.

Figure 2: Peach Pass GO! Mobile App

Source: http://www.peachpass.com

- **Texas (DriveOn TEXpress)**: Travelers must register with the app or associated website and input the correct setting (Toll/HOV) 15 minutes prior to travel in TEXpress lanes to receive HOV discounts. Vanpools travel toll-free as HOV 2+ under the TEXpress lanes toll policy, and therefore vanpools would need to activate their HOV status via the app or associated website prior to travel. Similar features relevant to the proposed vanpool/carpool toll policy could be modified and added to the Go Metro app, or could be developed as a stand-alone app.

Figure 3: DriveOn TEXpress Dashboard



Source: http://www.texpresslanes.com

Figure 4: RideFlag Mobile App

- **RideFlag:** RideFlag is a dynamic carpooling mobile app, allowing registered drivers and riders to connect for future- or trips-in-progress. RideFlag has developed an occupancy verification system which can communicate with toll agencies to declare HOV status while eliminating the need for active transponder management by the HOV occupants. The RideFlag system contains and shares vehicle and occupant registration information with the toll agency. All occupants of an HOV must have the app open during a trip to verify occupancy. Such a system could be used on our ExpressLanes to verify vehicle occupancy.
- **Carma Share**[37]: Carma has patented Verified Ride occupancy-verification software which monitors the continuous coordinated proximity of an in-car device to an occupant device. Carma uses this approach to automatically verify vehicle occupancy using

Source: http://www.rideflag.com

smartphones and beacons for enabling high-occupancy toll discounts. Toll agencies may partner with Carma to use the software to verify occupancy in HOV lanes. The Carma Share application could be used turnkey in conjunction with our proposed toll policy revision in verifying occupancy for vehicles.

These technological solutions may be seen to have a prohibitively high initial cost when implemented solely for use in a pilot study. The manufacturers of these technologies may be willing to loan or reduce the cost of their property when used as part of a pilot program, hopeful that the client will appreciate the technology and convert to a full sale.

Significantly increasing the occurrence of visual enforcement along the ExpressLanes by the California Highway Patrol (CHP) could be used as a lower-cost solution relative to the higher initial cost of the technological solutions. Given the relatively small number of Express HOV 5+ vehicles to be verified, it could be much less intensive to implement from an agency side, and less confusing & invasive for the traveling public. This option might make more sense during a pilot study; however, the Board should be willing to accept the costs associated with sustained increased visual enforcement by the CHP should it be enacted long-term.

Equity Among All Travelers

It has been shown that express lanes in general improve traveling conditions for all users, not just those using the express lanes.[38] Likewise, the proposed toll policy revision would not affect any one cohort of traveler more than another, and in fact, could provide more value to all travelers. A vanpool/carpool program could result in a decrease of numbers of vehicles on the corridor, as some HOV 2 and 3+ travelers would seek to upgrade to a vanpool/carpool to take advantage of the toll exemption. Other equity concerns include:

- Bias against children is a non-issue, as they may be counted toward the occupancy of a vanpool/carpool programs if they occupy their own seat.
- Low-income individuals are afforded the opportunity to save money on their commute by ridesharing, especially when available subsidies are factored in. When not ridesharing, these individuals still benefit from decreased congestion because of those who do. We currently have a Low-Income Assistance Plan in place.
- Individuals without smart phones could enroll in a vanpool/carpool program manually; however, there is potential for bias if the occupancy verification system is mobile app-based, as those individuals could have trouble verifying their presence in a vanpool/carpool. A possible solution to this could be an app that allows for multiple logins on one device (though this opens the possibility of abuse).

6. Options Analysis

Should the Board direct staff to remove the HOV toll-free policies, higher-occupancy vehicles may still be allowed to use the ETLs toll-free with a variety of implementation options, from the stringent federally-registered vanpool, to an Express HOV 5+ policy under which both vanpools and larger carpools would fall. The following are five alternatives to consider when implementing a pilot program, listed from least restrictive to most restrictive:

- **Alternative 1:** All 5+ occupancy vehicles are eligible to receive toll exemption.
- **Alternative 2:** Pay-By-Plate; all 5+ occupancy vehicles with HOV-specific decal are eligible to receive toll exemption. Tolling to be tiered (plate only / FasTrak / decal).
- **Alternative 3:** All 7+ occupancy vehicles are eligible to receive toll exemption.
- **Alternative 4:** All 5+ occupancy vehicles that maintain reporting requirements (to be determined by staff) are eligible to receive toll exemption.
- **Alternative 5:** Only LA Metro Vanpool Program-registered vanpools are eligible to receive toll exemption.

The following subsections provide additional detail about each option, including associated impacts.

Alternative 1: All 5+ occupancy vehicles are eligible to receive toll exemption.

This alternative would allow for any carpools of five or greater occupancy to receive the toll exemption with HOV 5+ declaration via a mobile app or website. There would be no other HOV discount. A FasTrak account and transponder would be required of all vehicles using the ExpressLanes, just as it is now. Assuming the use of the current iteration of FasTrak transponder, the lane system would be configured as such that any transponders set at the 2 or 3+ setting would be indicating five or greater occupancy. This setup is very similar to the current system, with the revision of the definitions of the 2 and 3+ settings. An occupancy declaration app could be used with this Alternative.

Alternative 1 has the highest ease of use for the participants; as such, it is assumed this could cause the greatest migration to vehicles with five or more occupants. This alternative would have moderate impacts on the back office, as those tags declaring five-plus occupancy would need to be read as valid in the lane, and toll-exempt in the back office, while those with less than five occupants would be read as valid in the lane and tolled in the back. Additionally, should an occupancy declaration app be used, back office with that app will be required. As this alternative does not necessitate a formal agreement among HOV occupants, but is stricter in its definition of HOV, casual HOVs are implicitly encouraged. Again, contrary to how many subsidized vanpool programs operate with their 30-day-average-ridership, an HOV 5+ option would require those seeking toll exemption to have the required minimum of five occupants for every trip.

***Associated Impacts**: Increased temporary call center and walk-in center staffing might be required. This temporary staffing would be necessary, especially at the announcement of the policy change and then again at the implementation of the 5+ program. It is anticipated that a*

sliding staffing scale for ramp-up and implementation would be needed to address potential spikes in customer contacts. Approximately five added temporary FTEs may be required on the phones and an added temporary full-time employee (FTE) at the walk-in center. Additionally, training would be required for all Customer Service Center (CSC) staff on the new policy, with scripting for handling customer complaints regarding the changes in current pricing resulting from the 5+ policy. An added temporary FTE may also be required to handle increases in service requests for customers choosing to un-enroll from the ExpressLanes FasTrak program. A set of new mailings, emails, outreach communications and roadside messaging should be considered as part of a comprehensive Communications Plan to notify the motoring public of the policy changes. Use of website messaging should be developed and implemented at both the public non-secured web pages, as well as the secured customer portion of the website. Lastly, modifications to the lane systems, algorithms and back office systems would likely be required to accommodate the 5+ policy.

There could also be long-term customer service staffing impacts related to occupancy-violation processing and customer complaint resolutions associated with the increase in price modifications from the new enforcement systems.

Alternative 2: Pay-By-Plate; all 5+ occupancy vehicles with HOV-specific decal are eligible to receive toll exemption. Tolling to be tiered (plate only / FasTrak / decal).

Alternative 2 utilizes a Pay-By-Plate (PBP) and HOV decal system, negating the requirement for vehicles to have a transponder to use the ExpressLanes. This is similar to the HOV decal program in use for the 95 Express in Florida. Toll exemption would be achieved through 5+ occupancy declaration and the display of an HOV decal obtained through an opt-in process with Metro. This alternative assumes the use of an occupancy declaration app for those travelers desiring the exemption. A tiered tolling system could be utilized with this alternative, charging PBP users the highest rates while giving FasTrak account holders a discount from that rate, and allowing HOV decal users a toll exemption as appropriate. HOV decal users would be charged the appropriate market rate for travel made while not meeting the 5+ occupancy requirement. FasTrak settings could be used much like they are now, but with the 2 or 3+ settings indicating 5+ occupancy; non 5+ occupancy vehicles could use the 1 setting to obtain the discounted toll rate. This alternative provides for very high ease-of-use to the customer; as such, improvements in ExpressLanes congestion may not be realized, as more non-FasTrak users may opt to use those lanes. As this alternative does not necessitate a formal agreement among occupants, the occurrence of casual carpooling could be increased as a result of this alternative's implementation. Since this alternative uses a stricter definition of HOV with the additional inclusion of the HOV-indicating decal, casual HOVs are implicitly encouraged, though perhaps not to the extent as seen with Alternative 1.

Associated Impacts: *Increased temporary call center and walk-in center staffing might be required. This temporary staffing would be necessary, especially at the announcement of the policy change and then again at the implementation of the program. It is anticipated that a sliding staffing scale for ramp-up and implementation would be needed to address potential*

spikes in customer contacts. Approximately five added temporary FTEs may be required on the phones and an added temporary FTE at the walk-in center. Additionally, training would be required for all CSC staff on the new policy, with scripting for handling customer complaints regarding the changes in current pricing resulting from the new PBP policy. An added temporary FTE may also be required to handle increases in service requests for customers choosing to unenroll from the ExpressLanes FasTrak program and opt into the PBP process. A set of new mailings, emails, outreach communications and roadside messaging should be considered as part of a comprehensive Communications Plan to notify the motoring public of the policy changes. Use of website messaging should be developed and implemented at both the public non-secured web pages, as well as the secured customer portion of the website. Modifications to the lane systems, algorithms and back office systems would likely be required to accommodate the new policy.

This alternative would have moderate impacts on the back office, as those vehicles declaring 5+ occupancy would need visual confirmation of a decal, and toll algorithms would need to be adjusted removing PBP customers from the toll violators list, until such time that those transactions go unpaid. As an occupancy declaration app or website will likely be used, back office integration with that app/website will be required. The biggest impact to the lane system would be the introduction of the image-based systems to not only identify the license plate, but also the HOV decal.

There could also be long-term customer service staffing impacts related to occupancy-violation processing, the HOV decal declaration identification and customer complaint resolutions associated with the increase in price modifications from the new enforcement systems.

Alternative 3: All 7+ occupancy vehicles are eligible to receive toll exemption.

Alternative 3 would allow registered and non-registered vanpools of 7+ occupancy to receive the toll exemption with HOV 7+ declaration via a mobile app or website. There would be no other HOV discount. A FasTrak account and transponder would be required of all vehicles, just as it is now. In this case, the lane system would be configured as such that any transponders set at the 2 or 3+ setting would be indicating seven or greater occupancy; allowing for the current style of transponder to be used going forward. This setup is very similar to the current system, with the revision of the definitions of the 2 and 3+ settings. An occupancy verification system is essential as part of this alternative. This option is more restrictive than Alternative 1, while still being easy to obtain for those willing to switch to a vehicle carrying 7+ passengers. This alternative would have moderate impacts on the back office, as those tags declaring 7+ occupancy would need to be read as valid in the lane, and toll-exempt in the back office, while those with less than seven occupants would be read as valid in the lane and tolled in the back office. Additionally, should an occupancy declaration app or website be used, back office integration with that app/website will be required. The biggest impact to the lane system would be the changes to the algorithm and its interface with the back office and information signs on the road. Similar to Alternative 1, this alternative implicitly encourages casual HOVs, but with its higher occupancy requirement will likely see lower casual vanpool numbers than that will Alternative 1.

***Associated Impacts**: Increased temporary call center and walk-in center staffing might be required. This temporary staffing would be necessary, especially at the announcement of the policy change and then again at the implementation of the 7+ program. It is anticipated that a sliding staffing scale for ramp-up and implementation would be needed to address potential spikes in customer contacts. Approximately five added temporary FTEs may be required on the phones and an added temporary FTE at the walk-in center. Additionally, training would be required for all CSC staff on the new policy, with scripting for handling customer complaints regarding the changes in current pricing resulting from the 7+ policy. An added temporary FTE may also be required to handle increases in service requests for customers choosing to withdraw from the ExpressLanes FasTrak program. A set of new mailings, emails, outreach communications and roadside messaging should be considered as part of a comprehensive Communications Plan to notify the motoring public of the policy changes. Use of website messaging should be developed and implemented at both the public non-secured web pages, as well as the secured customer portion of the website. Lastly, modifications to the lane systems, algorithms and back office systems would likely be required to accommodate the 7+ policy.*

There could also be long-term customer service staffing impacts related to occupancy-violation processing and customer complaint resolutions associated with the increase in price modifications from the new enforcement systems.

Alternative 4: All 5+ occupancy vehicles that maintain reporting requirements (to be determined by staff) are eligible to receive toll exemption.

This alternative would allow registered and non-registered vanpools or carpools of 5+ occupancy to receive the toll exemption with HOV 5+ declaration via a mobile app or website, and while meeting reporting requirements established by the Board. There would be no other HOV discount. Such reporting metrics could be the same or very similar to those required of current vanpools registered through the Metro Vanpool Program and would help staff to monitor the program. A FasTrak account and transponder would be required of all vehicles, just as it is now. In this case, the lane system would be configured as such that any transponders set at the 2 or 3+ setting would be indicating five or greater occupancy; allowing for the current style of transponder to be used going forward. This setup is very similar to the current system, with the revision of the definitions of the 2 and 3+ settings and the introduction of reporting requirements. As with Alternative 3, an occupancy verification system is an essential part of this alternative. This option is similar to, while being more restrictive than the previous Alternative 3. The ease of use for occupants might initially seem low, but would become routine after time. This alternative would have moderate impacts on the back office, as those tags declaring 5+five-plus occupancy would need to be read as valid in the lane, and toll-exempt in the back office, while those with less than five occupants would be read as valid in the lane and tolled in the back office. Additionally, should an occupancy declaration app/website be used, back office integration with that app will be required. The biggest impact to the lane system would be the changes to the algorithm and its interface with the lanes, back office and roadside signs. It is assumed that this alternative, with its introduction of reporting requirements to staff, would likely not see as great an increase in casual HOVs largely due to the fact that these reporting requirements may be seen as too laborious or intrusive to potential HOV occupants.

Associated Impacts: *Increased temporary call center and walk-in center staffing might be required. This temporary staffing would be necessary, especially at the announcement of the policy change and then again at the implementation of the 5+ program with reporting elements. It is anticipated that a sliding staffing scale for ramp-up and implementation would be needed to address potential spikes in customer contacts. Approximately five added temporary FTEs may be required on the phones and an added temporary FTE at the walk-in center. Additionally, training would be required for all CSC staff on the new policy, with scripting for handling customer complaints regarding the changes in current pricing resulting from the 5+ and reporting requirement policy. An added temporary FTE may also be required to handle increases in service requests for customers choosing to unenroll from the ExpressLanes FasTrak program. A set of new mailings, emails, outreach communications and roadside messaging should be considered as part of a comprehensive Communications Plan to notify the motoring public of the policy changes. Use of website messaging should be developed and implemented at both the public non-secured web pages, as well as the secured customer portion of the website. Lastly, algorithms and back office systems would likely be required to accommodate the 5+ and reporting policy.*

There could also be long-term customer service staffing impacts related to occupancy-violation processing and customer complaint resolutions associated with the increase in pricing modifications from the new enforcement systems. There may also be minor customer service impacts resulting from the reporting elements of this alternative.

Alternative 5: Only LA Metro Vanpool Program-registered vanpools are eligible to receive toll exemption.

Alternative 5 would allow for only Metro Vanpool Program-registered vanpools of 7+ occupancy to receive the toll exemption. Vanpools from other programs would not be eligible for the toll exemption. There would be no other HOV discount. This would require all vanpools to adhere to the current Metro Vanpool Program eligibility requirements. A FasTrak account and transponder would be required of all vehicles, just as it is now. In this case, the lane system would be configured as such that any transponders set at the 2 or 3+ setting would be indicative of a Metro Vanpool, allowing for the current style of transponder to be used going forward. This setup is very similar to the current system, with the revision of the definitions of the 2 and 3+ settings. An occupancy verification system would be an essential part of this alternative. This is the most restrictive of the alternatives presented but would be the easiest for us to enforce. The ease of use for occupants might initially seem low but would become routine after time for those enrolled. This alternative would have moderate impacts on the back office, as those tags declaring registered vanpool status would need to be read as valid in the lane, and toll-exempt in the back office, while those non-vanpool vehicles would be read as valid in the lane and tolled in the back office. Additionally, should an occupancy declaration app/website be used, back office integration will be required. The biggest impact to the lane system would be the changes to the algorithm and its interface with the lanes, back office and roadside signs. The potential for the casual vanpool significantly declines with this option, as occupants must be enrolled through the Metro Vanpool Program.

***Associated Impacts**: Increased temporary call center and walk-in center staffing might be required. This temporary staffing would be necessary, especially at the announcement of the policy change and then again at the implementation of the 7+ program with eligibility elements. It is anticipated that a sliding staffing scale for ramp-up and implementation would be needed to address potential spikes in customer contacts. Approximately five added temporary FTEs may be required on the phones and an added temporary FTE at the walk-in center. Additionally, training would be required for all CSC staff on the new policy, with scripting for handling customer complaints regarding the changes in current pricing resulting from the 7+ and eligibility requirement policy. An added temporary FTE may also be required to handle increases in service requests for customers choosing to un-enroll from the ExpressLanes FasTrak program. A set of new mailings, emails, outreach communications and roadside messaging should be considered as part of a comprehensive Communications Plan to notify the motoring public of the policy changes. Use of website messaging should be developed and implemented at both the public non-secured web pages, as well as the secured customer portion of the website. Lastly, algorithms and back office systems would likely be required to accommodate the 7+ and eligibility policy.*

There could also be long-term customer service staffing impacts related to occupancy-violation processing and customer complaint resolutions associated with the increase in pricing modifications from the new enforcement systems. There may also be minor customer service impacts resulting from the eligibility elements of this alternative.

Additional Occupancy and Transponder Considerations

Regardless of which alternative is selected, staff would like to consider implementing an automatic in-lane vehicle occupancy detection system as part of the pilot program to enforce occupancy requirements and provide the ability to invoice and charge fees to those not abiding by those requirements. Implementing an ODS as part of the enforcement plan for any of the alternatives would be an added benefit and increase the ability to monitor occupancy, thereby decreasing violations.

It should be noted that ODS costs would not be unique to any of the previously mentioned alternatives 1 through 5. Changes to the lane systems, algorithms and back office systems required for the implementation of permanent roadside ODS technology is understood to be significant and would require further consideration as to the cost and benefits associated with placement of the equipment along ExpressLanes corridors.

Likewise, all alternatives have assumed the use of mobile HOV declaration apps or websites and ODS, but the use of apps like RideFlag or Carma could be explored as occupancy declaration and verification options.

While all alternatives are laid out assuming the use of the existing style of FasTrak transponders, Metro may also discuss alternatives with the industry to introduce simple "On/Off" switchable transponders which could be used to indicate compliance. These new transponders would be issued to accounts seeking toll exemptions, while all existing

transponders would be read as tolled, regardless of their switch position.

Summary

Table 3 below presents an overview of existing policy as well as the five alternatives and their relative impacts to customers and staff. All variables for an alternative were evaluated in relation to the same variables in other alternatives; rank terms such as “highest” and “lowest” are not necessarily indicative of a number value as an in-depth quantitative analysis has not yet been conducted. Regardless of which alternative is selected, a limited-term pilot program could evaluate the effectiveness of any toll policy revision that the Board considers.

Figure 5: Overview of Five Alternatives and Impacts

		Customers		LA Metro – Occupancy Violations		LA Metro - Implementation		
Alternative	**Summary**	**Ease to Attain Toll Exemption**	**Expected Vanpool/ Carpool Participation Rate**	**Ease to Enforce Occupancy Requirements**	**Occupancy Violator Rates**	**Cost to Implement**	**Back Office Process Impacts**	**Lane System Impacts**
Existing Status Quo- HOV 2 and HOV 3+ toll exemption policies are in place. Transponder: FasTrak Flex set at 2 or 3+	Any HOV 2 or 3+ vehicle with FasTrak Flex set to 2 and 3+ receives toll exemption (with exception of HOV 2 on I-10 during peak hours). No other HOV discounts or exemptions. FasTrak account required of all ExpressLanes users.	**High** (no change)	**1.5% of all traffic** (Vanpool, on average)	**Low** (Assumes ODS)	**High** (I-10: 28-38% I-110: 19-37% Note: these estimates are without ODS)	**Low** (Current contract plus costs for ODS)	**Low** (Current operation, plus ODS Business Rules and SOPs)	**Low** (Current plans to introduce ODS)
Alternative 1 - All 5+ occupancy vehicles are eligible to receive toll exemption. Transponder: FasTrak Flex set at 2 or 3+	Any 5+ occupancy vehicle with FasTrak Flex set to 2 or 3+ is eligible for the toll exemption. Similar to existing policy, only adjusted to revise the definition of HOV to mean five or more occupants. FasTrak accounts required of all ExpressLanes users.	**Moderate** (considerable change to individual travel habits)	**Highest** (HOV 5+ would still make up very small percent of all traffic)	**Low** (Assumes ODS)	**Lower** (Assumes ODS)	**Low to Moderate** (Adds temp staffing, comm. plan rollout, system and website mods)	**Low to Moderate** (Increased customer confusion and associated complaints)	**Moderate** (Assumes ODS, and algorithm associated system mods)
Alternative 2 – Pay-By-Plate; all 5+ occupancy vehicles with HOV-specific decal are eligible to receive toll exemption. Tolling to be tiered (plate only / FasTrak / decal). Transponder: Optional FasTrak Flex set at 2 or 3+	Any 5+ occupancy vehicle that has applied for and installed a decal indicating its HOV status is eligible to receive toll exemption. Tolls will be highest for PBP customers, while FasTrak users will receive a discount from the higher rate. FasTrak not required of ExpressLanes users.	**Moderate** (considerable change to individual travel habits)	**High** (HOV 5+ would still make up very small percent of all traffic)	**Moderate** (Assumes ODS; decal system and PBP adds complexity)	**Low to Moderate** (Assumes ODS, decal system and PBP adds complexity)	**Moderate to High** (Costs from Alt 1 plus added PBP costs and decal system costs)	**High** (Issues from Alt 1 plus added issues from PBP and decal read errors, also system mods)	**Moderate** (Similar to Alt 1)

		Customers		LA Metro – Occupancy Violations		LA Metro - Implementation		
Alternative	**Summary**	**Ease to Attain Toll Exemption**	**Expected Vanpool/ Carpool Participation Rate**	**Ease to Enforce Occupancy Requirements**	**Occupancy Violator Rates**	**Cost to Implement**	**Back Office Process Impacts**	**Lane System Impacts**
Alternative 3 - All 7+ occupancy vehicles are eligible to receive toll exemption. Transponder: FasTrak Flex set at 2 or 3+	Any 7+ occupancy vehicle with FasTrak Flex set to 2 or 3+ is eligible for the toll exemption. Similar to existing policy, only adjusted to revise the definition of HOV to mean seven or more occupants. FasTrak accounts required of all ExpressLanes users.	**Low** (significant change to individual travel habits)	**Low** (HOV 7+ would likely make up a smaller percentage of all traffic)	**Low** (Assumes ODS)	**Lower** (Assumes ODS)	**Low to Moderate** (Costs from Alt 1)	**Low to Moderate** (similar to Alt 1)	**Moderate** (Similar to Alt 1)
Alternative 4 - All 5+ occupancy vehicles that maintain reporting requirements (to be determined by staff) are eligible to receive toll exemption. Transponder: FasTrak Flex set at 2 or 3+	Any 5+ occupancy vehicle with FasTrak Flex set to 2 or 3+ is eligible for the toll exemption; however, to receive that exemption they must report statistics to staff on a monthly basis (ridership, mileage, origin and destination, etc.). FasTrak accounts required of all ExpressLanes users.	**Lower** (significant change to individual travel habits)	**Low** (HOV 5+ would likely make up a smaller percentage of all traffic)	**Moderate** (Assumes ODS with added registration issues)	**Lower** (Assumes ODS)	**Moderate** (Similar to Alt 1, with added registration issues)	**Moderate** (Similar to Alt 1, with added registration issues)	**Moderate** (similar to Alt 1)
Alternative 5 – Only LA Metro Vanpool Program-registered vanpools are eligible to receive toll exemption. Transponder: FasTrak Flex set at 2 or 3+	Only those customers registered through LA Metro's Vanpool Program and with FasTrak Flex set to 2 or 3+ would be eligible to receive toll exemption. FasTrak accounts required of all ExpressLanes users.	**Lowest** (radical change to individual travel habits)	**Lowest** (Metro Vanpools would likely make up a much smaller percentage of all traffic)	**Moderate to High** (Assumes ODS with added registration issues and Metro exclusivity)	**Lowest** (assumes ODS)	**Moderate to High** (Assumes ODS with added registration issues and Metro exclusivity)	**Moderate to High** (Assumes ODS with added registration issues and Metro exclusivity	**Moderate** (similar to Alt 1)

7. Recommended Alternative

Based on this analysis, **Alternative 1 (all 5+ vehicles toll-exemption eligible)** is the recommended alternative. From a customer perspective, this option offers the highest ease of use, as those customers likely to use the program would probably already own a FasTrak transponder and account in good standing. Alternative 1 follows similar usage of those accounts and transponders to the existing condition, so customers will not have to become accustomed to new processes. Customers wishing to receive a toll exemption would need to become accustomed to the habitual use of the occupancy declaration app or website. Ease of use could be marketed to potentially new ExpressLanes HOV5+ Vehicle Pool participants through an ongoing and aggressive education and outreach plan. As this alternative has the lowest barrier to entry for receiving toll exemption, it has the greatest potential to lower congestion in the ExpressLanes as more travelers may switch to this Express HOV 5+ mode of transport.

Metro could see the greatest impact at the lowest cost with Alternative 1. The ease to implement this alternative is relatively low as the necessary infrastructure is in place, though some revision of software would be required. Back office revisions would be required to allow those vehicles meeting the requirements to receive the toll exemption and staff would need to be trained on the new policies, which are not radically different from existing. The cost to implement this alternative is relatively lower than some of the others with the primary costs outside the occupancy verification system being those associated with public education on the proposed program and cost to train staff. Due to its ease of use for the traveling public, this alternative has the highest potential to convert existing 2 and 3+ occupancy vehicles to 5+ occupancy vehicles, thereby reducing congestion for all expressway users. With that said, it should be assumed that some of those 2 and 3+ users will continue using their current mode of travel while splitting the tolls among the occupants.

Automated in-lane vehicle occupancy detection systems (ODS) are a potential solution to occupancy violations, with positive outcomes from a few pilot programs that were studied. These occupancy detection systems could be a significant contributor to increased HOV usage, as those former occupancy violators may move to higher-occupancy vehicles to avoid tolls. Without the occupancy detection system, and with reliance upon existing occupancy enforcement methods, the Board can expect to experience similar occupancy violation rates as it does now. Once occupancy violators experience being caught for every violation as a result of ODS implementation, occupancy violations would likely be kept to an absolute minimum.

A pilot program using an occupancy detection system is in the initial stages on the I-110 ExpressLanes. Upon completion of the pilot program with ODS, further study and analysis of the I-110 pilot program should be undertaken to determine any operational or enforcement benefits that may be gained with the installation of an occupancy detection system on the I-10.

8. Impact Analysis

Summary Results from Simulation and Economic Analysis

To evaluate the potential anticipated outcomes associated with a policy change for the I-10 ExpressLanes wherein all vehicle types except vanpools and passenger buses are subject to tolls (noting that clean air vehicles would continue to qualify for a toll discount), a micro-simulation model was constructed of the entire I-10 ExpressLanes corridor, calibrated to current traffic/toll data, and analyzed under a future policy scenario as described.

To provide early results as rapidly as possible, the analysis team identified and implemented several assumptions and constraints which were determined to be reasonable by experts in the areas of toll modeling, demand modeling, and traffic simulation modeling. Consequently, as with any findings produced during the sketch-planning stages of project evaluations, these results and outcomes must be considered only preliminary and approximate in nature. For example, this simulation focused only on the AM Peak (6–9 AM) and PM Peak (4–7 PM) periods of a typical business day only; therefore, the results presented here are based upon analysis of these critical travel periods only.

ExpressLanes Outcomes

Preliminary results from our accelerated analysis methodology suggest the following outcomes for the ExpressLanes:

- **Throughput:** An increase in ExpressLanes person throughput by 600 persons per day, corresponding to an increase of 4%.
- **Travel time:** An average increase in end-to-end travel times by an estimated 51 seconds. The travel time increase was mostly caused by queueing in the eastbound direction during the PM Peak at the east end of the ExpressLanes, where traffic merges back into the general purpose lanes. This could be mitigated by extending the ExpressLanes farther along I-10 in the future.
- **Transit performance:** The simplified modeling approach did not afford sufficient analytical fidelity to obtain insight into transit-specific performance outcomes. In the preliminary analysis results, transit performance remained effectively unchanged between the present and future scenarios.
- **Toll Rates:** An increase in average per-mile toll rates by $0.20/mile. Part of the increase is a result of the fact that current toll rates are subject to a toll cap (which artificially suppresses the average per-mile rate to levels that are lower than necessary to effectively control congestion in the ExpressLanes), whereas toll rates in the future scenario were unconstrained. This increase in average toll rate is also influenced by the fact that in the future scenario, the ExpressLanes provide a more substantial travel time savings compared to the general purpose lanes, which drives up demand for the ExpressLanes and results in higher toll rates to ensure the lanes continue to flow freely.

General Purpose Lanes Outcomes

Preliminary results from our accelerated analysis methodology suggest the following outcomes for the general purpose lanes:

- **Travel Times:** An overall average increase in vehicle trip times of four minutes. Some eastbound travel times in the PM Peak period exhibited more pronounced growth than other directions and times of day, with an average PM Peak travel time increase of 21 minutes. This could be mitigated by extending the ExpressLanes farther along I-10 in the future, as the majority of this added travel time is the result of ExpressLanes traffic merging back into the freeway general-purpose lanes at the current terminus of the lanes at I-605 (a pre-existing bottleneck location in the Eastbound direction). For context, the corridor-wide travel times currently fluctuate above their average levels by as much as 26 minutes from day to day during peak periods due to stochastic effects. [38]

Corridor-Wide Outcomes

Preliminary results from our accelerated analysis methodology suggest the following outcomes for the complete corridor:

- **Fuel Consumption:** An additional daily consumption of 3,300 gallons of gasoline. This could be offset through investment of toll revenues into programs that improve air quality, such as conversion of Freeway Service Patrol vehicles to clean propulsion technologies, or provision of additional incentives for transit riders. For context, California motorists consume approximately 40,000,000 gallons of gasoline per day. [39]
- **Emissions:** An additional emissions cost of $1,200 per day for the corridor. This could be offset through investment of toll revenues into programs that improve air quality, such as investment in freeway landscaping improvements to increase tree densities along the corridor. For context, Los Angeles motorists produce approximately $1,761,643 in emissions costs per day. [40]

Supplemental Economic Analysis

For additional insight into the impacts of this alternative tolling strategy, a supplemental sketch-planning economic analysis (based on demand and toll models only) was also performed to assess the value of the estimated changes in travel times between the current and future scenarios. It showed that the true mobility cost of congestion on the corridor would decline substantially under the new proposed toll policy, from $9.2 million initially to $5.5 million in the future scenario, for an overall daily economic savings across all corridor users of $3.7 million.

Interpretation

The core benefit of the future toll scenario is the consistent availability of a faster and more reliable travel option to everyone on the corridor whenever it is needed. While this benefit comes at a travel time cost to the general-purpose lanes, the overall effect is a significant cost

savings to the users of the corridor in the form of improved trip performance and reliability for the trips with the highest value to travelers at all times. The new proposed toll policy also affords other tangible benefits that, while outside the scope of the current analysis, are worth noting:

- Substantial improvement in travel time reliability for high-priority trips through increased availability of the ExpressLanes as a fast and predictable alternative to the highly variable conditions in the general purpose lanes. This translates into less of a need for travelers to budget additional buffer time in their trips to ensure they arrive on time to their most important events.
- Faster response times for emergency vehicles and Freeway Service Patrol vehicles, which results in faster clearing of incidents and reduced delays to all roadway users.
- Simplified enforcement of toll policies to reduce leakage, thereby increasing fairness and reducing the need for enforcement stops that cause disruptions to smooth traffic flow.

Additionally, several mitigation measures can be employed to offset any adverse impacts of this policy change, including investment of additional toll revenues in:

- Transit improvements and incentives, such as more frequent service, fare subsidies/discounts, or enhanced onboard amenities.
- Improved incident management strategies on the corridor to address traffic delays caused by incidents and to improve travel time reliability in the general purpose lanes.
- Corridor infrastructure that targets the external impacts of traffic including emissions, noise, and road surface degradation.

9. Conclusion

Overall, Alternative 1 (all 5+ vehicles toll-exemption eligible) offers the highest ease of use, in addition to the greatest impact at the lowest cost. As this alternative has the lowest barrier to entry for receiving toll exemption, it has the greatest potential to lower congestion in the ExpressLanes as more travelers may switch to this Express HOV 5+ mode of transport resulting in a faster and more reliable travel option.

Sources

[1] I-15 Express Lanes Study, Brigham Young University, 2015
https://www.udot.utah.gov/main/uconowner.gf?n=23089114360013981
[2] I-15 Express Lanes Study, Brigham Young University, 2015.
[3] Federal Transit Administration - National Transit Database Glossary website.
https://www.transit.dot.gov/ntd/national-transit-database-ntd-glossary
[4] Federal Transit Administration - National Transit Database Glossary website.
[5] Federal Transit Administration - National Transit Database Glossary website.
[6] California Legislative Information website. http://leginfo.legislature.ca.gov/faces/codes
displaySection.xhtml?lawCode=VEH&sectionNum=668
[7] Metro Expresslanes – Using the ExpressLanes website. https://www.metroexpresslanes.net/en/about/howit.shtml
[8] 511 SF Bay – Vanpool Free Bridge Tolls website. https://511.org/carpool-vanpool/vanpool/resource/free-bridge-tolls
[9] Washington State Department of Transportation – I-405 Express Toll Lanes website.
https://www.wsdot.wa.gov/Tolling/405/carpool.htm
[10] Washington State Department of Transportation – SR 167 HOT Lanes website.
https://www.wsdot.wa.gov/Tolling/SR167HotLanes/default.htm
[11] Washington State Department of Transportation – SR 520 Bridge Tolling website.
https://www.wsdot.wa.gov/Tolling/520/default.htm
[12] MoPac Improvement Project – What Are Express Lanes website.
http://www.mopacexpress.com/express-lanes/index.php
[13] Peach Pass – I-75 South Metro Express Lanes website. https://www.peachpass.com/where-can-i-use-peach-pass/i-75-
south-metro-express-lanes/
[14] Peach Pass – I-85 Express Lanes website. https://www.peachpass.com/where-can-i-use-peach-pass/i-85-express-lanes/
[15] Florida Department of Transportation – 95 Express FAQs website. https://www.1800234ride.com/95expresslanesfaqs
[16] Transurba Limited – Express Lanes FAQs website. https://www.expresslanes.com/faqs
[17] Virginia Department of Transportation – 66 ExpressLanes Using the Lanes website.
http://66expresslanes.org/using the lanes/default.asp
[18] RideFlag 2.0 and 95X 3+ program.pptx (RideFlag presentation supplied by Metro)
[19] LA Metro – Metro Vanpool Program website. https://www.metro.net/riding/vanpool/
[20] Orange County Transportation Authority – OC Vanpool website. http://www.octa.net/Vanpool/Overview/
[21] San Diego Association of Governments – SANDAG Vanpool Program website.
http://www.icommutesd.com/docs/default-source/vanpool/sandag-vanpool-program-participation-
agreement-and-guidelines2016.pdf?sfvrsn=2
[22] King County Metro – Vanpool website.https://kingcounty.gov/depts/transportation/metro/travel-
options/rideshare/programs/vanpool.aspx
[23] Capital Metro – Metro Rideshare website. https://www.capmetro.org/rideshare/
[24] Dallas Area Rapid Transit – Rideshare website. https://www.dart.org/about/rideshare.asp
[25] Metro – Metro Star Vanpool & Carpool website. https://www.ridemetro.org/Pages/StarVanpool.aspx
[26] State Road & Tollway Authority – Vanpool website. http://www.srta.ga.gov/vanpool/
[27] South Florida Vanpool website. http://southfloridavanpool.com/
[28] Vanpool Alliance – Start Vanpooling website. http://vanpoolalliance.org/start-vanpooling/
[29] UCLA Transportation – Vanpool website. https://transportation.ucla.edu/getting-to-ucla/vanpool
[30] UC Davis goGlub – Vanpool website. http://goclub.ucdavis.edu/van/current.cfm
[31] Stanford Parking & Transportation Services – Rideshare website.
https://transportation.stanford.edu/rideshare/learn-about-vanpooling
[32] California Department of Human Resources – Commute Programs website.
http://www.calhr.ca.gov/employees/Pages/Commute-Program.aspx
[33] City of Los Angeles Personnel Department – Vanpool Program website. http://www.per.lacity.org/vanpool.htm
[34] Emory University Transportation and Parking Services – Vanpool Program at Emory website.
http://transportation.emory.edu/commute/vanpool/index.html
[35] International Bridge, Tunnel and Turpike Assocation – Success Stories from the Tolling Industry website.
https://www.ibtta.org/sites/default/files/documents/MAF/Success%20Story
State%20Road%20Toll%20Authority.pdf
[36] University of Minnesota - Value Pricing Outreach and Education, K. Buckeye and L. Munnich, 2004.
http://wwwhhh.oit.umn.edu/centers/slp/transportation/congestionpricing/pdf/ValuePricingOutreac
handEducation-Buckeye Munnich.pdf.
[37] Carma – Mobile Technology for Toll Road Discounts website. https://www.gocarma.com/toll-road-discounts
[38] Florida Department of Transportation – Palmetto Express FAQs website.
http://www.palmettoexpresslanes.com/faqs/misconceptions Based on weekday PeMS data for October 2017 and
March 2018.
[39] https://www.boe.ca.gov/news/pdf/ep213.pdf
[40] https://www.jacionline.org/article/S0091-6749(14)01364-5/pdf
[41] More info about the October 2015 test is online here: http://onlinepubs.trb.org/onlinepubs/Conferences/2016/ML/S6-
McCune.pdf. More info about the upcoming proof of concept is in Board Report 2017-0717.

METRO EXPRESSLANES
MOTION RESPONSE #43
I-10 EXPRESSLANES PILOT PROGRAM

Board of Directors – Ad Hoc Congestion, Highway and Roads Committee

January 16, 2019

Board Motion and Response

Director Fasana's motion, amended by Director Solis, requests development of an I-10 ExpressLanes Pilot that increases the toll-free occupancy requirements from HOV2+/HOV3+ to vanpools and transit vehicles only, as a means of preserving the ExpressLanes as a fast, reliable travel option for transit users and all corridor travelers.

- This is Metro staff's report back on:
  - Potential effects of implementing this pilot
  - Key decision points and milestones for implementation
  - Solicitation of feedback and evaluation of potential impacts associated with this pilot, with focus on low-income commuters
- Recommended Action: Authorize the development of an implementation plan for the I-10 ExpressLanes Pilot Program

Metro

Summary of Item 8

In the **I-10 ExpressLanes,** the following vehicles travel toll-free:

CURRENT	PROPOSED
HOV 3+ DURING PEAK PERIODS HOV 2+ DURING OFF-PEAK PERIODS	HOV 5+ AT ALL TIMES

Metro

Historical Context

1973: Facility initially opens as a busway.

1974: HOV3+ vehicles temporarily allowed in busway during a 3-month transit strike.

1976: HOV3+ vehicles allowed to use busway during peak periods.

1981: HOV3+ vehicles allowed to use busway at all times.

2000: HOV2 vehicles allowed to use busway during non-peak periods.

2013: Busway converted to ExpressLanes.

Metro

I-10 ExpressLanes Performance Challenges

58%

increase in ExpressLanes trips

from 10,093,413 in FY14 to 15,924,317 in FY18

201%

increase in HOV-Only minutes

from 1,101 in FY14 to 3,314 in FY18

12.5%

decrease in AM Peak ExpressLanes speeds

from 60.8 mph in FY14 to 53.2 mph in FY18

- Additional I-10 travel time has been added to the Metro Silver Line schedule to keep buses on time.
- Up to 19% of Foothill Transit Silver Streak buses operate behind schedule.
- Significant proportion of traffic mis-representing vehicle occupancy to improperly obtain toll-free travel.

Metro

Potential Effects of Implementing Pilot

- Overall mobility benefit of approximately **$3.7 million per day** in time/delay cost savings corridor-wide.
- Increase in ExpressLanes person-throughput by **600 persons/day** (a 4% increase for ExpressLanes throughput)
- Increase in end-to-end travel times in the general-purpose lanes by **4 minutes** on average.
- Increase in congestion of the eastbound I-10 ExpressLanes at I-605 due to forced merging into the general-purpose lanes.
- Improvements in transit travel time reliability, based on qualitative evaluation by subject area experts.
- Provision of a more long-term sustainable toll strategy that is less susceptible to congestion—especially congestion caused by vehicles that mis-represent occupancy.

Metro

Impacts to Low-Income Commuters

Survey findings from 479 low-income commuters on I-10

- Very few (3%) have ever used a vanpool on the I-10 ExpressLanes.
- Approximately 50% currently use the I-10 ExpressLanes.
- Under the proposed pilot, respondents indicated they would do the following:

	Would use the ExpressLanes			Would use the General Purpose Lanes
	As SOV/HOV	As transit	As vanpool	
Current ExpressLanes Users	41%	13%	21%	23%
Current General Purpose Lane Users	18%	5%	17%	56%

*Rows will not sum to 100% due to some respondents indicating "another form of transportation" which could include active transportation.

Metro

Vanpool Program

- Federally registered vanpool programs require participants to lease vehicles with seating capacity of at least 7 persons. This is a potentially significant barrier to participation.
- To facilitate vanpool participation, staff recommends that the occupancy threshold for toll-free passage be set to 5 persons per vehicle.
- Staff will explore strategies to further incentivize vanpooling for commuters.

Metro

Timeframe Considerations

Integration will be required with the **new Back Office System,** expected to come online by early 2020.

Comprehensive outreach strategy to all customers and corridor users requires substantial time to complete.

Significant lead time required to engage a **third-party contractor** to verify vanpools & handle toll exemptions.

Before-and-after study requires a considerable data collection period before go-live.

Metro

Key Decision Points and Milestones

- **Obtained concurrence from Caltrans and FHWA**
  - As a condition of concurrence, FHWA requires a before-and-after study and significant public outreach.
- **Collect and analyze additional data** on
  - Effects on transit operations
  - Barriers to ExpressLanes, transit, and vanpool usage
  - More detailed assessment of low-income impacts
- **Develop a formal implementation plan and return to the Board with recommendations in 12–15 months.**
  - Optimal method of verifying vanpools and handling toll exemptions through integration with ExpressLanes Back Office
  - Determine cost associated with implementation

Metro

$1.4 M

total anticipated cost

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

File #: 2018-0544, **File Type:** Contract **Agenda Number:** 9.

AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE
JANUARY 16, 2019

SUBJECT: METRO EXPRESSLANES - CUSTOMER SERVICE CENTER OPERATIONS

ACTION: AWARD CONTRACT

RECOMMENDATION

AUTHORIZE the Chief Executive Officer to award firm fixed price Contract No. PS51236000 to Faneuil, Inc. to provide the personnel, services, and expertise to operate the Metro ExpressLanes Customer Service Centers for an eight-year base period, with three, two year options, in the amount of $83,022,159 for the base period and $86,352,515 for all option years exercised, for a total of $169,374,674, subject to resolution of protest(s), if any.

ISSUE

In 2010, Metro entered into Contract No. PS0922102333 (existing contract) with Atkinson Contractors, LP (Atkinson) to design, build, operate, and maintain the I-10 and I-110 ExpressLanes. The existing contract is scheduled to expire in February 2020.

Based on lessons learned and consistent with the tolling industry's best practices, Metro has split the services provided under the current contract into three separate procurements; namely, 1) back office system, 2) roadside toll collection system, and 3) customer service operations. The back office system contract which was awarded by the Board in January 2018 includes account management system, violation processing, and other support functions. The roadside toll collection system contract, awarded by the Board in June 2018, includes roadside equipment, dynamic pricing, trip building, and related support functions.

Award of the customer service center operations, will complete the necessary procurements, enabling implementation of the new ExpressLanes system.

DISCUSSION

The Metro ExpressLanes Customer Service Center Operations comprises the resources necessary for ongoing program operations inclusive of, Los Angeles County facility locations, front and back office operations staffing, call center operations, supplies, fixtures, furnishings, and business machines (copiers, scanners, shredders, etc.). The customer service center operations responsibilities include revenue management, account management, account maintenance,

transponder management, and all relevant customer interfaces.

The objective of this Contract is to implement the best-in-class method for providing effective, responsive, and superior service to Metro ExpressLanes customers.

Contract Term

Customer service center operations are a complex component of a tolling system and are customized to meet the specific parameters and requirements of each program. Industry experience has shown a typical acquisition of a new operations system may require up to 25 months to complete. This places substantial burden on Metro staff with respect to time and resources, making the process cost-prohibitive to repeat at the standard procurement intervals. With a shorter contract term, the agency would be in a perpetual cycle of procurement, training, and transition.

The Metro ExpressLanes customer service center operations scope of work, which included over 600 requirements, and the contract term were developed in tandem with a team of tolling expert consultants. Additionally, Metro conducted a Tolling Industry Forum to gather expert input regarding the optimal contract term. The recommended contract term is based on experience gained from five years of tolling, Industry Forum results, and best practices.

Additionally, minimizing the number of vendor transitions for the customer service center operations reduces operating costs and minimizes the risk of lost transactions and service disruptions that can arise during transition.

Staff is recommending an eight-year base contract with three, two-year options for a total of fourteen years. The recommended contract term reflects those of the back office and roadside systems awarded by the Board earlier this year to assure consistency and continuity.

The additional three, two-year options, which would require Board approval at the appropriate time, will allow staff sufficient time to develop, advertise, award, and implement the services of a new system operator, if warranted.

Small Business Participation

The recommended contractors have proposed to meet or exceed the established 20% SBE and 3% DVBE goals for this contract.

DETERMINATION OF SAFETY IMPACT

The Board action will not have an impact on safety of Metro’s patrons or employees.

FINANCIAL IMPACT

Funding for this Contract will come from toll revenues. The funds required for FY19 are included in the FY19 budget in Cost Center 2220, Project Number 307001 and 307002, Account 50316, Task 02.01.

Impact to Budget

Since this is a multi-year project, the cost center manager and Executive Officer of Congestion Reduction will be responsible for budgeting the cost in future years.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The Metro ExpressLanes Customer Service Center Operations aligns with Strategic Goal 1: Provide high-quality mobility options that enable people to spend less time traveling. ExpressLanes provide drivers with the option of a more reliable trip while improving the overall operational efficiency of the freeway network.

ALTERNATIVES CONSIDERED

The Board may choose not to award and execute this Contract. This alternative is not recommended because services under the existing contract will lapse and the ExpressLanes program will be adversely affected.

The Board may choose to direct staff to use in-house resources. This alternative is not recommended since Metro staff does not currently possess sufficient expertise in tolling operations, nor does it have the personnel availability/capacity to do so.

NEXT STEPS

Upon Board approval, staff will execute Contract No. PS51236000 to Faneuil, Inc. to provide the personnel, services, and expertise to operate the Metro ExpressLanes customer service centers.

ATTACHMENTS

Attachment A - Procurement Summary
Attachment B - DEOD Summary

Prepared by: Silva Mardrussian, Senior Manager, Transportation Planning, Congestion Reduction, (213) 418-3132

Reviewed by: Shahrzad Amiri, Executive Officer, Congestion Reduction, (213) 922-3061
Debra Avila, Chief Vendor/Contract Management Officer, (213) 418-3051

Phillip A. Washington
Chief Executive Officer

PROCUREMENT SUMMARY

METRO EXPRESSLANES CUSTOMER SERVICE CENTER OPERATIONS/PS51236000

1.	**Contract Number**: **PS51236000**	
2.	**Recommended Vendor**: Faneuil, Inc.	
3.	**Type of Procurement (check one):** ☐ **IFB** ☒ **RFP** ☐ **RFP–A&E** ☐ **Non-Competitive** ☐ **Modification** ☐ **Task Order**	
4.	**Procurement Dates**:	
	A. Issued: 03/05/18	
	B. Advertised/Publicized: 03/07/18	
	C. Pre-Proposal Conference: 03/14/18	
	D. Proposals Due: 06/01/18	
	E. Pre-Qualification Completed: 07/24/18	
	F. Conflict of Interest Form Submitted to Ethics: 06/01/18	
	G. Protest Period End Date: 01/08/19	
5.	**Solicitations Picked up/Downloaded**: 106	**Proposals Received**: 7
6.	**Contract Administrator**: Andrew Conriquez	**Telephone Number**: (213) 922-3528
7.	**Project Manager**: Silva Mardrussian	**Telephone Number**: (213) 418-3132

A. Procurement Background

This Board Action is to approve Contract No. PS51236000 issued in support of the Metro ExpressLanes Customer Service Center Operations. Board approval of contract awards are subject to resolution of any properly submitted protest.

The Request for Proposals (RFP) was issued in accordance with Metro's Acquisition Policy and the contract type is a firm fixed price.

Seven amendments were issued to the RFP:

- Amendment No. 1, issued on March 26, 2018, clarified the evaluation criteria, Scope of Services, associated attachments and extended the questions submittal period and proposal due date;
- Amendment No. 2, issued on April 5, 2018, clarified the Scope of Services, associated attachments and updated the proposal validity period;
- Amendment No. 3, issued on April 23, 2018, extended the proposal due date;
- Amendment No. 4, issued on May 9, 2018, updated the Scope of Services and associated attachments and Submittal Requirements;
- Amendment No. 5, issued on May 14, 2018, updated Exhibit 12;
- Amendment No. 6, issued on May 18, 2018, updated the Scope of Services, and associated attachments.

- Amendment No. 7, issued on October 5, 2018, added Exhibit 13, Metro's Living Wage Policy and requested the firms to submit pricing based on living wage.

A pre-proposal conference was held on March 14, 2018, and was attended by 25 people representing 16 companies. There were 271 questions submitted and responses were released prior to the proposal due date.

A total of 106 firms downloaded the RFP and were registered on the planholders' list. A total of seven proposals were received on June 1, 2018.

B. Evaluation of Proposals

A Proposal Evaluation Team (PET) consisting of Metro staff from Congestion Reduction and one external member from the Central Texas Regional Mobility Authority convened and conducted a comprehensive technical evaluation of the proposals received.

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

• Demonstrated Project Experience and Qualifications	5 percent
• Key Project Team Experience	19 percent
• Approach to Implementation Phase Requirements	19 percent
• Approach to Operations Phase Requirements	24 percent
• Approach to Performance Requirements	19 percent
• Cost	10 percent
• Contracting Outreach and Mentor Protégé Requirement	4 percent

Several factors were considered when developing these weights, giving the greatest importance to Approach to Operations Phase Requirements.

On June 5, 2018, the proposals were distributed to the PET for evaluation. Three firms were determined to be outside the competitive range due to lack of experience, insufficient information and misunderstanding of the requirements set forth in the RFP. The four firms within the competitive range are listed below in alphabetical order:

1. AECOM Energy & Construction, Inc. (AECOM)
2. Cofiroute USA, LLC
3. EGIS Projects, Inc.
4. Faneuil, Inc.

During the week of July 9, 2018, the PET met and interviewed the firms. The firms' project managers and key team members had an opportunity to present each team's

qualifications and respond to the evaluation committee's questions. In general, each team's presentation addressed the requirements of the RFP, experience with all aspects of the required tasks, and stressed each firm's commitment to the success of the project. Also, each team highlighted its staffing plans, work plans, and perceived project issues. Each team was asked questions relative to each firm's proposed alternatives and previous experience.

At the conclusion of the evaluation process including oral presentations, Faneuil, Inc. was determined to be the highest ranked firm to implement, operate and support this project.

Qualifications Summary of Firms within the Competitive Range:

Faneuil, Inc.

Faneuil, Inc. is headquartered in Hampton, Virginia and has over 25 years of experience. They are a nationally recognized leader in customer care services for the public and private sectors. Faneuil, Inc. offers a menu of multiple complex back-office services that include customer call centers, customer-facing service centers, transponder sales, and transaction processing services.

Faneuil, Inc. will plan and operate the Metro ExpressLanes Customer Service Center Operations in two stages. The Planning Phase encompasses the build-out of a new facility where a single call and walk-in center will be co-located. In addition, the existing El Monte Customer Service Center, will remain at its existing location and Faneuil, Inc. will work with third party vendors to ensure the successful implementation of back office and roadside systems, and transitioning is completed from the current contractor. The operation phase entails managing all day-to-day customer service activities, collaborating as needed with the systems contractors and go-live with Faneuil representatives.

AECOM Energy & Construction, Inc. (AECOM)

AECOM Energy & Construction, Inc. (AECOM) is a division of AECOM, a Fortune 500 company. They have been performing toll operations and maintenance services for over 20 years and has been in business in California for 81 years. AECOM has worked with cities, educational institutions, leisure and hospitality, healthcare, transportation, local and government agencies.

AECOM has successfully developed new toll programs from the ground up and assumed operational responsibility in situations that required the transition of operations from another service provider concurrent with a new system deployment. They are an experienced company with years of delivering, operating and supporting toll programs similar to Metro's.

EGIS Projects, Inc.

EGIS Projects, Inc. is a division of EGIS Group S.A. who has been in business for over 45 years. They have functioned as a full-service infrastructure engineering and implementation company, providing professional services for horizontal and vertical design, construction and operations in multiple disciplines including transportation, energy, facilities and the environment.

The Egis Projects, Inc. division focuses on six core lines of business, including P3 project structuring and investment; turnkey delivery of ITS and tolling systems; road operations and maintenance; airport operations; electronic toll/fare charging and enforcement solutions; road mobility services; and new mobility projects and services. Egis is a worldwide leader in the delivery and operations of electronic tolling roadside and back office operations.

Cofiroute USA, LLC

Cofiroute, S.A. (France), established in 1990, was part of California Private Transportation Company (CPTC), which was formed in order to finance, develop and operate the first all-electronic toll facility in the world: the 91 Express Lanes in Southern California. When the 91 Express Lanes were sold to the Orange County Transportation Authority, Cofiroute, S.A. continued as its operator and from this, Cofiroute USA was formed. Cofiroute USA has since expanded its operations to consultations on toll road development throughout the United States.

Over the years, Cofiroute, USA has become a tolling and express lane operations provider with a specialized focus on the management, design, installation, integration, operation and maintenance of toll solutions. Cofiroute draws from its considerable operations experience, ensuring a grasp of customer service center operations and a comprehensive approach to customer service. Cofiroute's portfolio includes toll facilities management, integration, operation, designs, operations and maintenance.

The table below provides the scores in order of rank.

	Firm	Weighted Average Score	Factor Weight	Average Score	Rank
	Faneuil, Inc.				
1	Demonstrated Project Experience and Qualifications	92.20	5.00%	4.61	
2	Key Project Team Experience	88.36	19.00%	16.79	
3	Approach to Implementation Phase Requirements	73.35	19.00%	13.94	
4	Approach to Operations Phase Requirements	74.75	24.00%	17.94	

5	Approach to Performance Requirements	63.89	19.00%	12.14	
6	Cost	92.90	10.00%	9.29	
7	DEOD Comp Requirement	100.00	4.00%	4.00	
8	**Total**		**100.00%**	**78.71**	**1**
9	**AECOM Energy & Construction**				
10	Demonstrated Project Experience and Qualifications	70.60	5.00%	3.53	
11	Key Project Team Experience	59.74	19.00%	11.35	
12	Approach to Implementation Phase Requirements	84.21	19.00%	16.00	
13	Approach to Operations Phase Requirements	60.88	24.00%	14.61	
14	Approach to Performance Requirements	63.89	19.00%	12.14	
15	Cost	71.20	10.00%	7.12	
16	DEOD Comp Requirement	100.00	4.00%	4.00	
17	**Total**		**100.00%**	**68.75**	**2**
18	**EGIS Projects, Inc.**				
19	Demonstrated Project Experience and Qualifications	44.00	5.00%	2.20	
20	Key Project Team Experience	54.74	19.00%	10.40	
21	Approach to Implementation Phase Requirements	65.58	19.00%	12.46	
22	Approach to Operations Phase Requirements	60.58	24.00%	14.54	
23	Approach to Performance Requirements	61.11	19.00%	11.61	
24	Cost	82.40	10.00%	8.24	
25	DEOD Comp Requirement	100.00	4.00%	4.00	
26	**Total**		**100.00%**	**63.45**	**3**
27	**Cofiroute USA, LLC**				
28	Demonstrated Project Experience and Qualifications	40.36	5.00%	2.02	
29	Key Project Team Experience	66.42	19.00%	12.62	
30	Approach to Implementation Phase Requirements	58.09	19.00%	11.04	
31	Approach to Operations Phase Requirements	50.04	24.00%	12.01	
32	Approach to Performance Requirements	59.76	19.00%	11.35	
33	Cost	89.70	10.00%	8.97	

34	DEOD Comp Requirement	100.00	4.00%	4.00	
35	**Total**		**100.00%**	**62.01**	**4**

C. Price Analysis

The recommended price of $169,374,674 has been determined to be fair and reasonable based upon price analysis, technical analysis, fact finding and negotiations.

	Proposer Name	Proposal Amount	Metro ICE	Award Amount
1.	Faneuil, Inc.	$169,374,674	$190,924,436	$169,374,674
2.	Cofiroute USA, LLC	$175,481,828	$190,924,436	-
3.	EGIS Projects, Inc.	$190,958,023	$190,924,436	-
4.	AECOM	$221,006,137	$190,924,436	-

D. Background on Recommended Contractor

The recommended firm, Faneuil, Inc.'s key personnel average over 20 years of experience with toll systems, customer care, back-office applications, transaction processing, transponder management, and contact center operations. Faneuil, Inc. offers a menu of services in a vast number of business areas. Their solutions offer clients to engineer customized approaches to suit each client's needs.

Faneuil, Inc. has worked with multiple government agencies such as the Florida's Turnpike Enterprise, Virginia Department of Transportation, Transportation Corridor Agencies (Southern California), Transurban (Washington DC), the State of California Health Exchange, and Metropolitan Transportation Commission (San Francisco). Many of the toll services provided by Faneuil, Inc. have allowed them to become a nationally recognized leader in customer care services for the public and private sectors.

DEOD SUMMARY
METRO EXPRESSLANES CUSTOMER SERVICE CENTER
OPERATIONS/PS51236000

A. Small Business Participation

The Diversity and Economic Opportunity Department (DEOD) established a 20% Small Business Enterprise (SBE) goal and 3% Disabled Veteran Business Enterprise (DVBE) goal for this solicitation. Faneuil, Inc. met the goal by making a 20.89% SBE and 3.23% DVBE commitment.

Small Business Goal	**20% SBE 3% DVBE**	**Small Business Commitment**	**20.89% SBE 3.23% DVBE**

	SBE Subcontractors	**% Committed**
1.	Partners in Diversity, Inc.	15.08%
2.	Diversity Fulfillment Services, LLC	3.34%
3.	BCA Watson Rice, LLP	2.47%
	Total SBE Commitment	**20.89%**

	DVBE Subcontractors	**% Committed**
1.	Alliance Resource Group, Inc.	0.52%
2.	VForce, Inc.	1.20%
3.	eWasteDisposal Inc.	1.51%
	Total DVBE Commitment	**3.23%**

B. Contracting Outreach and Mentoring Plan (COMP)

To be responsive, Proposers were required to submit a Contracting Outreach and Mentoring Plan (COMP), including strategies to mentor two (2) SBE firms and two (2) DVBE firms for protégé development. Faneuil, Inc. selected all three (3) SBE firms and all three (3) DVBE firms, as listed above, for protégé development.

C. Living Wage and Service Contract Worker Retention Policy Applicability

The Living Wage and Service Contract Worker Retention Policy (LW/SCWRP) is applicable to this contract. Metro staff will monitor and enforce the policy guidelines to ensure that applicable workers are paid at minimum, the current Living Wage rate of $18.99 per hour ($13.75 base + $5.24 health benefits), including yearly increases. In addition, contractors will be responsible for submitting the required reports for the Living Wage and Service Contract Worker Retention Policy and other related documentation to staff to determine overall compliance with the policy.

D. Prevailing Wage Applicability

Prevailing wage is not applicable to this contract.

E. Project Labor Agreement/Construction Careers Policy

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

Los Angeles County
Metropolitan Transportation Authority

ITEM 9

METRO EXPRESSLANES – CUSTOMER SERVICE CENTER OPERATIONS

Ad Hoc Congestion, Highway and Roads Committee
JANUARY 16, 2019

Metro

Metro ExpressLanes - Customer Service Center Operations Contract

AUTHORIZE the Chief Executive Officer to award firm fixed price Contract No. PS51236 to Faneuil, Inc. to provide the personnel, services, and expertise to operate the Metro ExpressLanes customer service centers for an eight-year base period, with three, two-year options, in the amount of $83,022,159 for the base period and $86,352,515 for all option years exercised for a total of $169,374,674 subject to resolution of protest(s), if any.

- **Faneuil, Inc. Subcontractors**
  - Partners in Diversity (SBE)
  - Diversity Fulfillment Services (SBE)
  - BCA Watson Rice (SBE)
  - Alliance Resource Group, Inc. (DVBE)
  - V-force, Inc. (DVBE)
  - e-waste Disposal (DVBE)

- **SBE/ DVBE Participation**
  - Goal Determination was 20% SBE/ 3% DVBE
  - Contractor Commitment 20.89% SBE/ 3.23% DVBE

Metro

Metro ExpressLanes - Customer Service Center Operations Contract

Three Separate Contracts

- ExpressLanes Customer Service Support
  - Customer Service/ Call Center Location and Operations
  - Account Management Services
  - Case Management
  - Customer Notifications
  - Image Processing Quality Control
  - Customer Surveys
  - Bankruptcy/Collections/Mail Services Support
- Back Office System (Approved by Board January 2018)
  - Transaction Processing
  - Self Service Systems
  - Payment and Toll Violation Processing
- Roadside Toll Collection System (Approved by Board June 2018)
  - Equipment on the Corridors
  - Dynamic Pricing
  - Corridor Incident Monitoring

Based on Best Practices

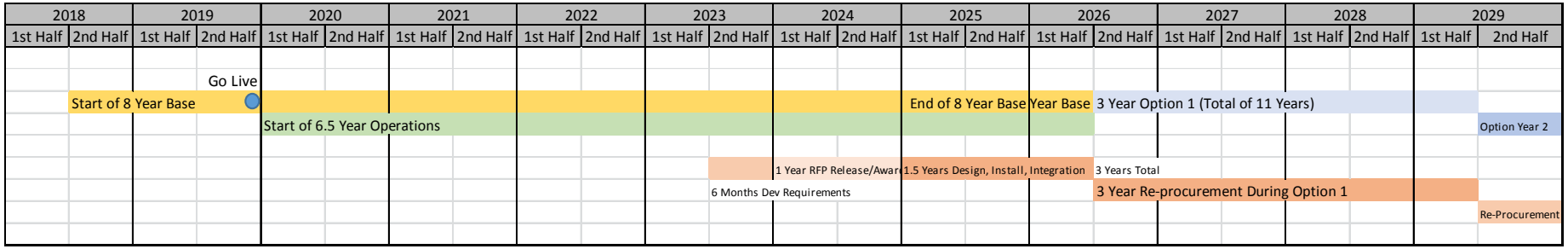
- Seeking an Eight-Year Base Contract Term with 3 Two-Year Options
  - Consistent With the Previously Awarded Back Office System and Roadside Toll Collection Contract Terms

Metro

Metro ExpressLanes - Customer Service Center Operations Contract

- **Contract Term**
  - **Eight-Year Base and Three, Two-Year Options**
    - **Option Years Will Require Board Approval at the Appropriate Time**
  - **Contract Term Recommendation reflects:**
    - **Three Years Required to Re-procure and Implement System**
    - **Obtaining the Full Useful Life of Investment**
    - **Toll Industry Forum Recommendations for Contract Length**
    - **Other Agency Roadside Tolling Contract Lengths are Comparable**

Contract & Procurement Timeline



Metro ExpressLanes - Customer Service Center Operations Contract

- **Received Seven Proposals**
  - AECOM
  - Cofiroute USA
  - Egis Projects, Inc.
  - Emovis, S.A.S.
  - Faneuil, Inc.
  - Municipal Services Bureau (MSB)
  - TransCore, LP

- **Evaluation Results**
  - Faneuil, Inc. is the Recommended Contractor
  - The Faneuil Proposal was the Best Overall

Metro

Thank You

Metro

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

File #: 2018-0703, **File Type:** Motion / Motion Response **Agenda Number:** 10.

AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE
JANUARY 16, 2019

SUBJECT: I-10 AND I-110 METRO EXPRESSLANES "PAY-AS-YOU-USE" MODEL

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

APPROVING a one-year pilot of the "Pay-as-You-Use" model.

ISSUE

At the April 26, 2018 Board meeting, Motion 42 by Director Hahn amended by Director Dupont-Walker (see Attachment A) was approved directing staff to report back on:

- The current performance of the ExpressLanes
- A comparison of the Metro ExpressLanes system to other major congestion-pricing toll systems in the country, with emphasis on those that exhibit demographic similarities to Metro's ExpressLanes; and
- The viability of Metro ExpressLanes implementing a "Pay-as-You-Use" model eliminating the requirement of a transponder.

BACKGROUND

The Metro ExpressLanes program is designed to provide users with a safe, reliable, predictable trip. To facilitate traffic management, revenue collection, and enforcement of the ExpressLanes, a requirement that all vehicles have a properly mounted FasTrak Flex transponder was included in the current Toll Policy.

Those who travel the ExpressLanes without a transponder are sent a notice of toll evasion inclusive of the toll and an initial $25 penalty. If they select to open an account, the $25 penalty is waived and they are charged the toll only. If they do not open an account and fail to make payment within a month, an additional $30 penalty accrues. Metro ExpressLanes penalty process and fees are consistent with other express lanes operators in California. On average, 47% of violations are paid on the first notice, 20% are paid on the second notice, and 31% are paid on the DMV Hold, with 1.5% not paid.

This motion is requesting staff to revisit this policy.

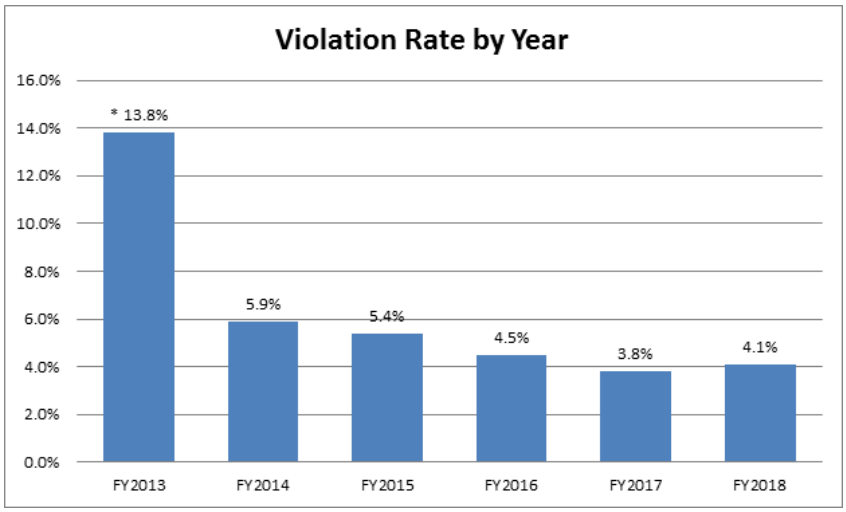
DISCUSSION

Current Performance of the Metro ExpressLanes

In FY 2018, ExpressLanes users took over 42 million vehicle trips on the I-10 and I-110 ExpressLanes; reflecting a 2% increase from FY17 and bringing the 5 year total to over 195 million vehicle trips. Metro ExpressLanes has issued 872,966 FasTrak transponders from inception through FY18, with over 150,000 transponders issued in FY18, a 21% increase from FY17. Approximately 44% of users on both corridors were SOV for FY18, but I-10 had 41% HOV3+ compared to 23% HOV3+ on the I-110. The number of HOV only minutes decreased for both corridors: approximately 6% on I-110 and 14% on I-10.

ExpressLanes users were able to save an average of 13 minutes during the AM commute and 7 minutes in the PM compared to the general purpose Lanes. In FY18 HOV2/3+ increased to 56% from 53% in FY17.

4.1% of all ExpressLanes trips are violation trips made by those without a FasTrak account. Overall, this percentage has decreased as the program has matured as indicated in the chart below.



* FY13 violation rate is for the first 7 months.

The annual customer survey based on 81,748 responses indicated that 89% of Metro ExpressLanes users are satisfied with their speed of travel while 90% are satisfied with time saved relative to toll paid. Respondents were very aware (93.37%) of the FasTrak requirements. 58.50% of our survey respondents knew about the HOV requirements. 57.51% knew that the FasTrak Flex was the switchable transponder. The 2018 Metro ExpressLanes Performance report is included as Attachment B.

Comparison of the Metro ExpressLanes System to Other Major Congestion-Pricing Toll Systems in the Country

Throughout the US, there are various toll roads and express lanes which operate under different

objectives, business rules, and pricing mechanisms.

- **Toll roads** are built to provide highway capacity to address congestion and to provide motorists with an option for relatively congestion free travel when needed most. With toll roads, motorists are given the option to pay a toll to access these lanes on a given trip regardless of vehicle occupancy. Tolls can vary by time of day or based on actual traffic conditions and are collected electronically via a transponder, license plate readers, or at toll booths. The following are a list of toll roads in Southern California.

    - SR 73 (The Toll Roads)
    - SR 133 (The Toll Roads)
    - SR 241 (The Toll Roads)
    - SR 261 (The Toll Roads)
    - SR 125 (SANDAG)

- **Express lanes** optimize lane utilization by selling the extra capacity not being used by carpools and transit vehicles to lower occupancy vehicles. Express lanes are specifically designated highway lanes that typically allow drivers to choose to pay a toll to use the lanes with other users such as carpools, motorcycles, buses, and vanpools that travel free. The benefits of express lanes are that they offer more choices to solo drivers and encourage carpooling. Express lanes often rely on dynamic pricing which helps manage the flow of traffic in which tolls are continually adjusted according to traffic conditions. The tolls are higher when there is more traffic in the express lane, and lower when the traffic is lighter. The following are a list of express lanes in Southern California.

    - I-10 (Metro)
    - I-110 (Metro)
    - I-15 (San Diego)
    - SR-91 (OCTA)
    - SR-91 (RCTC)

Demographics Comparisons

Based on an analysis of demographic data associated with each of the 13 major metropolitan regions in the country that have express lanes, the most similar regions to Los Angeles with respect to race and income distributions are listed below in descending order of similarity.

Race Distribution:

Rank	City, State	"Pay-as-You-Use" Offered	HOV Discount Offered for "Pay-as-You-Use"	Surcharge of Fee for "Pay-as-You-Use"
1	Seattle, WA	Yes	No	$2
2	Minneapolis and St. Paul, MN	No	N/A	N/A
3	Austin, TX	Yes	No	$1

Income Distribution:

Rank	City, State	"Pay-as-You-Use" Offered	HOV Discount Offered for "Pay-as-You-Use"	Surcharge of Fee for "Pay-as-You-Use"
1	Houston, TX	No	N/A	N/A
2	Denver, CO	Yes	No	$5-10
3	Baltimore, MD	No	N/A	N/A

Altogether, these six regions contain a total of 18 express lanes. Additional details regarding the data sources, methodology, and findings are available in Attachment C: Demographic Analysis of Express Lane Regions.

Operational Comparison With Other Systems

Metro staff compiled operational data across all express lane facilities in the United States and across all toll road facilities in California to characterize industry practice. The summary chart is presented in Attachment D: Comparison Chart.

Of the 43 express lane facilities in the United States, 14 or 33% offer "Pay-as-You-Use" options to those who pay the full toll with none providing an HOV or any other discount for "Pay-as-You-Use" access. Furthermore, every facility that allows "Pay-as-You-Use" access imposes a surcharge or fee ranging between $1 and $10 for that option. While 36 of the 43 facilities or 84% offer some form of toll discount to HOVs, every one of these facilities requires that the user be an account holder with a transponder to be eligible to receive the discount.

When further focusing specifically on the 18 express lane facilities in the six regions that were found to be most similar to Metro ExpressLanes with respect to demographic characteristics, similar trends are revealed. Specifically, 7 out of 18 facilities (39%) offer a "Pay-as-You-Use" option. Of these 7 facilities, none offer an HOV discount to "Pay-as-You-Use" drivers, and all impose a surcharge or fee for "Pay-as-You-Use" access ($1 to $10). For account holders, 15 out of 18 facilities (83%) offer some form of discount to HOVs.

For further comparison and insight, of the 13 toll facilities in California, 6 or 46% offer a "Pay-as-You-

Use" option with none offering an HOV discount to "Pay-as-You-Use" drivers, and all impose a surcharge or fee for "Pay-as-You-Use" access. While 8 of the 13 (or 62%) of the facilities offer some form of toll discount to HOVs, they also require either that the HOVs be existing account holders, or require that the HOVs pay at staffed toll booths.

Note also that out of all the 55 express lanes and toll road agencies surveyed, Metro ExpressLanes was found to be the only agency to offer a Low-Income Assistance Plan to accommodate the specific needs of disadvantaged segments of the population. Furthermore, the Metro ExpressLanes Low Income Assistance Plan relies on account-based designations for qualifying members, and would be infeasible to implement through a plate-based tolling approach for non-account holders.

Viability of "Pay-as-You-Use" Model

Current System Requirements

The Metro ExpressLanes issuance of switchable transponders allows customers an easy means by which to declare the number of people in the vehicle enabling HOV/carpools to use the ExpressLanes toll free. These declarations are enforced through a combination of California Highway Patrol (CHP), a FasTrak transponder, and an automated license plate camera system.

"Pay-as-You-Use" Model

The "Pay-as-You-Use" model would allow drivers to use the Metro ExpressLanes without a FasTrak transponder. Tolls would be assessed based on license plates. The registered owner of the vehicle on file with the Department of Motor Vehicles would be responsible for the toll payments. Customers would receive an invoice for their Metro ExpressLanes trip and would have the option to pay on the website, over the phone or at a customer service center. Any unpaid invoices would incur penalties for delinquency. With the "Pay-as-You-Use" model, customers would not be able to access other express lane or FasTrak facilities throughout the State unless the facility supports this model.

The table below captures the potential structure of a "Pay-as-You-Use" model if implemented at Metro:

	FasTrak Flex Account	"Pay-as-You-Use" Model
Transponder Required	Yes	No
Can drive throughout California FasTrak corridors	Yes	No
Option to pay with credit card	Yes	Yes
Option to pay cash	Yes	Yes
Account maintenance fee	Yes, $1 a month	No
Additional surcharge for each Metro ExpressLanes trip	No	Yes

Program Limitations with "Pay-as-You-Use" model

Under the proposed scenario, "Pay-as-You-Use" customers would be charged the toll and an applicable surcharge. The use of a mobile application was evaluated and found to be infeasible as a method for offering HOV discounts to "Pay-as-You-Use" customers for the following reasons:

1. A mobile app would require user authentication to access the system, and this would require that the user be an existing account holder.
2. Roadside CHP enforcement of occupancy declaration would not be possible, as the system would not be able to read a given vehicle's license plate quickly enough to identify it in real time (for CHP enforcement purposes) as it drove by.

Some agencies allow for drivers to pay online up to 4 or 5 days after they drive the lanes by entering license plate information. Generally, these agencies operate a full toll road or a bridge and rely on time of day pricing or set toll rates. Express lanes facilities typically do not have this option as the toll rates are calculated dynamically based on distance traveled requiring data from multiple gantries to be compiled into one trip that is then charged to a customer.

With transponder-based transactions, the trips can be calculated and posted to a customer account within the next day. However, with plate based express lane transactions it can take between 5-10 days to post a trip with the toll amount. This is due to the need for DMV determination of vehicle ownership as well as the manual image review process in which people view and key in license plates each time a plate is not readable by the automated system. Without this information, the system will not know how much and whom to charge.

Staff is not recommending the option of mobile app or pay within 5 days for the "Pay-as-You-Use" model, consistent with all other express lanes that utilize this model.

ExpressLanes Usage Considerations

To evaluate the potential operational impacts of the proposed “Pay-as-You-Use” model on the ExpressLanes, staff conducted a literature review of other agencies’ experiences with similar types of transitions. For additional insight, staff also performed its own original research and analysis of the impacts of such a policy change on the TCA Toll Roads when a “Pay-as-You-Use” model was implemented in early 2014. The results gathered from both the literature review and from the independent analysis were inconclusive with respect to the effects of a “Pay-as-You-Use” pricing model on trip volumes due to limited availability of past studies/data, and the presence of several variables that could not be controlled for in the data sets that did exist.

In the case of the TCA Toll Roads, for example, the implementation of its “Pay-as-You-Use” pricing model coincided with the decommissioning of all cash booths and the economic recession, which made it impossible to isolate the effect of the “Pay-as-You-Use” pricing strategy using the operational data that was available. Staff performed a preliminary internal qualitative assessment of the potential impacts associated with this policy change and anticipates an increase in ExpressLanes volume as a result of employing a “Pay-as-You-Use” model due to the removal of a potential barrier to entry for non-customers, although the magnitude of this increase cannot be estimated from the available data. Consequently, staff is recommending analysis of the results of the pilot to more accurately determine impacts.

Financial Considerations

The “Pay-as-You-Use” model may introduce some revenue leakage with a variety of causes. Industry standards have shown that transitioning to this model may increase revenue leakage because transaction volume increases while the rate of non-payment stays the same. Transponder based transactions hold an advantage over license plate based in processing costs and efficiency. It is estimated that license plate based tolling costs 3 times more to process when adding mailing costs, image/trip processing, revenue leakage, and customer service time.

Based on these factors, tolling operators who offer “Pay-as-You-Use” model charge an additional fee.

The “Pay-as-You-Use” model may lead to a reduction in violations fees or may lead to increased usage of the corridors and income from tolls plus fees. The pilot would enable evaluation of this potential impact on the I-10 and I-110 project.

2018 Customer Survey

To supplement efforts to develop a response to the Board motion, staff included a question related to the “Pay-as-You-Use” model in the 2018 customer survey. Please note that the survey was limited to current account holders. Approximately 45% of the respondents indicated that they would not be interested in a program that would allow use of ExpressLanes without transponders at a $1 to $2 surcharge. 66% and 77% of respondents indicated that they would not be interested in using the ExpressLanes without a transponder with a surcharge of $3 to $4 and $5 to $7 respectively. The expectation is that the customers who were surveyed would remain as customers and continue to use transponders as they were mostly not in favor of this model. However, this model does not

directly impact customers but is intended to enable those who are not registered customers with transponders to use the ExpressLanes without incurring a penalty.

Findings

The following summarizes the findings of the “Pay-as-You-Use” model.

1. This method allows customers to use the ExpressLanes without any advance interaction with the toll agency addressing the needs of visitors and infrequent users;
2. From a system perspective, the pay as you use model can be integrated into the current and new back office systems;
3. There is a potential increase in ExpressLanes volumes as a result of employing this model;
4. All users regardless of the number of occupants will have to pay a toll at all times (CAVs and HOVs) consistent with all other express lanes operators;
5. The Low-Income Assistance Plan can only be applied to account holders;
6. Billing process will not be as fast and efficient for “Pay-as-You-Use” as that for account holders;
7. An additional surcharge will be added to each transaction to supplement the additional staffing expense due to manual image review and transaction/mailing processing. All “Pay-as-You-Use” operators charge this surcharge;
8. The “Pay-as-You-Use” model will require changes to the existing signage and a regional outreach campaign;
9. This model may lead to revenue leakage or may lead to increased usage of the corridors and income from tolls plus fees which will be determined as part of the pilot.

Pilot of the “Pay-as-You-Use” Model

Given the potential and challenges of implementing this model and the inconclusive findings regarding impacts on congestion and revenue, staff recommends implementation of a one year limited pilot to enable assessment of the impacts with minimal changes to the system, signage, and marketing until after an evaluation is completed. Staff anticipates program impacts as summarized in the findings listed above. The pilot is expected to go-live within 9 months of board approval.

The pilot of this model will include the following:

Process Changes

The first notice will be issued to the registered owner of the vehicle with an option to pay the toll and a $4 surcharge within 20 days and a $25 penalty if paid between the 20th and 30th day. If the amount due is not paid within 30 days, an additional notice including an additional $30 penalty will be sent. If an additional 60 days has passed without payment, a DMV registration hold will be placed on the vehicle. The analysis for the $4 surcharge can be found in Attachment E.

Additionally, the following steps will be implemented prior to deployment.

- CHP will be notified that drivers without transponder should not be pulled over and cited.
- Limited campaign educating users that they can use the lanes without transponders.

System & Customer Service Changes

- The website will be modified to provide new information regarding the changes to this model.
- Transaction processing, and notice procedures will be updated to reflect the process above.
- Modifications will be made to customer communications, account statements, and other correspondence documents.
- Changes to the signage on the corridor will be completed by covering over the “ONLY” portion of the “FASTRAK ONLY” sign.

To accelerate implementation of the pilot and evaluate the results of this policy prior to full implementation, the following will be postponed.

- Regional education campaign to inform commuters about this policy change;
- New signage and upgrades to existing signage.

Following the 12 month pilot, a before and after evaluation will be developed to determine the impacts associated with this policy change and whether full implementation is warranted.

Required Operational Changes for Full Deployment after Pilot Evaluation

This model would require system and process modifications. There would be impacts to the back office system, roadside, and customer service procedures.

- **Back office system changes include:**
    - The website and Interactive Voice Response (IVR) telephone systems require modifications to provide new information and call trees regarding the changes to this model.
    - Transaction processing, violation notice procedures, and invoice generation will need to be modified.
- **Customer service changes include:**
    - Modifications would have to be made to customer communications, account statements, and other correspondence documents.
    - A regional education campaign to inform commuters about this policy change must be

undertaken.

- **Roadside changes include:**
    - Changes to lane enforcement routines and procedures would need to be communicated to CHP.
    - At the lane level, roadside signs would require new messages to communicate the new pricing model and requirements to motorists. For example, all FasTrak Only signs will need to be replaced. New signs need to be installed to communicate that motorists can use the lanes under the "Pay-as-You-Use" model. These new signs are not part of the standard Federal Manual on Uniform Traffic Control Devices for Streets and Highways signage, which will require approval from Caltrans and potentially from Federal Highway Administration which could take up to eighteen months.

The rough order of magnitude cost impact associated with full deployment is estimated at approximately $6.6 million.

FINANCIAL IMPACT

Funding for implementation of the pilot is anticipated to be approximately $750,000 and is available in the FY19 budget in cost center 2220. Because this is a multi-year program, the cost center manager and the Executive Officer of the Congestion Reduction Department Programs will be responsible for budgeting for future years.

Impact to Budget

The funding for this action will come from toll revenues generated from the Metro ExpressLanes operations. No other funds were considered for this activity. This funding is not eligible for bus/rail operating and capital expenses.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The Response to this Motion aligns with Strategic Goal 1: Provide high-quality mobility options that enable people to spend less time traveling. ExpressLanes provide drivers with the option of a more reliable trip while improving the overall operational efficiency of the freeway network.

ALTERNATIVES CONSIDERED

The Board may choose not to move forward with this recommendation. If no action is taken, the current noticing structure will remain. This alternative is not recommended since piloting the "Pay-as-You-Use" model will enable us to evaluate this alternative payment method.

NEXT STEPS

If the Board directs staff to implement a "Pay-as-You-Use" model, a detailed plan, cost estimate,

necessary resources, and schedule will be developed for the pilot; staff will return to the Board as necessary regarding progress toward implementation.

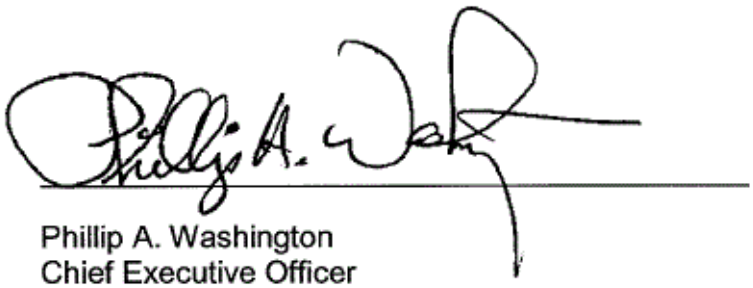
Staff will continue to monitor the performance of the corridor and will address alternative payment models as part of a larger Metro ExpressLanes policy review as necessary unless otherwise directed by the Board

ATTACHMENTS

Attachment A - Board Motion 42
Attachment B - FY18 Performance Report
Attachment C - Demographic Analysis of Express Lane Regions
Attachment D - Comparison Chart
Attachment E - Surcharge Assumptions and Costs

Prepared by: Son Tran, Transportation Planner, (213) 922-5592
Robert Campbell, Manager Transportation Planning, (213) 418-3170
Silva H. Mardrussian, Senior Manager Transportation Planning, (213) 418-3132
Tim Lew, Senior Manager Transportation Planning, (213) 418-3134

Reviewed by: Shahrzad Amiri, Executive Officer, Congestion Reduction, (213) 922-3061



Phillip A. Washington
Chief Executive Officer

ATTACHMENT A

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

Board Report

File #: 2018-0194, **File Type:** Motion / Motion Response **Agenda Number:** 42.

~~REGULAR BOARD MEETING~~
APRIL 26, 2018

Motion by:

HAHN as amended by DUPONT-WALKER

Metro ExpressLanes officially began with a US Department of Transportation Grant in April 2008, which would convert existing High Occupancy Vehicle (HOV) lanes into dynamically-priced high-occupancy toll (HOT) lanes. This initial congestion pricing pilot project was specifically designed to reduce congestion along two of the Los Angeles region's most impacted freeways: the I-110 and I-10. Metro ensures the ExpressLanes maintain traffic flow, prevent them from being overloaded, and maintain a federally mandated minimum speed of 45 miles per hour.

Many of Metro's goals - expanding the rail and bus network, investing in active transportation, and connecting us throughout the Los Angeles region, aim to achieve some level of reduced congestion and fewer vehicle miles traveled. Metro is now looking at expanding the ExpressLanes to the I-105 Freeway.

I believe that Metro should continue to review the Express Lanes program and ensure it continues to meet its commitment to ease freeway congestion and improve the quality of life for Los Angeles County residents. Metro should also study toll systems in other large jurisdictions, <u>giving priority to those with similar demographics;</u> and explore ways that the Express Lanes can be made available to more drivers.

SUBJECT: MOTION BY HAHN AS AMENDED BY DUPONT-WALKER
<u>FEASIBILITY STUDY ON EXPRESSLANES</u>

APPROVE Motion by Hahn as amended by Dupont-Walker that the CEO report back in 180 days to the Board on:

A. The current performance of the ExpressLanes;

B. A comparison of the Metro ExpressLanes system to other major congestion-pricing toll systems in the country; and

C. The viability of Metro ExpressLanes implementing a "Pay-as-You-Use" model for all drivers.

METRO EXPRESSLANES

Operations Performance Report

FISCAL YEAR 2018
(ENDING JUNE 30, 2018)

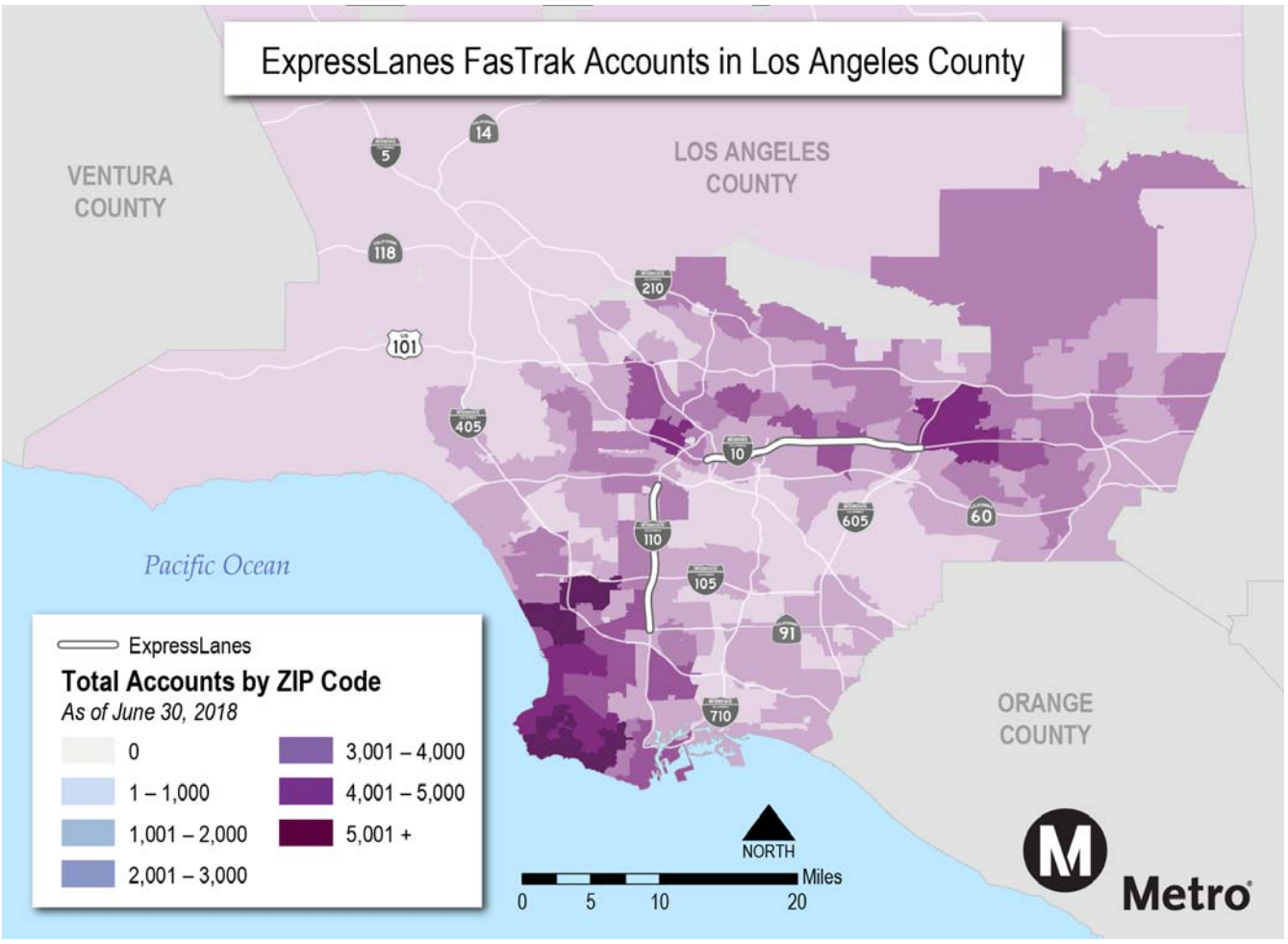
Metro

Program Highlights

Operational Totals through June 30, 2018

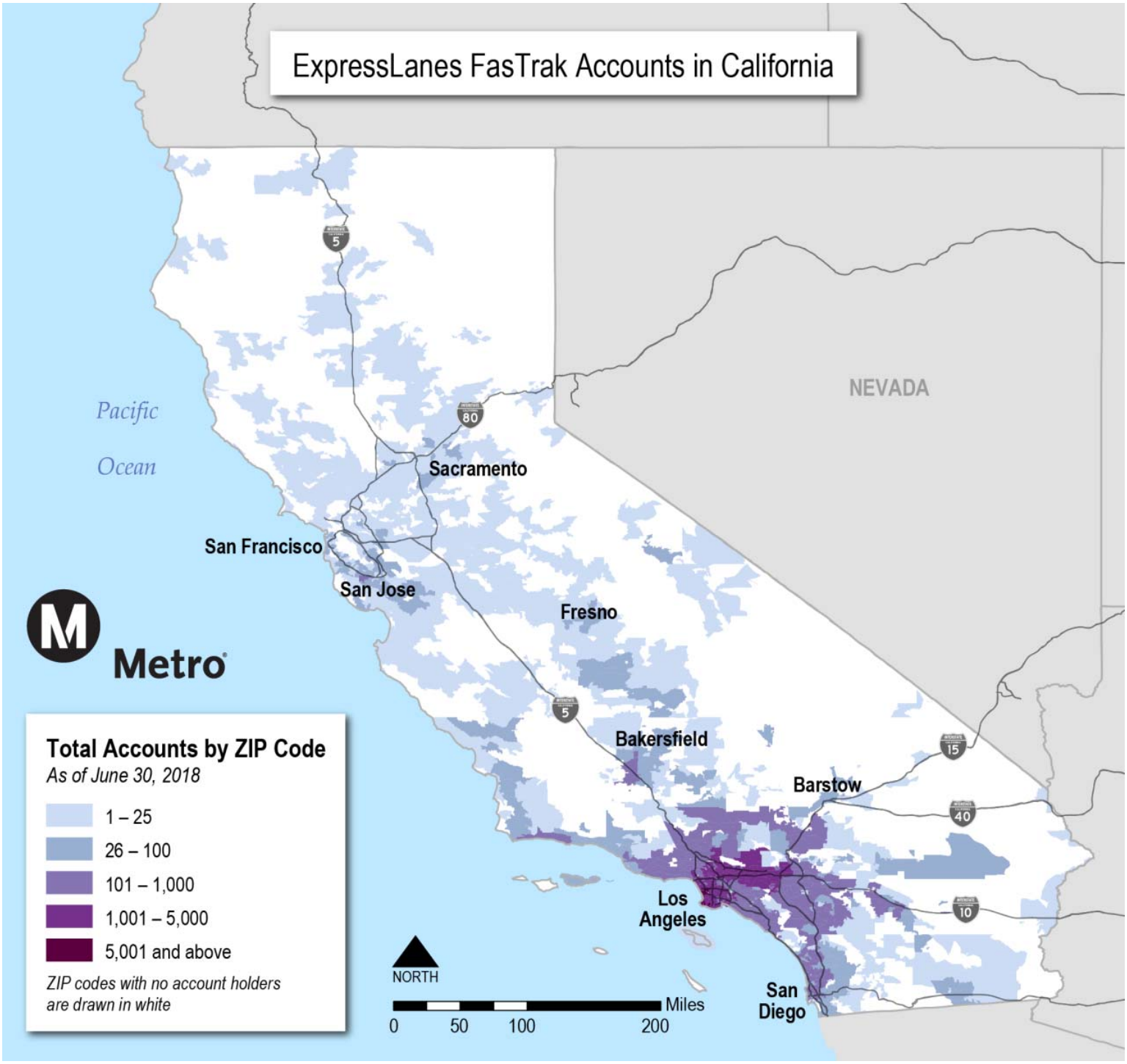
TOTAL VEHICLE TRIPS		**195,331,723**
	I-110 TRIPS: 125,407,606	I-10 TRIPS: 69,924,117
TOTAL ACCOUNTS OPENED		**702,500**
	LOW-INCOME ASSISTANCE PLAN ACCOUNTS	17,049
	TAP REWARDS REGISTERED ACCOUNTS	18,384
TOTAL TRANSPONDERS ISSUED		**872,966**

ExpressLanes Customers in Los Angeles County



Metro

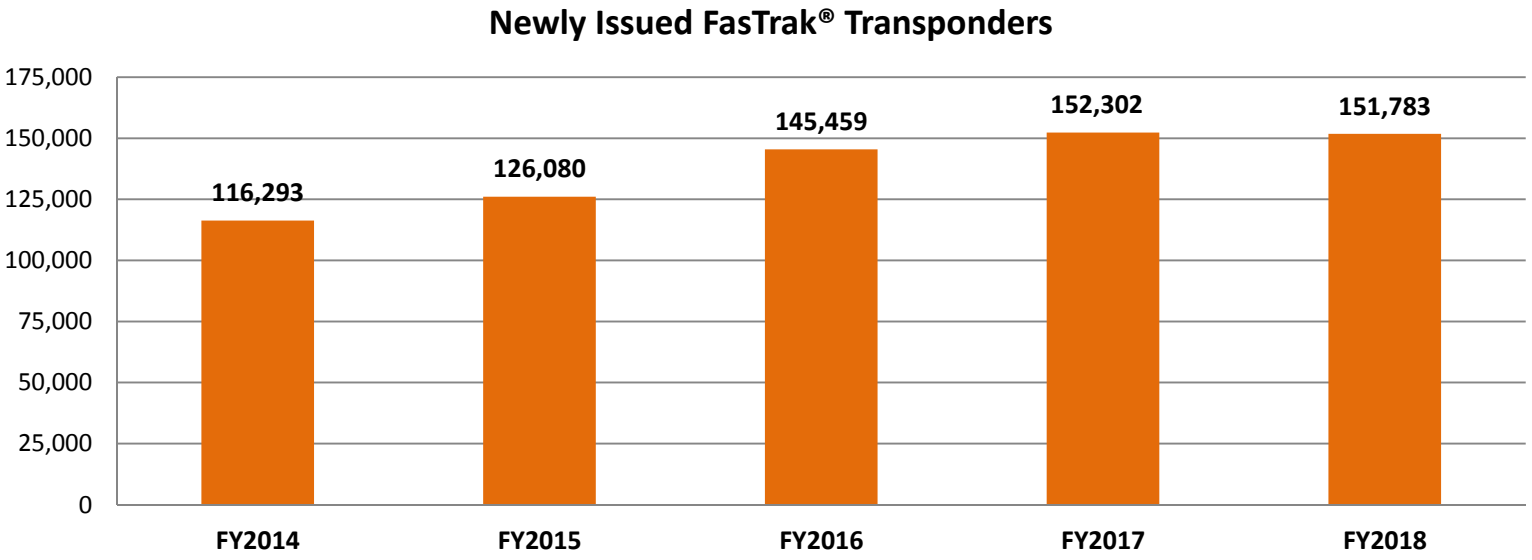
ExpressLanes Customers in California



Metro

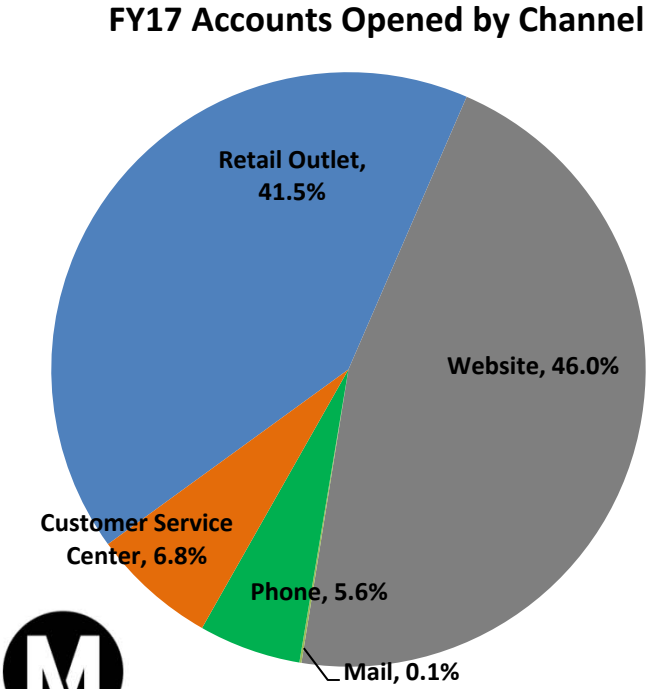
FasTrak® Transponder Adoption

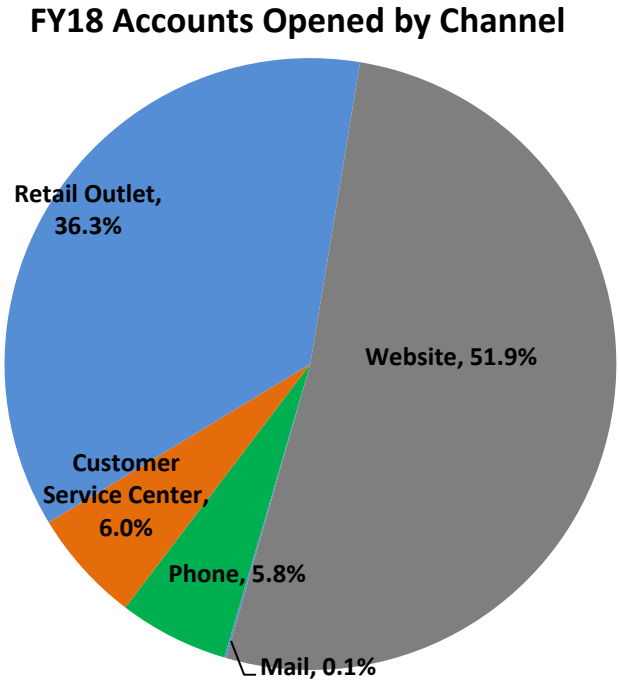
The demand for Metro ExpressLanes FasTrak® transponders continues to grow. A total of 872,966 transponders have been issued through June 30, 2018 and a total of 702,500 accounts have been opened. In 2018, transponder adoption was at the second highest level in the 5 full years of operations.



Account Opening Channel

In FY18 our website, metroexpresslanes.net, was the largest channel for transponder distribution, followed by our retail partners. Customers can purchase a FasTrak® transponder at participating AAA, Costco, and Albertsons locations in Los Angeles County. Account openings on the web saw an increase from 2017 to 2018, with almost 52% of accounts opened on the website.

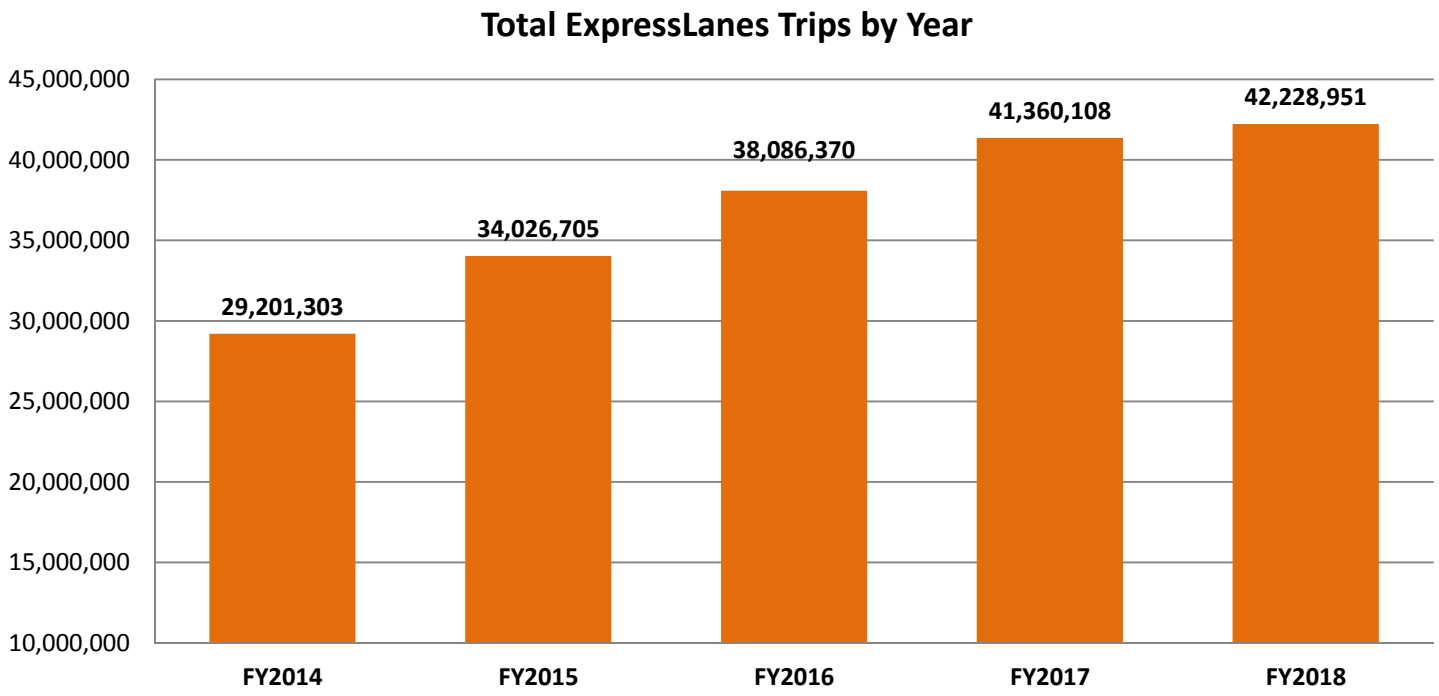




Metro

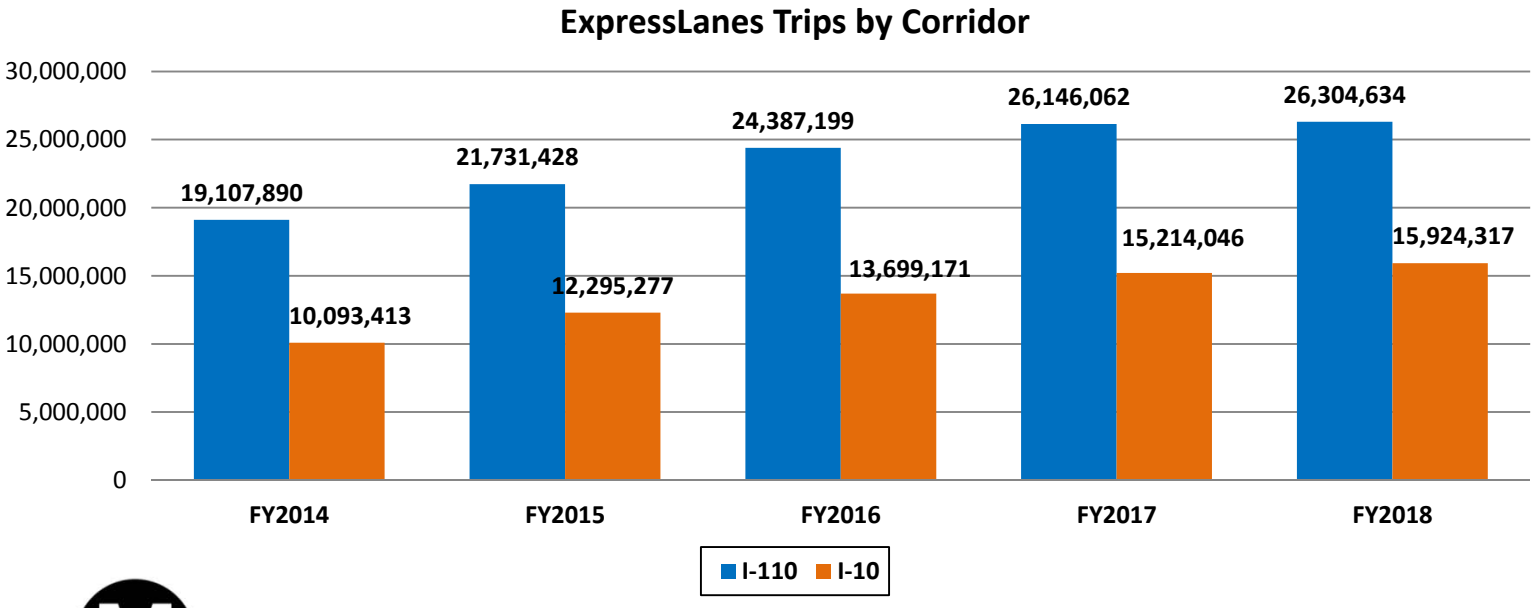
ExpressLanes Trips

Vehicle trips on the ExpressLanes increased by 2.1% in FY18 compared to FY17. A total of 195,331,723 trips have been taken on the ExpressLanes from opening November 10, 2012 through June 30, 2018.



Trips by Corridor

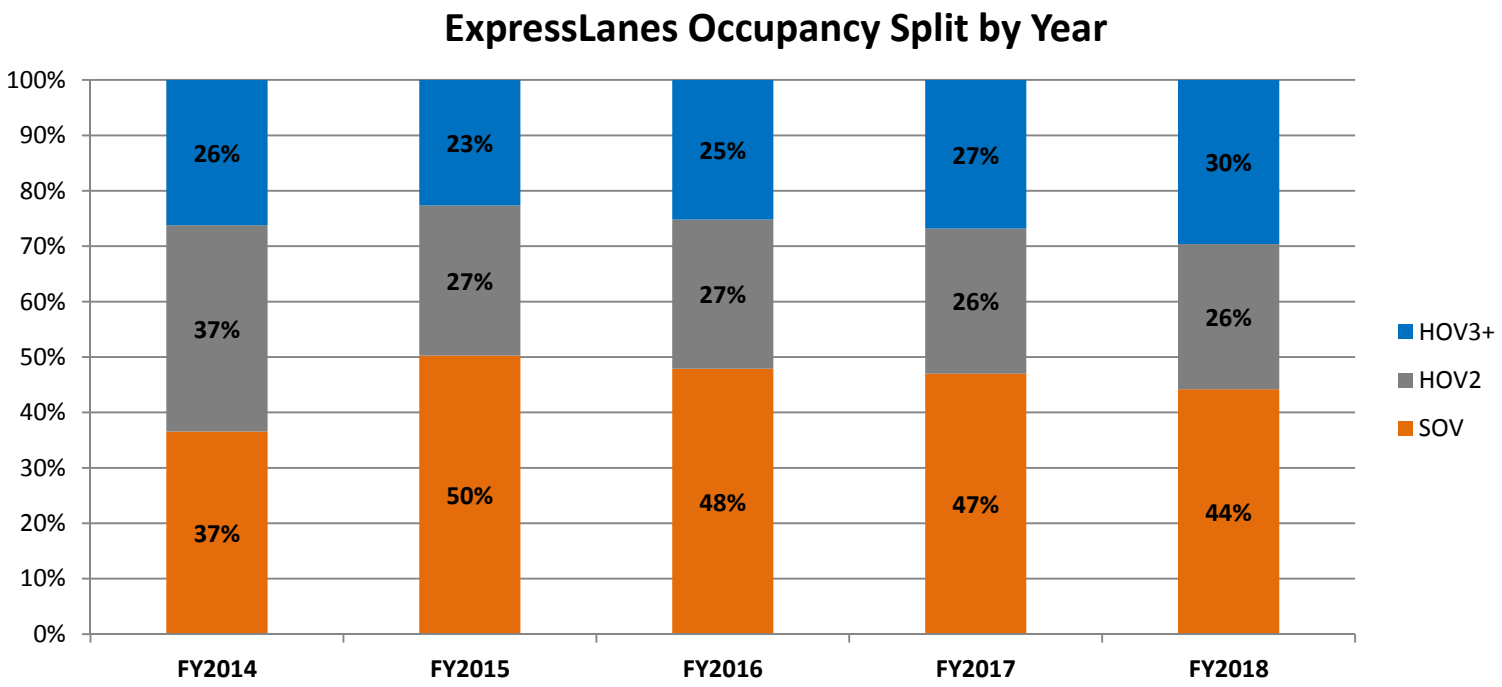
The I-110 corridor continues to have higher trip volumes than the I-10 corridor. However, I-110 trips only increased by .61% in FY18 compared to a 4.67% increase on the I-10 corridor.



Metro

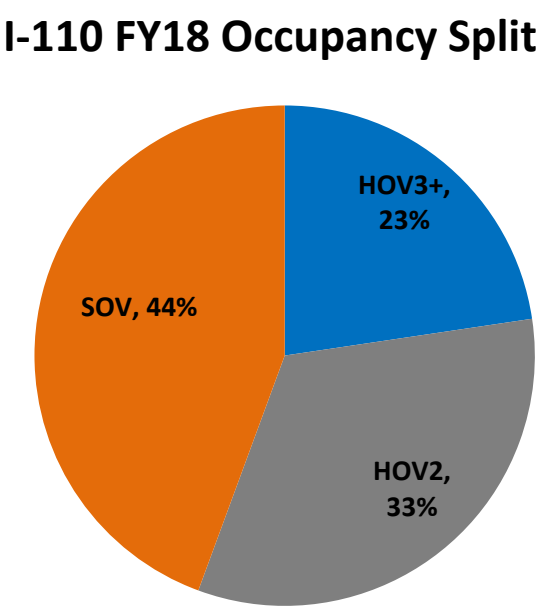
Mode Split

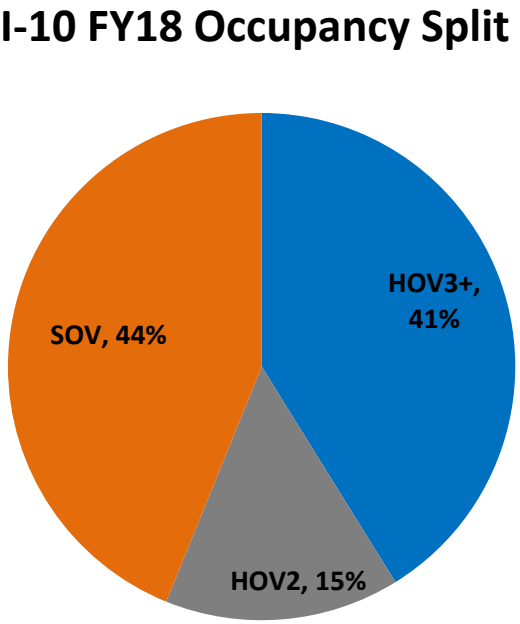
In FY18 HOV2 and HOV3+ continued to slightly increase over Single Occupant (SOV) trips.



Mode Split by Corridor

The I-110 corridor has a significantly lower percentage of HOV3+ trips than the I-10 corridor. This is most likely due to the toll free status of HOV2 customers on the I-110 at all times compared to the HOV2 customers paying a toll during AM and PM peak times on the I-10.

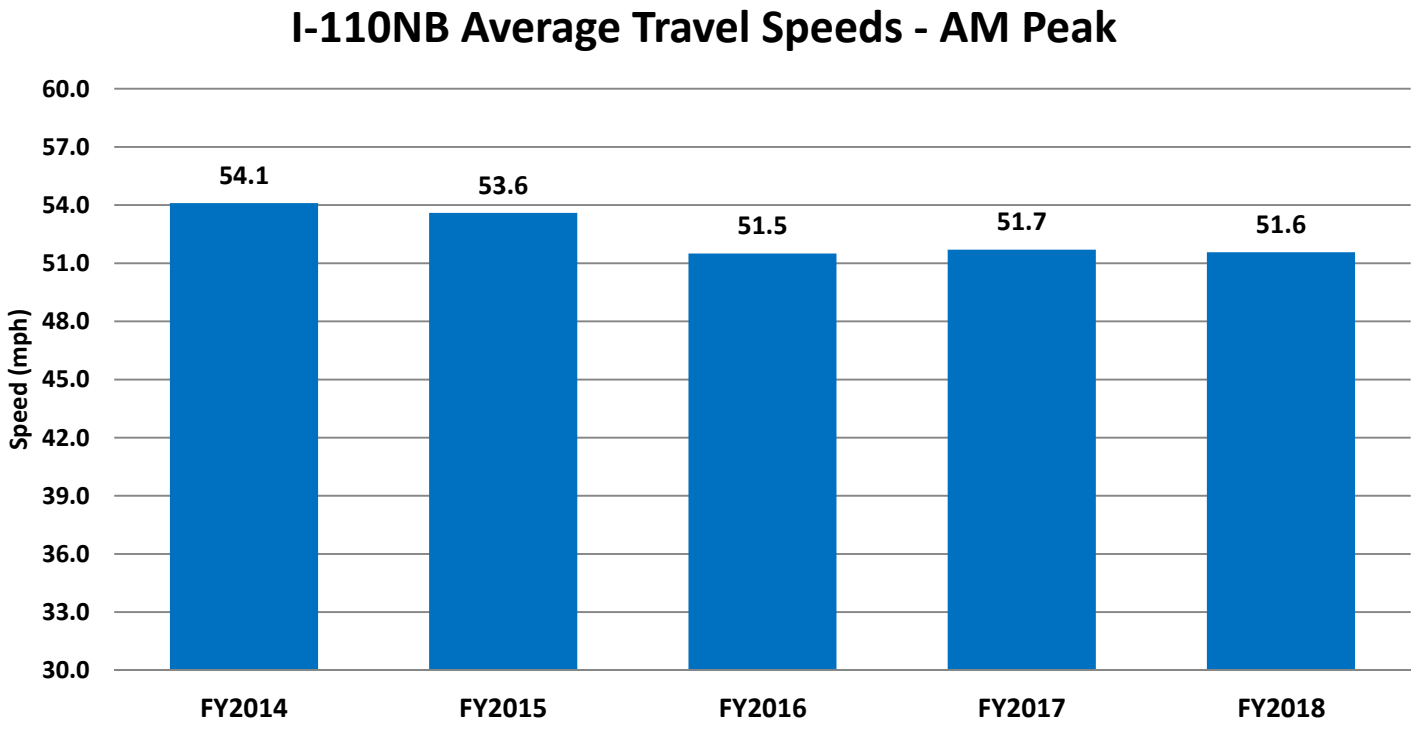


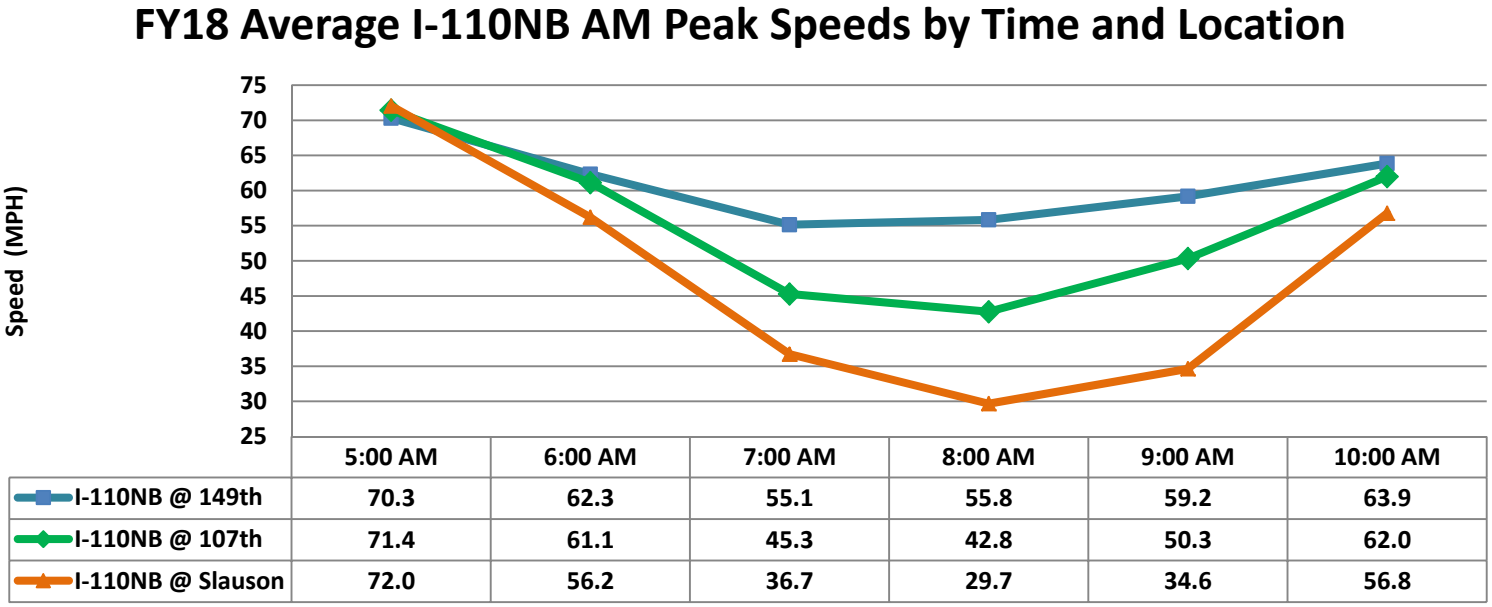


Metro

I-110 ExpressLanes Average Travel Speeds During Morning Peak

Average travel speeds during the year have remained above 45mph for the entire AM peak period. In FY18, speeds remained relatively unchanged from FY17 on the I-110 northbound. However, average speeds fluctuated during the morning peak depending upon the location and time. The number of vehicles in the ExpressLanes increases closer to downtown Los Angeles and between the hours of 7:00 AM and 9:00 AM causing speeds to decrease. In FY18, speeds were slowest near Slauson Avenue around 8:00 AM.





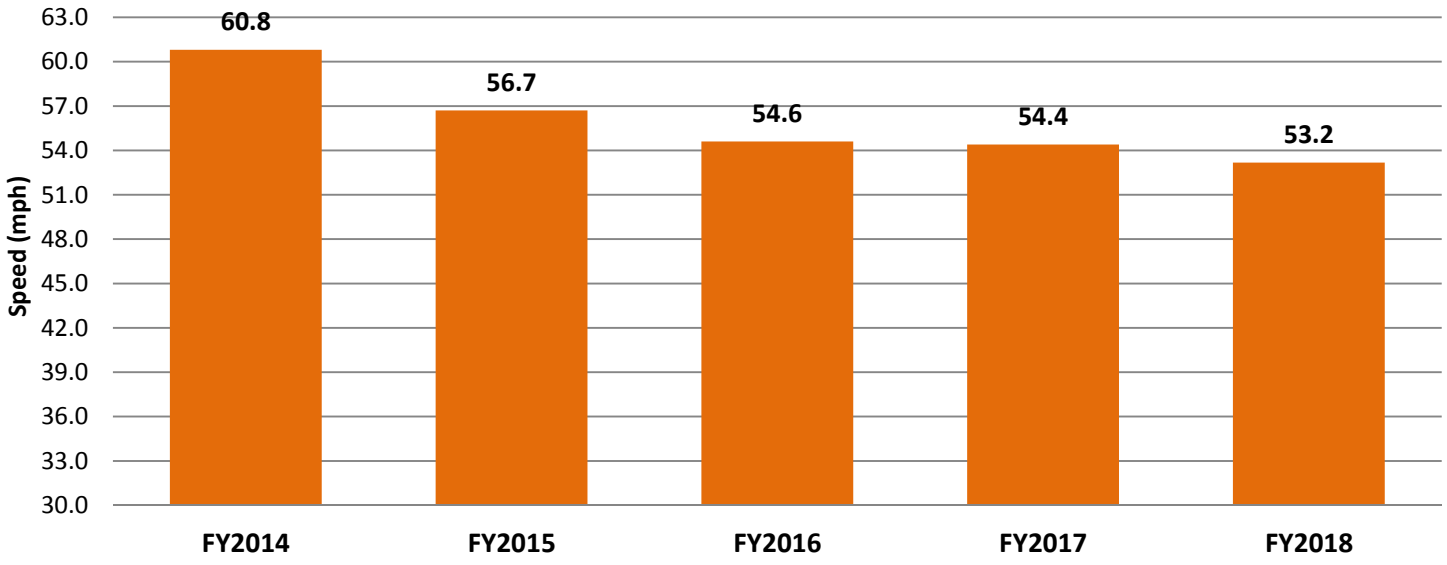
	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM
I-110NB @ 149th	70.3	62.3	55.1	55.8	59.2	63.9
I-110NB @ 107th	71.4	61.1	45.3	42.8	50.3	62.0
I-110NB @ Slauson	72.0	56.2	36.7	29.7	34.6	56.8

Metro

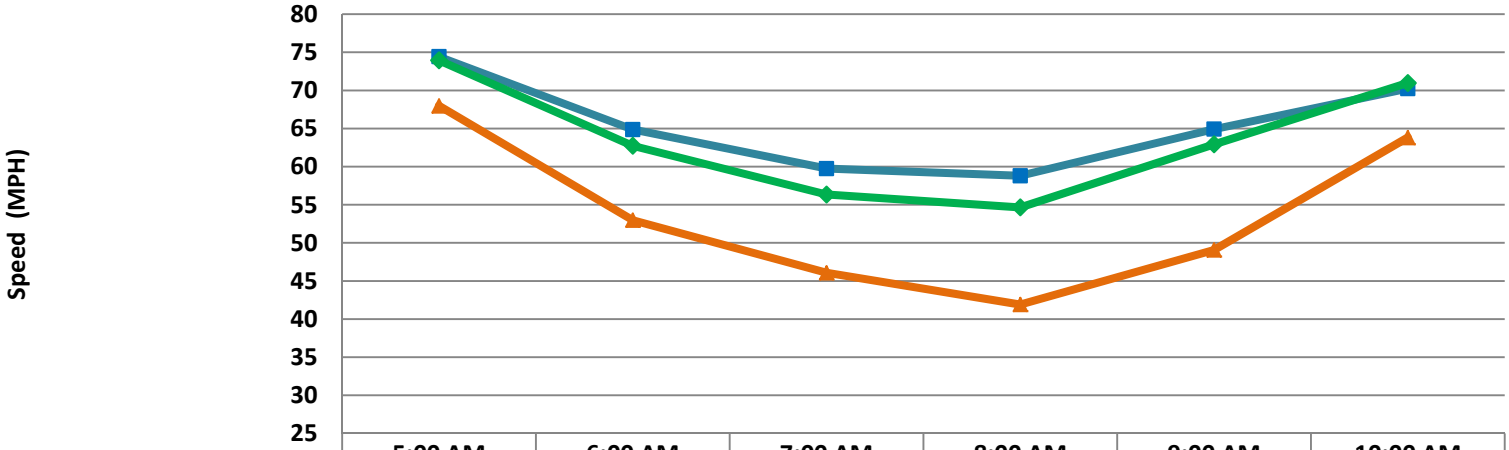
I-10 ExpressLanes Average Travel Speeds During Morning Peak

Average travel speeds during the year have remained above 45mph for the entire AM peak period. In FY18, speeds decreased by 2% from FY17 on the I-10 westbound. Average speeds fluctuate during the morning peak depending upon the location and time. The number of vehicles in the ExpressLanes increases closer to downtown Los Angeles and between the hours of 7:00 AM and 9:00 AM causing speeds to decrease. In FY18, speeds were slowest near the Cal State Los Angeles exit around 8:00 AM.

I-10WB Average Travel Speeds - AM Peak



FY18 Average I-10WB AM Peak Speeds by Time and Location

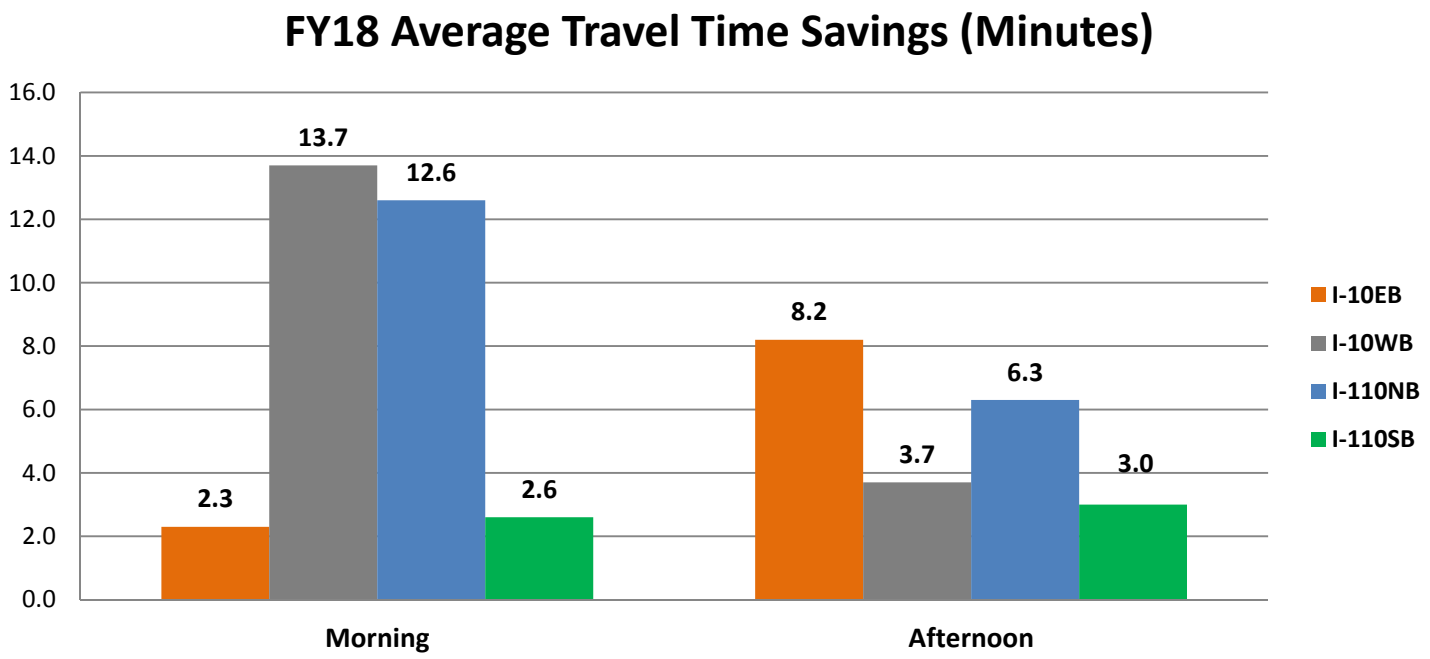


	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM
I-10WB @ Baldwin	74.4	64.9	59.7	58.8	64.9	70.2
I-10WB @ Almansor St.	73.9	62.7	56.3	54.7	62.9	71.0
I-10WB @ Cal State LA	68.0	53.0	46.1	41.9	49.1	63.8

Metro

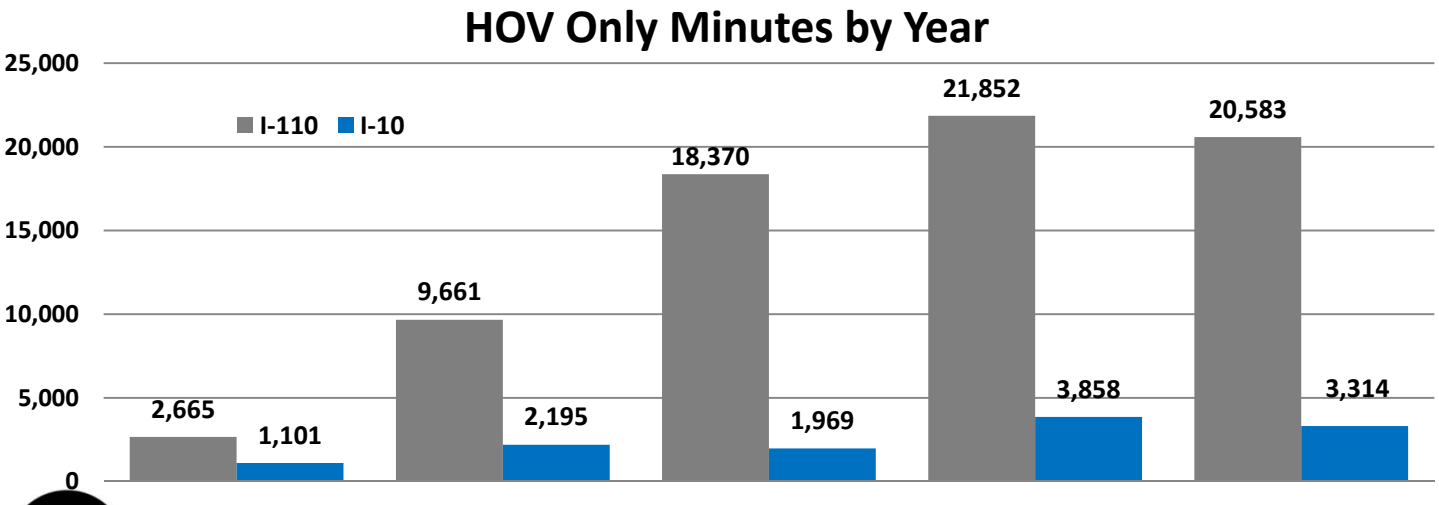
ExpressLanes Travel Times Savings Over General Purpose Lanes

Average speeds in the ExpressLanes remain higher than the average speeds in the General Purpose (GP) Lanes. Travel time tests were performed on the ExpressLanes in the morning and afternoon peak times. Morning peak travelers saved up to an average of over 13 minutes when in the ExpressLanes compared to the GP lanes. Afternoon travelers saved up to an average of 8 minutes in the ExpressLanes compared to the GP lanes.



HOV Only Status

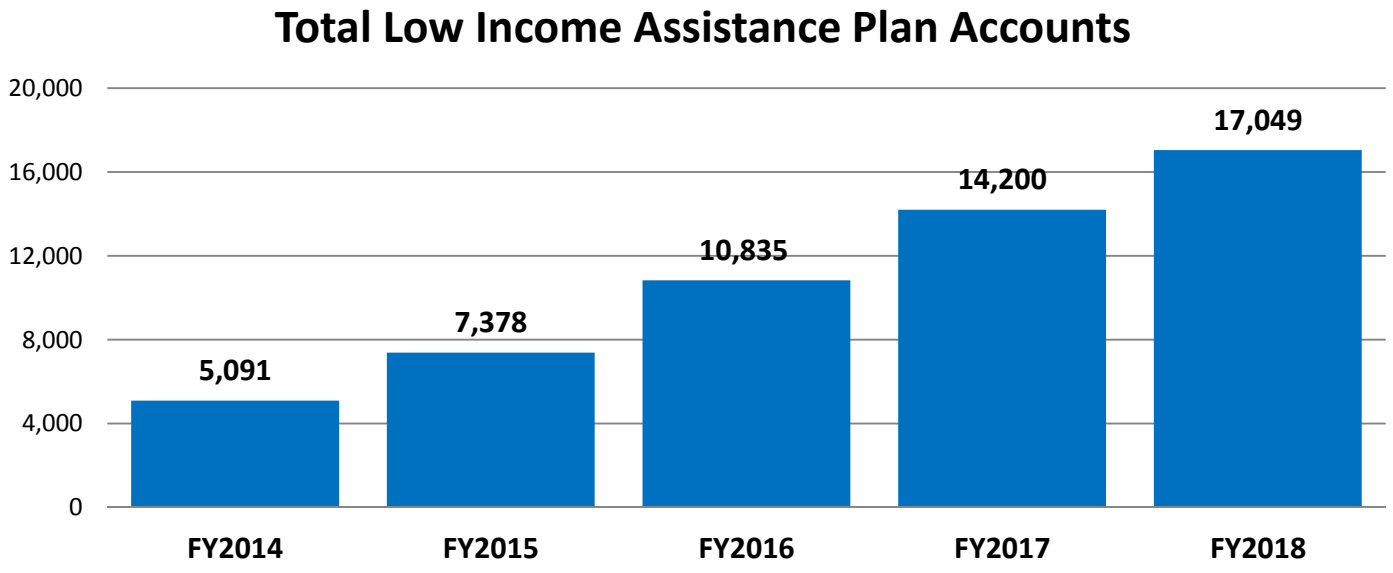
When the average vehicle speed begins to fall below 45mph on a segment of the lanes, the lanes go into HOV Only status, precluding SOV drivers from entering the lanes to help alleviate some congestion. Due to the higher vehicle volumes and lower HOV requirement, the I-110NB goes into HOV Only status more frequently than the I-10WB. FY18 HOV Only minutes decreased by 5.8% on the I-110 and 14.1% on the I-10 due to further refinement of the dynamic pricing algorithm.



Metro

ExpressLanes Customer Incentives – Low Income Assistance Plan

Residents of Los Angeles County with an annual household income equal to or less than double the federal poverty level qualify for a one-time credit of $25 and an automatic waiver of the monthly account maintenance fee. Although the number of new accounts opened was less in FY18 than FY17, the total number of accounts increased by 20% to 17,049. Increased outreach and marketing is planned for FY19 in an effort to increase customer participation in the program.



Low Income Assistance Plan Outreach

Metro ExpressLanes provides outreach at different community events, festivals, and transportation workshops throughout the year to promote the plan. During FY18 multiple campaigns advertised the program on bus cards (spring 2018), billboards (spring 2018), and online ads (winter 2017 to spring 2018).

Metro

ExpressLanes Customer Incentives – Transit Rewards

Transit riders that register a TAP card on their ExpressLanes account can earn a $5 toll credit each time they take 16 one-way transit trips during peak hours on the I-110 Harbor Transitway or the I-10 El Monte Busway. Since the opening of the ExpressLanes, 749,000 qualifying transit trips have been taken and $179,960 in rewards have been issued.

ExpressLanes Customer Incentives – Carpool Loyalty

The Carpool Loyalty Program automatically enters Metro ExpressLanes customers into a monthly drawing for a chance to win gift cards and toll credits when they use the ExpressLanes with a FasTrak® set to HOV2 or HOV3 status. Since the inception of the program, $45,000 in gift cards and toll credits have been given to carpoolers.

Metro

ExpressLanes Customer Appreciation – 5th Year Anniversary

The Metro ExpressLanes celebrated the 5th anniversary of operations in FY18. The I-110 ExpressLanes opened November 10, 2012 and the I-10 on February 23, 2013. In appreciation of our customers, all tolls were reversed for trips taken on the anniversary date of each corridor. In addition, Metro ExpressLanes staff recognized customers with the longest active accounts; provided all Low-Income Assistance Program participants with toll credits; and with support from Metro Operations, provided transit riders at the El Monte and Harbor Gateway Transit centers with ExpressLanes branded giveaways.

Metro ExpressLanes giveaways were provided to transit riders at the Harbor Gateway Transit Station November 6-9, 2017. (Above)

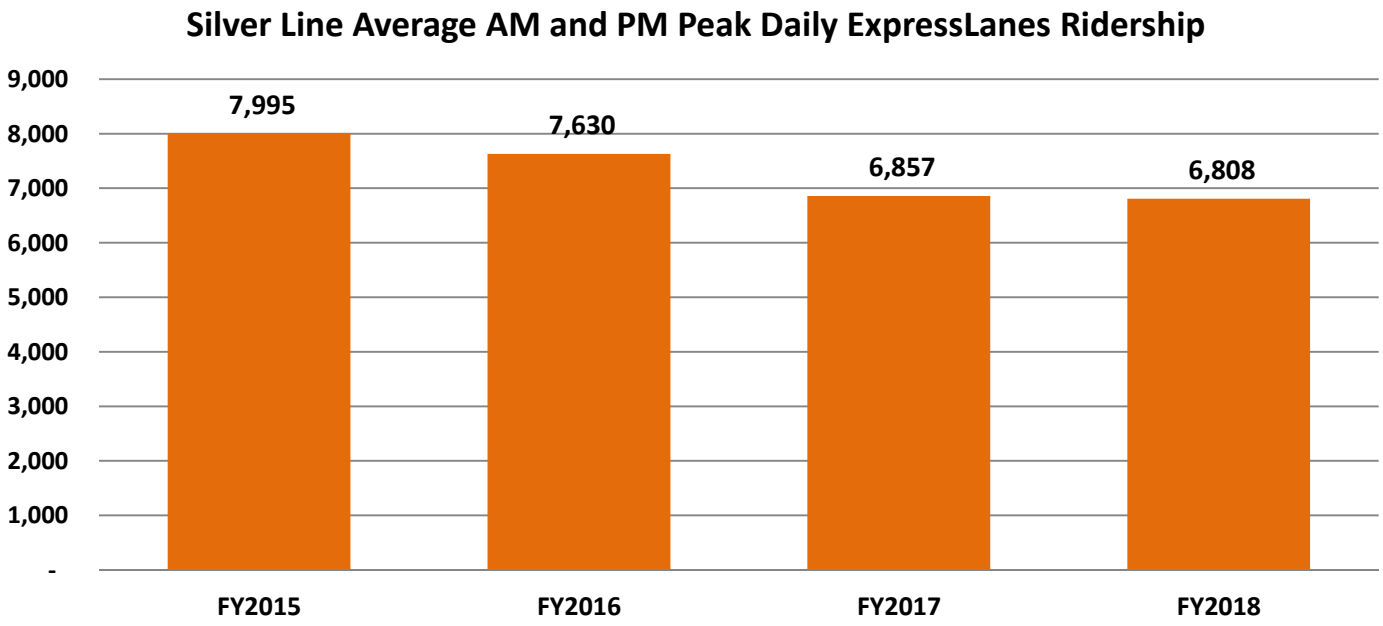
Transit riders were able to learn more about Metro ExpressLanes and receive giveaways at the El Monte Station February 19-23, 2018. (Left)

Messaging signs on the ExpressLanes had an appreciation message for customers on the I-110 and I-10 anniversary dates. (Above)

Metro

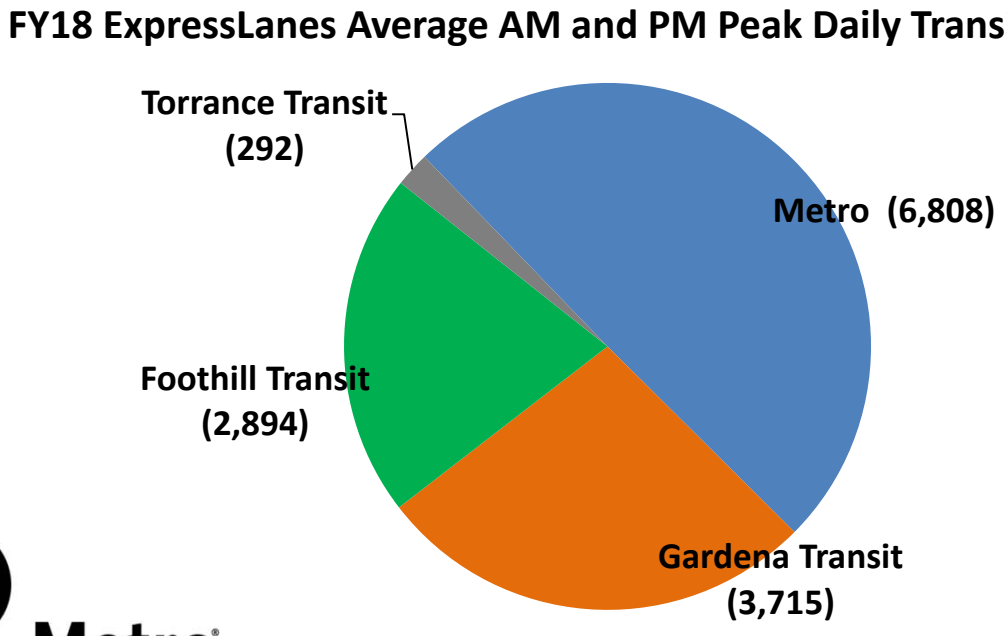
Silver Line Transit Ridership on the ExpressLanes

The Metro Silver Line operates as a Bus Rapid Transit (BRT) system on the I-110 and I-10 ExpressLanes. Silver Line ridership on the ExpressLanes during the peak periods has decreased by 0.71%, compared to overall Silver Line ridership increase of 2.3% in FY18.



FY18 Transit Ridership on the ExpressLanes

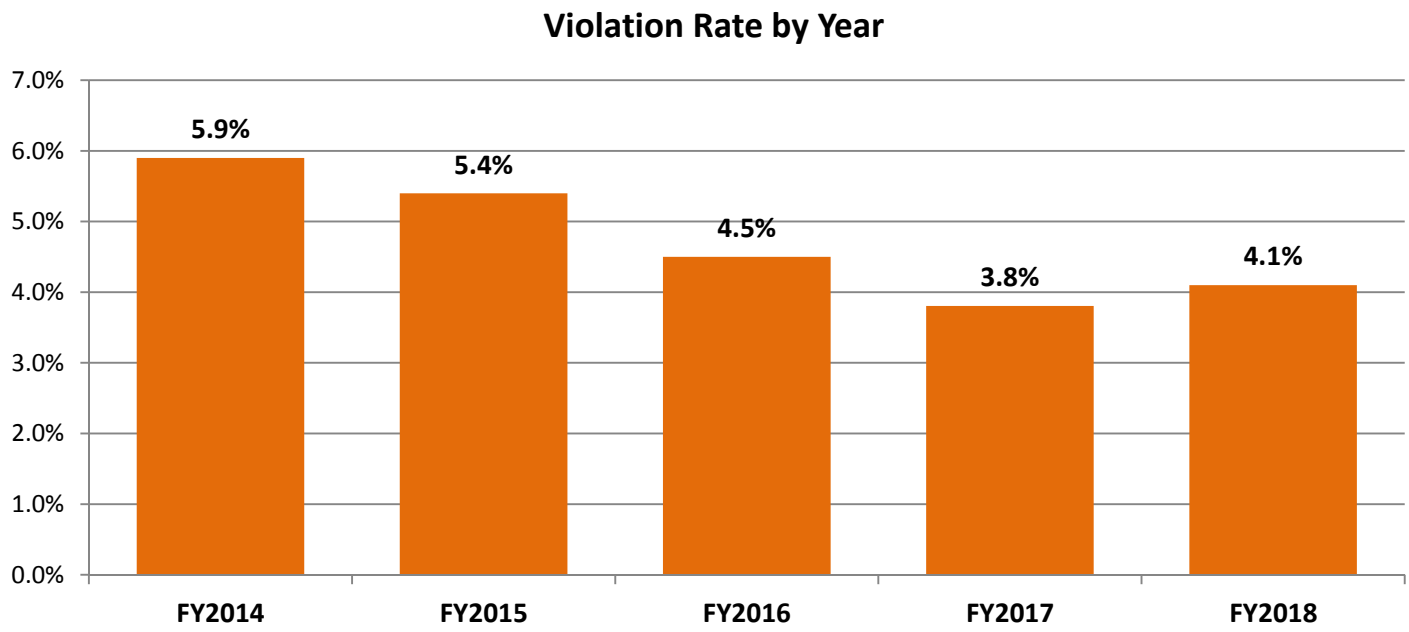
In addition to the Metro Silver Line, Foothill Transit, Gardena Transit and Torrance Transit operate on the I-110 and I-10 ExpressLanes. In FY18 an average of 13,709 passengers were transported by these agencies during the AM and PM peak periods.



Metro

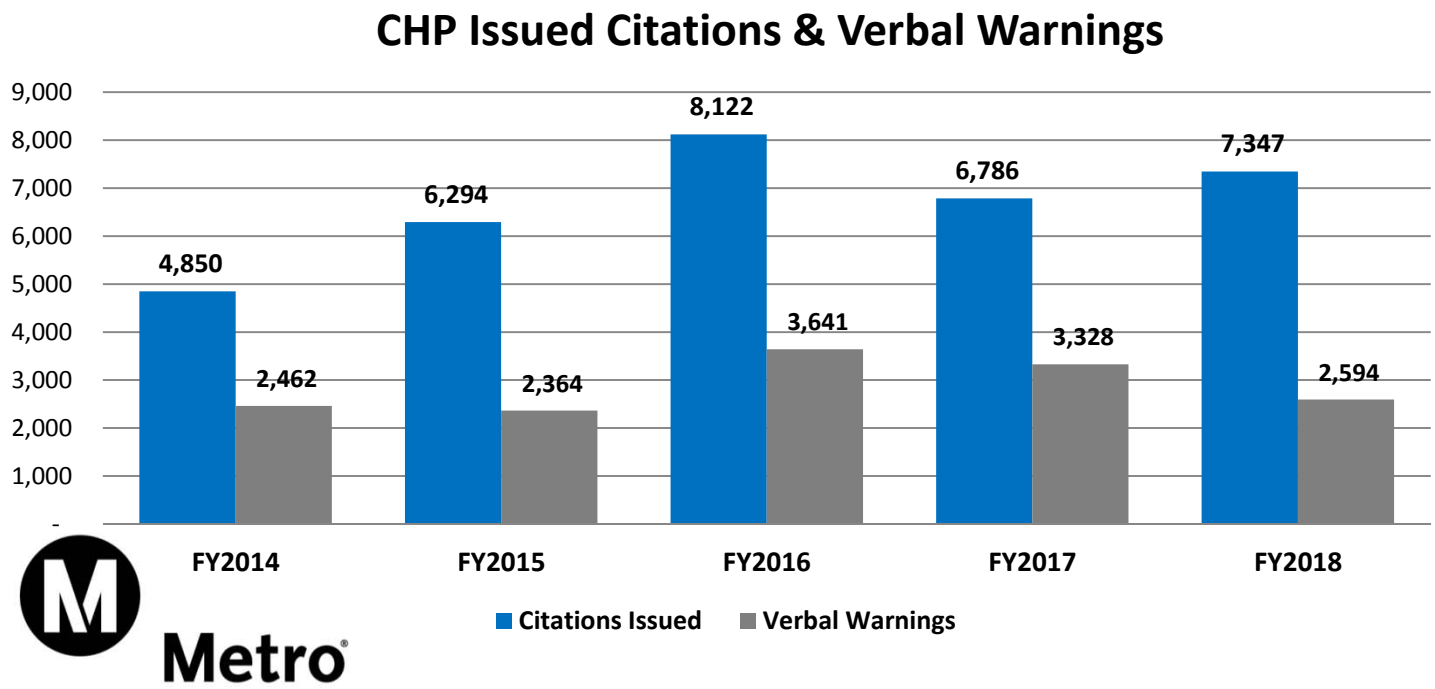
ExpressLanes Safety & Enforcement – Violations Issued

Metro ExpressLanes issues a notice of toll evasion violation when vehicles travel the ExpressLanes without a valid FasTrak® transponder. As public awareness of the ExpressLanes increases, the percentage of violations issued decreases. There was a slight increase in the percentage of violations between FY17 and FY18. Nevertheless, the violation percentage is consistent with programs at the same level of maturity at the 5 year mark.



ExpressLanes Safety & Enforcement – CHP Activity

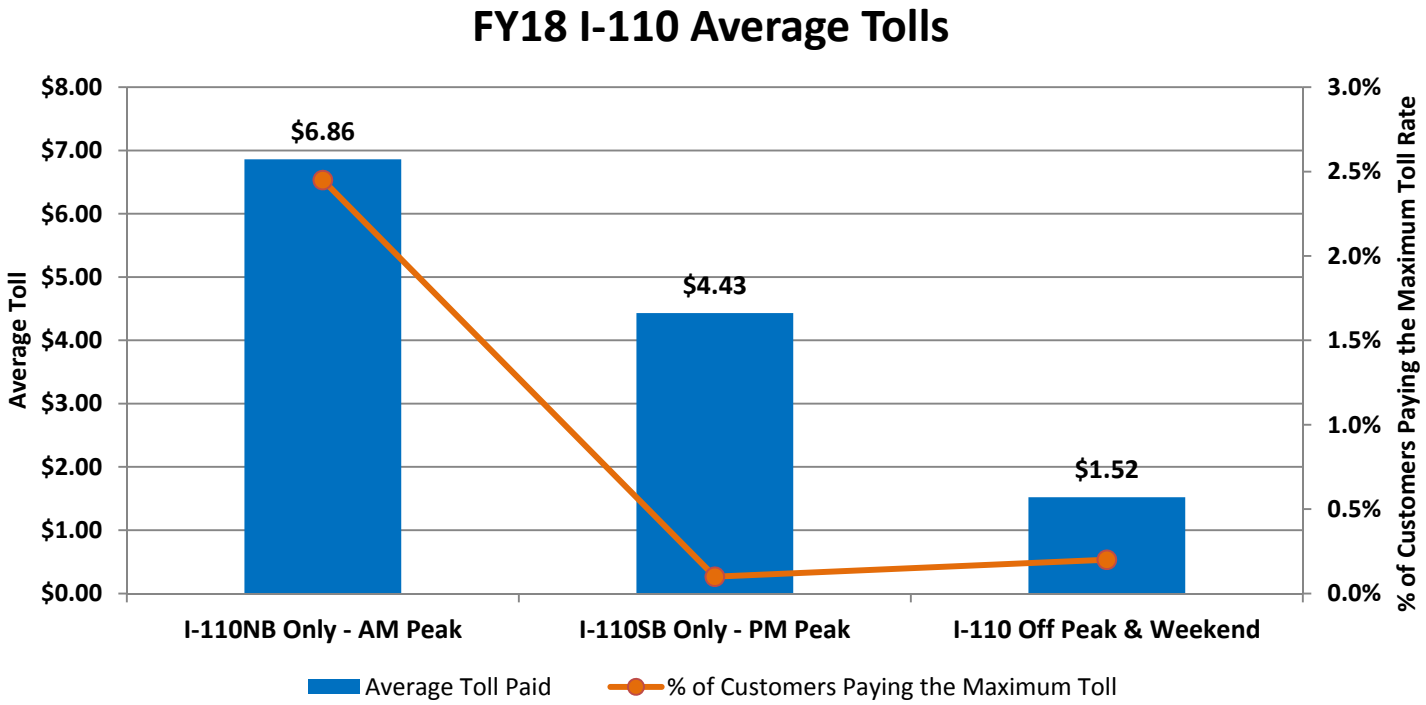
CHP officers are contracted to provide additional visual enforcement. CHP issues a toll/transponder related citation when a non-exempt vehicle is observed using the ExpressLanes without a transponder or the transponder switch setting does not match the observed vehicle occupancy. CHP issued citations increased by 8% from FY17 to FY18.

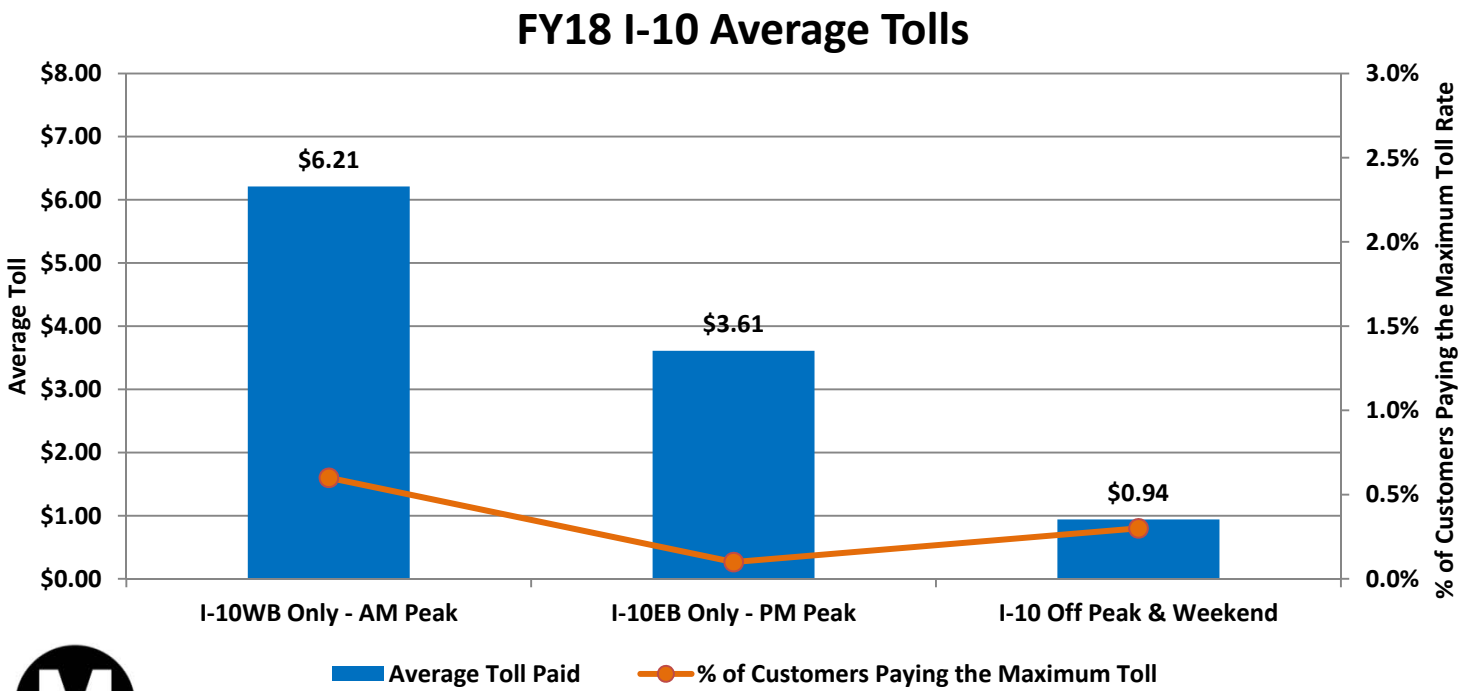


Metro

Average Tolls

Metro ExpressLanes uses a dynamic pricing algorithm to adjust the price of tolls according to the traffic volumes on the ExpressLanes. In FY18 the toll rates ranged from a minimum of $0.10 to a maximum of $2.00 per mile driven on the ExpressLanes. In FY18 the average toll during the AM Peak was $6.86 and $6.21 on the I-110NB and I-10WB respectively. Few customers pay the maximum toll rate; only 2.45% of I-110NB customers and 0.6% of I-10WB customers paid the maximum toll rates of $26.20 and $22.50, respectively during the AM Peak in FY18.





Metro

2018 Metro ExpressLanes Customer Survey

During August 2018 Metro ExpressLanes conducted a survey of our customers. The purpose of the Metro ExpressLanes 2018 Customer Survey was to gather feedback as part of Metro ExpressLanes' ongoing efforts to improve customer experience.

The survey included questions regarding Metro ExpressLanes use, proposed customer incentives/programs and potential modifications to toll-exempt carpool requirements. The survey was conducted August 1-15, 2018 and was sent to all Metro ExpressLanes customers with a valid email on file. In FY18 a total 81,748 customer responded. This was an 80% increase over 2017's 45,278 respondents.

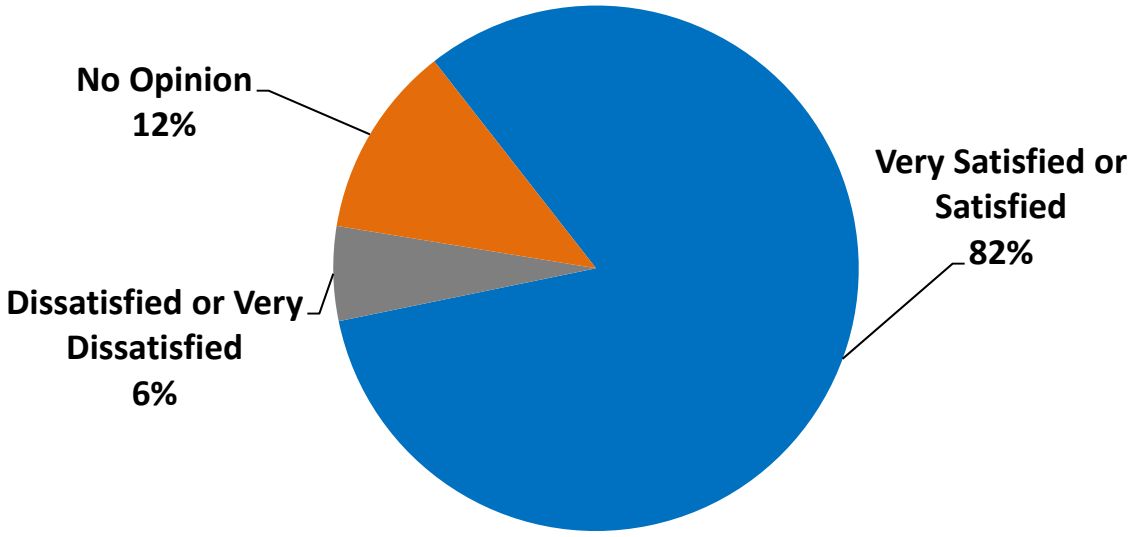
Respondents were evenly split between I-10 and I-110 users providing insight to customer travel patterns and awareness of business rules on both corridors. In general, customer satisfaction remains high and at or above the satisfaction levels of the 2017 customer survey.

Key 2018 customer surveys findings are listed on the following pages.

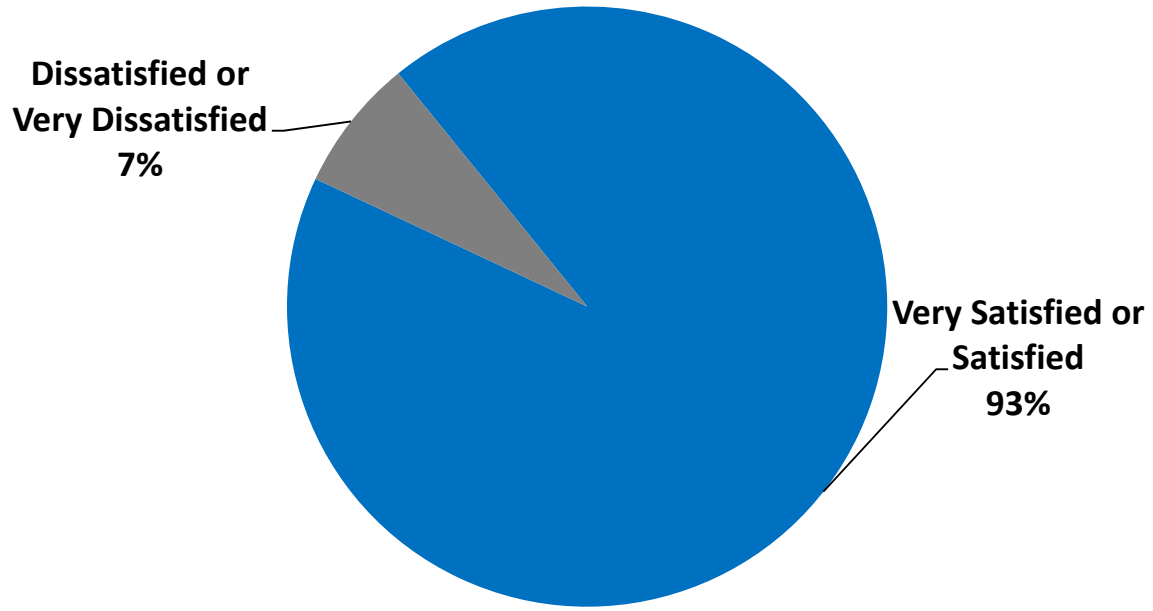
2018 Customer Survey – Customer Satisfaction

Customer satisfaction remains high for Metro ExpressLanes with 82% very or somewhat satisfied with Metro ExpressLanes customer service. Customers were very satisfied with the safety on Metro ExpressLanes which received a satisfaction rate at 93%.

How Satisfied are you with Metro ExpressLanes Customer Service?



How Satisfied are you with the Safety of the Metro ExpressLanes?

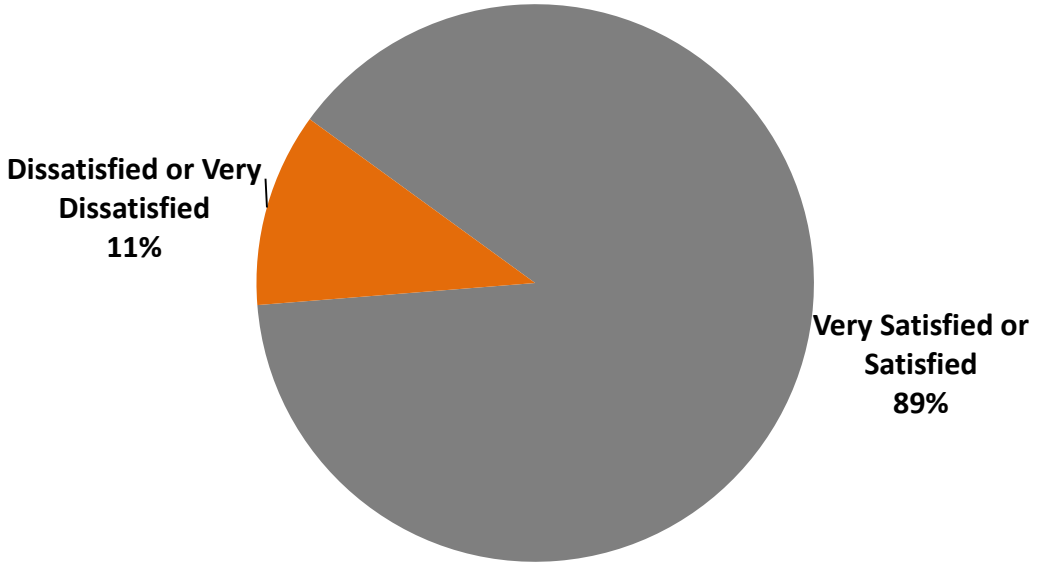


Metro

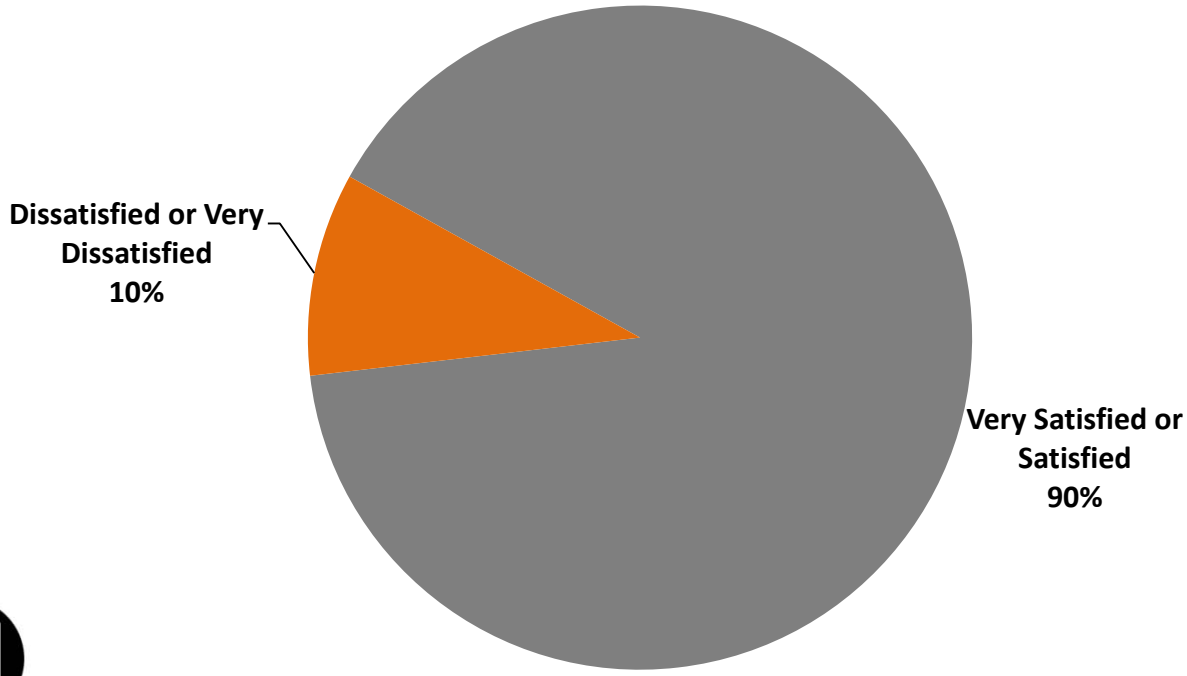
2018 Customer Survey – Customer Satisfaction

In FY18, customer satisfaction is high for Metro ExpressLanes with speeds and the time saved relative to the toll spent at 89% and 90%.

How Satisfied are you with the Speed you can Maintain in the Metro ExpressLanes?



How Satisfied are you with the time saved relative to the toll paid for the Metro ExpressLanes?

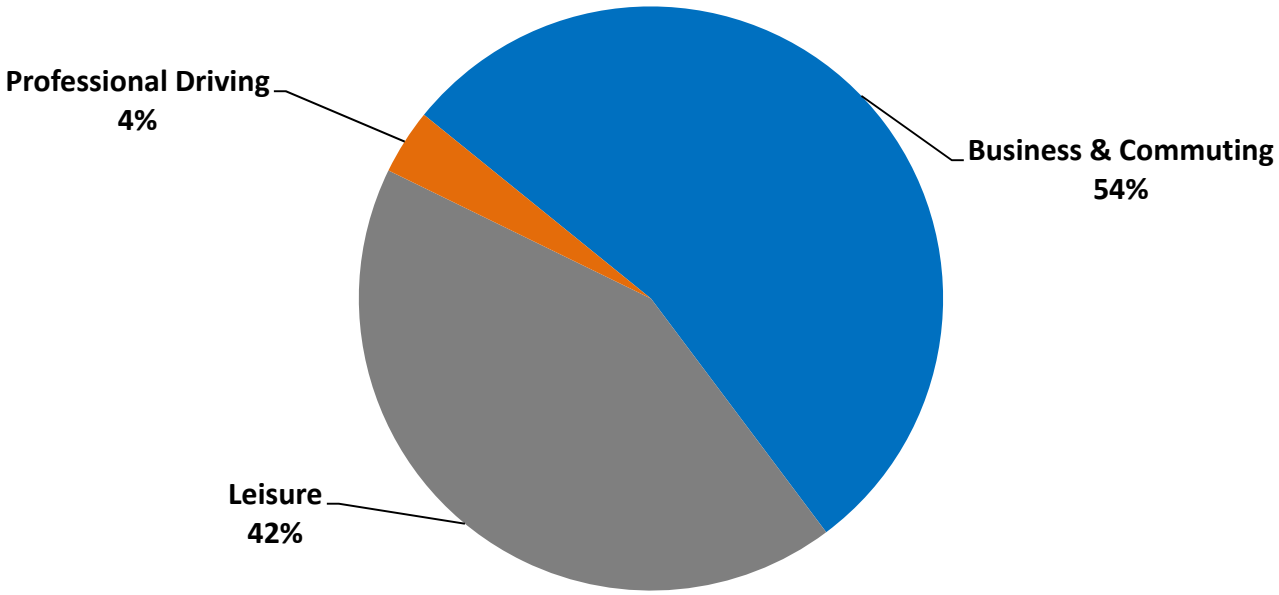


Metro

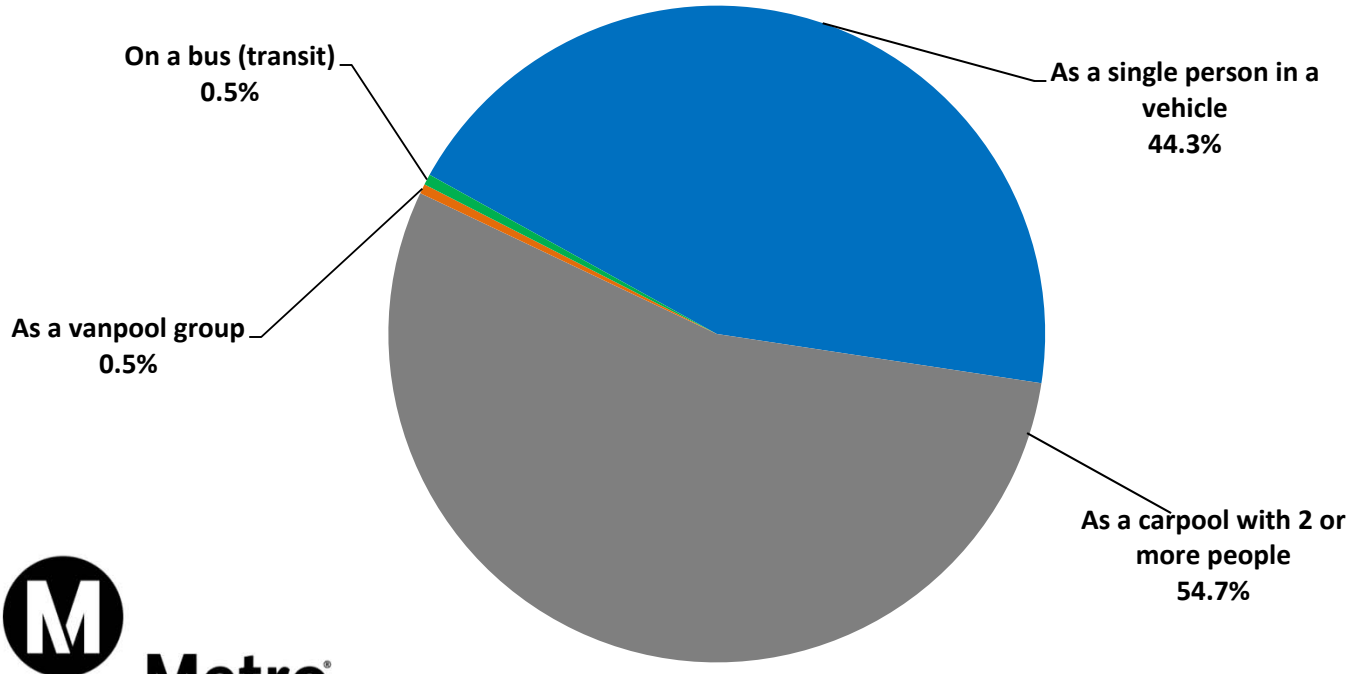
2018 Customer Survey - Usage

54% of respondents used the ExpressLanes for work and business related (commuting, meetings, deliveries, etc.) trips while 42% of survey respondents used the ExpressLanes for leisure activities (errands, day trips, etc.). On weekdays, survey respondents drove alone 44% of the times, travelling on a bus or in a vanpool about 1% of the time.

What is your Main Purpose for Travelling on the Metro ExpressLanes?



How do you Typically Travel on the Metro ExpressLanes on Weekdays?

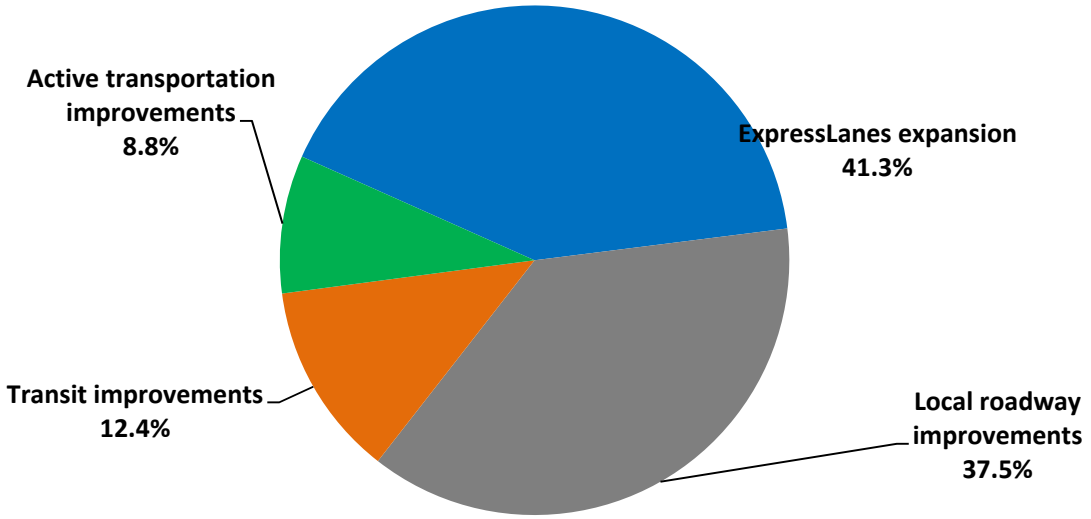


Metro

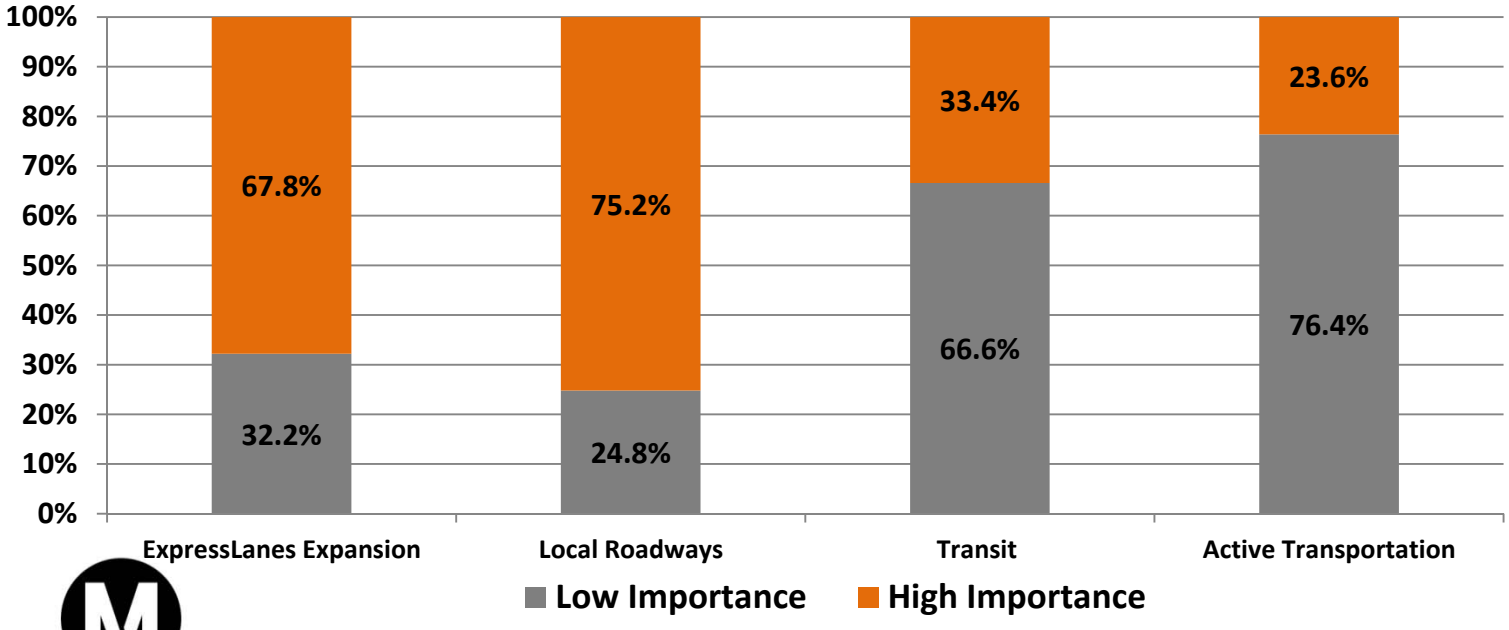
2018 Customer Survey – New Initiatives

Customers were asked to rank the importance of different ways to mitigate traffic congestion. If they could only choose one thing, 41% of customers believe that expanding ExpressLanes onto other corridors would be the best way to mitigate congestion. However, when ranking strategies as high or low importance, 75% of customers ranked local roadway improvements and 68% ranked ExpressLanes expansion as high importance. Only 24% of customers ranked active transportation improvements (walking and biking) as high importance.

Which of the Following do you Think is the Most Important in Mitigating Traffic Congestion in LA County



How Important do you Think Each will be in Mitigating Traffic in LA County?

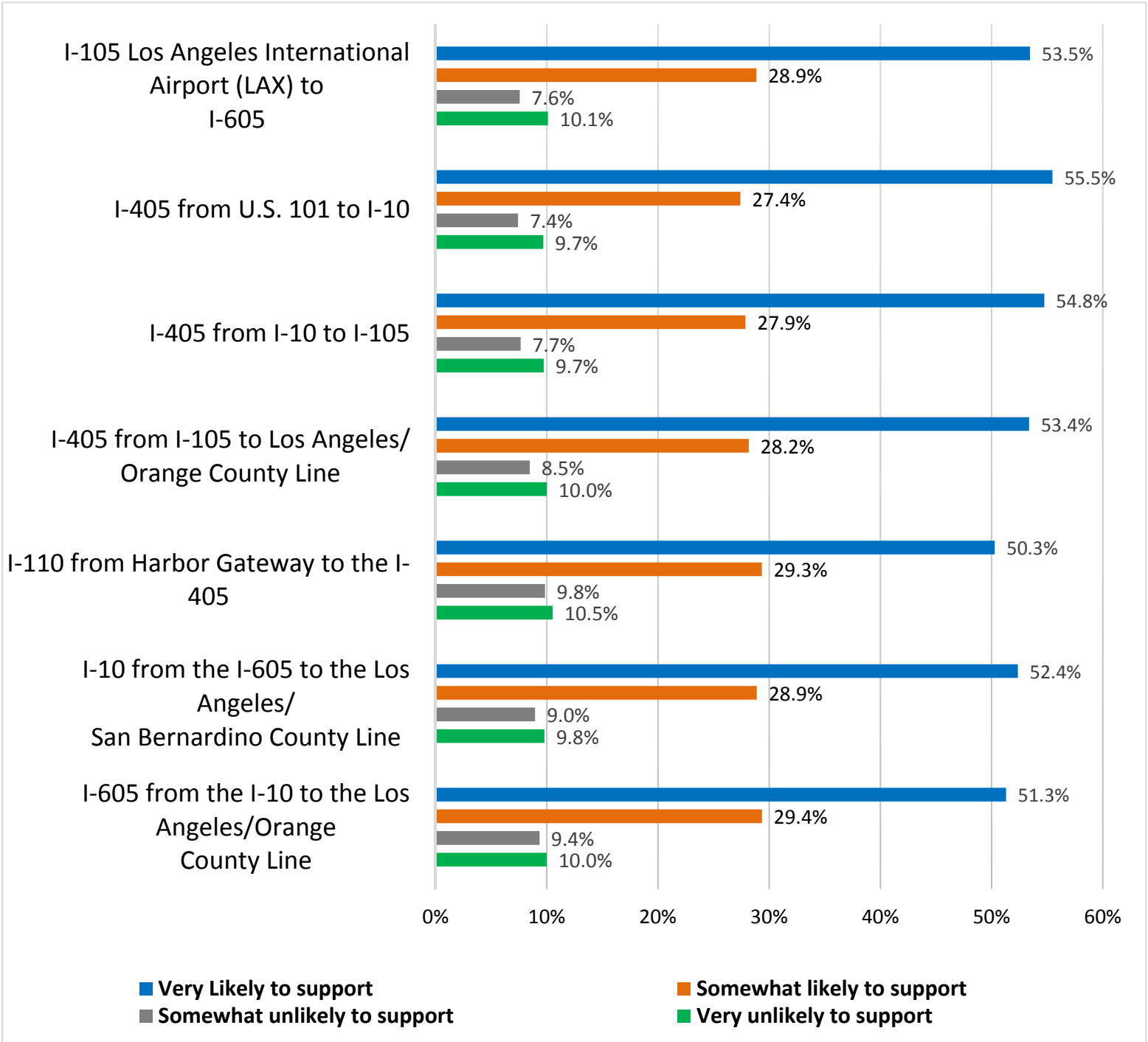


Metro

2018 Customer Survey – ExpressLanes Expansion

More than 75% of all respondents were very or somewhat likely to support Metro ExpressLanes on all projects listed. The I-105 LAX to I-605 and I-405 from U.S. 101 to I-10 received the highest support ratings of 82.3% and 82.9% respectively.

Would you support Metro ExpressLanes on the following roadways?

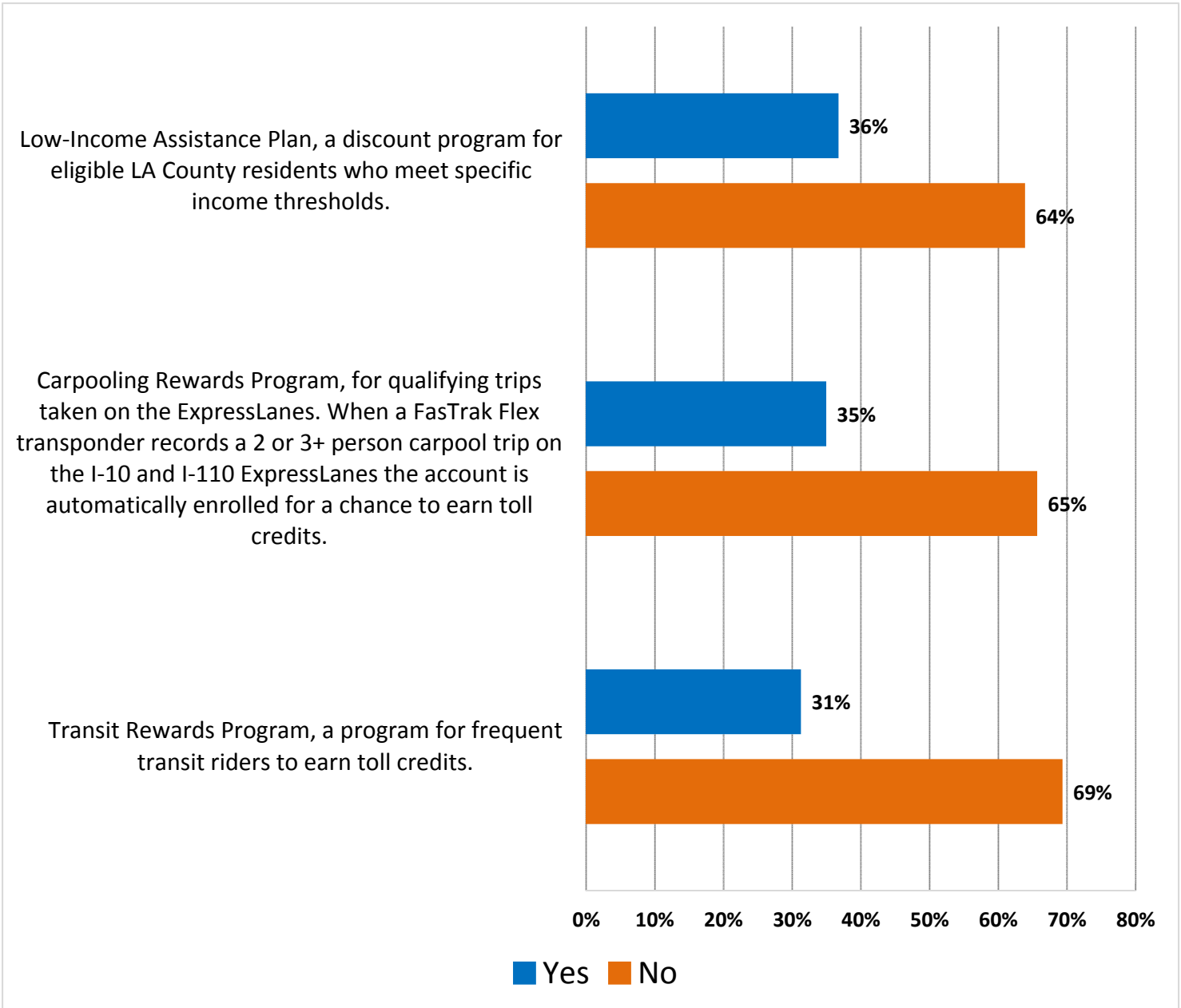


Metro

2018 Customer Survey – Customer Programs

Customer awareness of the different discount programs available were low, with the Transit Rewards Program having the lowest customer awareness at 31%. Metro ExpressLanes will increase marketing of the plans in FY19.

Before today, were you aware of each of the following programs offered by Metro ExpressLanes?



OPERATIONAL IMPROVEMENTS ON THE EXPRESSLANES IN FY2019 and FY2020

Transponder Readers: Upgraded multi-protocol transponder antennas and readers at every toll collection site, with additional antennas between lanes to ensure accurate capture of vehicles in the process of changing lanes or driving in the shoulder areas.

License Plate Readers: Upgraded license plate cameras with two cameras dedicated to each lane at each toll collection site for full redundancy. Also, an upgraded, distributed license plate processing system installed at each toll site to process license plate photos.

Advanced Toll Site Monitoring: A new digital video audit system providing complete camera coverage of each toll zone, for transaction verification and review.

Vehicle Detection: New laser scanners above each lane to ensure accurate detection of vehicles in the event of any failures of the primary detection system loops in the pavement.

Enforcement Technology: Upgraded enforcement beacons that display large numbers corresponding to the transponder switch setting of each vehicle to facilitate CHP enforcement.

ExpressLanes Roadway Monitoring: Expansion of the CCTV camera system to fill a number of coverage gaps and achieve complete monitoring .

Traffic Conditions Monitoring: Expansion of our traffic detection system that monitors throughput and speed, to provide more accurate travel time estimates and more precise input data to the dynamic pricing system. This expansion will more than double the current number of sensors out on the ExpressLanes, and will also expand coverage to provide data for the general purpose lanes as well.

Pricing System: Significant enhancements to the dynamic pricing system including additional traffic sensor inputs, comparative pricing model analysis tools, and access to additional tuning parameters to refine and optimize performance.

EXPRESSLANES NETWORK EXPANSION EFFORTS

- **Preparation of a Network Project Study Report (PSR) for the Tier 1 projects identified in the Metro ExpressLanes Strategic plan:**
  - The Network PSR for the I-10, I-405, and I-605 is scheduled to be completed in Summer 2019.

- **I-105 ExpressLanes from the I-405 to I-605:**
  - Project Approval/Environmental Document (draft), Concept of Operations, and Investment Grade Traffic and Revenue Study are expected to be released in Summer 2019.

- **I-605 ExpressLanes from I-10 to I-105:**
  - Project Approval/Environmental Document (draft), Concept of Operations, and Level 2 Traffic and Revenue Study is scheduled to be released in Summer 2019.

Attachment C — Demographics Analysis of Express Lane Regions

The demographic data for customers that use express lanes across the country are very difficult to obtain, as doing so requires detailed analyses of toll agencies' account holder data and user data, weighted to reflect the relative frequency of use for each person. While Metro has performed such an analysis of its users in the past, most peer agencies have not, and in those cases the data necessary to conduct a rigorous and precise user-focused comparative demographic analysis is not possible. Therefore, as a proxy for these data, this analysis considers census data for the areas (typically the encompassing county or counties) that are expected to function as the primary catchment areas for the corresponding express lanes demand.

The express lane regions considered in this analysis are listed in Table 1 below. Demographics are not provided for those areas of the country where express lanes are planned but not yet in operation.

Table 1: Express Lane Regions and Counties

Express Lane Region	Counties or Cities Included
Los Angeles	Los Angeles, Orange, Riverside
Atlanta	Fulton, Henry, Clayton, DeKalb, Gwinnett
Austin	Travis, Williamson
Baltimore	Baltimore City, Baltimore, Harford, Cecil
Dallas/Ft. Worth	Dallas, Denton, Tarrant
Denver	Denver, Adams, Weld, Broomfield, Boulder, Jefferson
Houston	Harris
Minneapolis/St. Paul	Hennepin, Ramsey, Scott, Dakota, Isanti, Anoka, Washington, Chisago
Salt Lake City	Salt Lake, Utah, Davis
San Francisco Bay Area	San Francisco, Alameda, San Joaquin, Santa Clara
Seattle	King, Snohomish, Pierce
South Florida	Miami-Dade, Broward, Palm Beach
Washington, DC	District of Columbia, Montgomery, Arlington, Fairfax, Fauquier, Warren, Stafford, Prince William, Fairfax City, Falls Church City, Manassas City, Fredericksburg City

To evaluate the similarity of a given express lane region to Los Angeles, a data analysis technique involving calculation of the Error Sum of Squares (ESS) was performed to quantitatively characterize the goodness of fit between the two regions. As the ESS is a quantitative measure of the differences between two datasets, the lower the ESS value, the better the match between that region and Los Angeles.

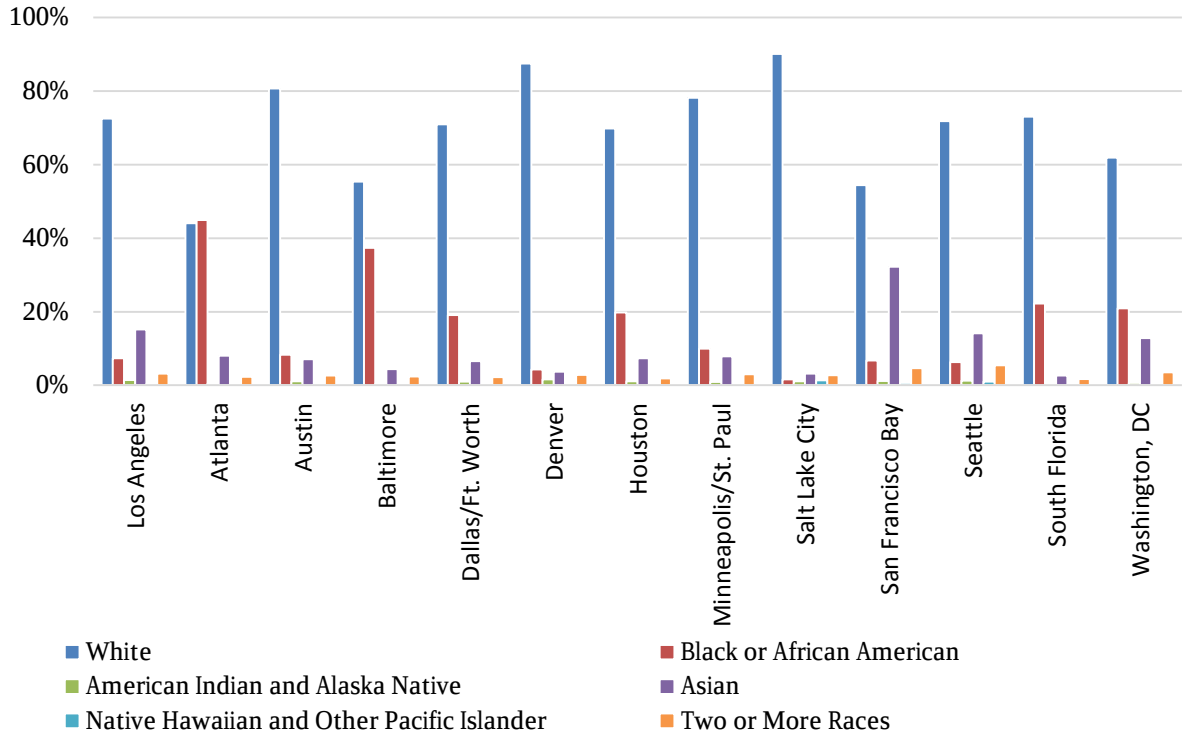
Race

An analysis of census data by region indicates that the Seattle, WA metropolitan area most closely resembles the Los Angeles metropolitan area with respect to racial distribution. The race distributions are presented graphically in Figure 1. Each of the individual regions and their accompanying ESS ratings are provided in Table 2 below.

Table 2: Region Similarity Rankings by Race (combined Hispanic/Non-Hispanic Ethnicities)

City	Difference Score (lower means more similar)
Seattle	0.0008
Minneapolis/St. Paul	0.0093
Austin	0.0135
Dallas/Ft. Worth	0.0216
Houston	0.0225
Washington, DC	0.0305
Denver	0.0366
South Florida	0.0383
Salt Lake City	0.0486
San Francisco Bay Area	0.0619
Baltimore	0.1312
Atlanta	0.2273

Figure 1: Distribution of Population by Race and Region (combined Hispanic/Non-Hispanic Ethnicities)



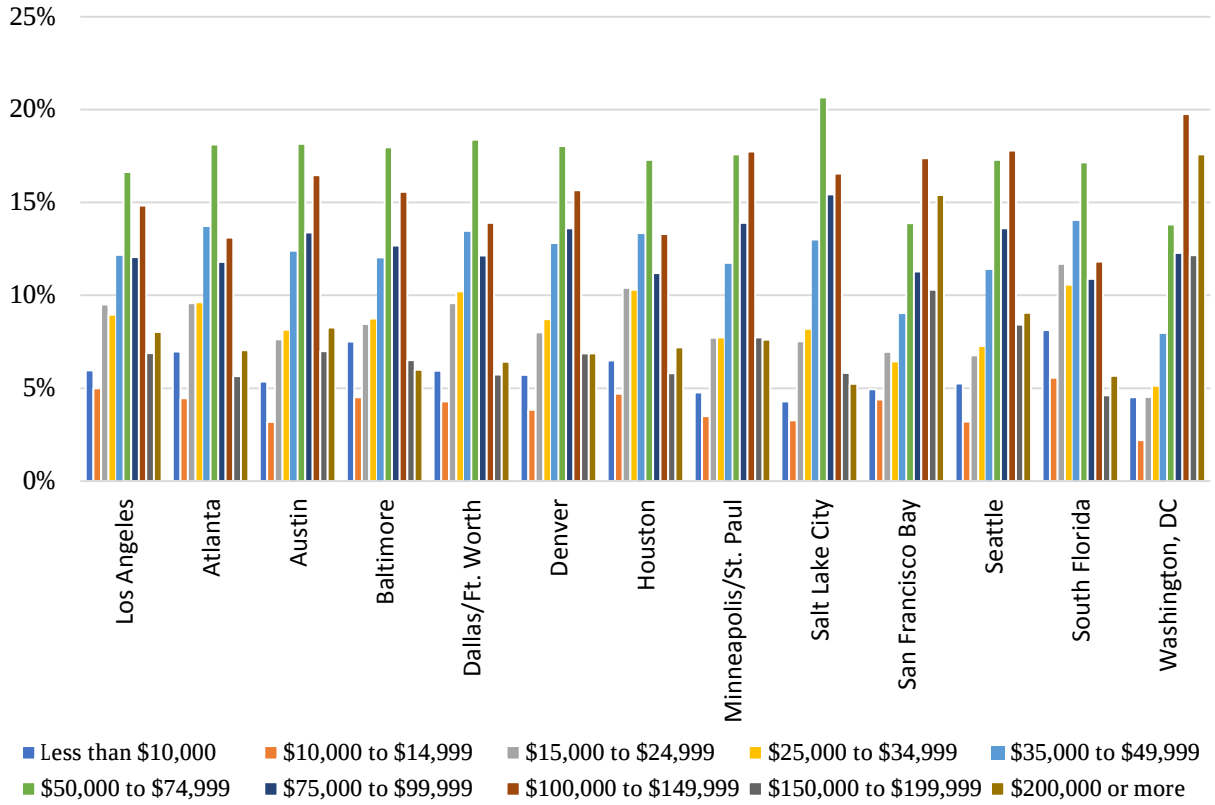
Income

An analysis of census data by region indicates that the Houston metropolitan area most closely resembles the Los Angeles metropolitan area with respect to income distribution. The income distributions are presented graphically in Figure 2. Each of the individual regions and their accompanying ESS ratings are provided in Table 3 below.

Table 3: Region Similarity Rankings by Income Distribution

City	Difference Score (lower means more similar)
Houston	0.000979
Denver	0.001043
Baltimore	0.001074
Dallas/Ft. Worth	0.001158
Atlanta	0.001201
Austin	0.001465
Minneapolis/St. Paul	0.002212
Seattle	0.002960
South Florida	0.003758
Salt Lake City	0.005044
San Francisco Bay Area	0.010458
Washington, DC	0.021843

Figure 2: Distribution of Population by Income and Region



Attachment D – Comparison Chart, Summary of Express Lanes in the US, and Toll Road Facilities in California

	IDENTIFIER			Lane Separation Barrier Types				OPERATIONS		Primary Toll Method			HOV Discount		PAY-AS-YOU-USE				OTHER	
	Facility	Operator Agency	Location	Painted	Flexible Post / Channelizer	Concrete Barrier	Reversible or Moveable Barrier?	Prices Active at All Times?	Transponder Required for All Traffic?	Fixed	Scheduled Variable	Dynamic Variable	At all times	Part time	Pay-As-You-Use Offered?	Surcharge or Fee for Pay-As-You-Use?	Surcharge/Fee Amount for Pay-As-You-Use*	HOV Discount Offered for Pay-As-You-Use?	Low Income Assistance Plan	Additional Notes (see below table)
EXPRESS LANES IN THE UNITED STATES	I-10	Metro	Los Angeles, CA	✓		✓	✗	✓	✓			✓	✓		✗	—	—	—	✓	
	I-110	Metro	Los Angeles, CA	✓		✓	✗	✓	✓			✓	✓		✗	—	—	—	✓	
	I-15	SANDAG	San Diego, CA	✓		✓	✓	✓	✗			✓	✓		✗	—	—	—	✗	Note 1
	I-580	Alameda CTC	Alameda, CA	✓			✗	✗	✓			✓	✓		✗	—	—	—	✗	
	I-680 South	Alameda CTC	Alameda, CA	✓			✗	✗	✗			✓	✓		✗	—	—	—	✗	Note 1
	I-680 North	Contra Costa	Contra Costa, CA	✓			✗	✓	✓			✓	✓		✗	—	—	—	✗	
	SR 91	OCTA/RCTC	Orange County, CA			✓	✗	✓	✓		✓			✓	✗	—	—	—	✗	
	SR 237/ I-880	SCVTA	Santa Clara, CA	✓			✗	✗	✓			✓	✓		✗	—	—	—	✗	
	I-25 Central	Co. DOT	Denver, CO			✓	✓	✓	✗		✓		✓		✓	✓	$5	✗	✗	Note 2
	I-25 North	Co. DOT	Denver, CO	✓			✗	✓	✗		✓		✓		✓	✓	$5	✗	✗	
	I-70	Co. DOT	Denver, CO	✓			✗	✓	✗			✓			✓	✓	≤$10	✗	✗	Note 3
	US 36 Phase 1	Co. DOT	Denver, CO	✓			✗	✓	✗		✓		✓		✓	✓	$5	✗	✗	
	US 36 Phase 2	Co. DOT	Denver, CO	✓			✗	✓	✗		✓		✓		✓	✓	$5	✗	✗	
	I-595	FDOT	Ft. Lauderdale, FL			✓	✓	✓	✓			✓			✗	—	—	—	✗	
	I-75	FDOT	Miami, FL		✓	✓	✗	✓	✓			✓			✗	—	—	—	✗	
	I-95	FDOT	Miami, FL		✓		✗	✓	✓			✓	✓		✗	—	—	—	✗	
	SR 589	FDOT	Tampa, FL		✓		✗	✓	✓			✓			✓	✓	≤100%	✗	✗	
	I-75 North	GDOT	Atlanta, GA			✓	✓	✓	✓			✓			✗	—	—	—	✗	
	I-75 South	SRTA	Atlanta, GA			✓	✓	✓	✓			✓	✓		✗	—	—	—	✗	
	I-85	SRTA	Atlanta, GA	✓			✗	✓	✓			✓	✓		✗	—	—	—	✗	
	I-95	MDTA	Baltimore, MD			✓	✗	✓	✗		✓				✗	—	—	—	✗	
	I-35E	Mn. DOT	St. Paul, MN	✓			✗	✗	✗			✓	✓		✗	—	—	—	✗	

Attachment D – Comparison Chart, Summary of Express Lanes in the US, and Toll Road Facilities in California

	IDENTIFIER			Lane Separation Barrier Types				OPERATIONS		Primary Toll Method			HOV Discount		PAY-AS-YOU-USE				OTHER	
	Facility	Operator Agency	Location	Painted	Flexible Post / Channelizer	Concrete Barrier	Reversible or Moveable Barrier?	Prices Active at All Times?	Transponder Required for All Traffic?	Fixed	Scheduled Variable	Dynamic Variable	At all times	Part time	Pay-As-You-Use Offered?	Surcharge or Fee for Pay-As-You-Use?	Surcharge/Fee Amount for Pay-As-You-Use*	HOV Discount Offered for Pay-As-You-Use?	Low Income Assistance Plan	Additional Notes (see below table)
EXPRESS LANES IN THE UNITED STATES	I-35W	Mn. DOT	Minneapolis, MN	✓			✗	✓	✗			✓	✓		✗	—	—	—	✗	
	I-394	Mn. DOT	Minneapolis, MN	✓		✓	✗	✓	✗			✓	✓		✗	—	—	—	✗	
	Loop 1	CTRMA	Austin, TX		✓		✗	✓	✗			✓			✓	✓	$1	✗	✗	
	SH 114	TxDOT	Dallas/Ft. Worth, TX			✓	✗	✓	✗			✓		✓	✓	✓	≥50%	✗	✗	
	I-30	TxDOT	Dallas/Ft. Worth, TX			✓	✓	✓	✗			✓		✓	✓	✓	≥50%	✗	✗	
	I-635	LBJIG	Dallas, TX			✓	✗	✓	✗			✓		✓	✓	✓	≤50%	✗	✗	
	I-820	NTEMP	Dallas/Ft. Worth, TX			✓	✗	✓	✗			✓		✓	✓	✓	≥50%	✗	✗	Note 4
	I-35W	NTEMP	Dallas/Ft. Worth, TX			✓	✗	✓	✗			✓		✓	✓	✓	≥50%	✗	✗	
	I-35E	TxDOT	Dallas/Ft. Worth, TX			✓	✓	✓	✗			✓		✓	✓	✓	≥50%	✗	✗	
	I-10	HCTRA	Houston, TX		✓		✗	✓	✓		✓			✓	✗	—	—	—	✗	
	I-45N	Harris MTA	Houston, TX			✓	✓	✓	✓		✓		✓		✗	—	—	—	✗	
	I-45S	Harris MTA	Houston, TX			✓	✓	✓	✓		✓		✓		✗	—	—	—	✗	
	US 290	Harris MTA	Houston, TX			✓	✓	✓	✓		✓		✓		✗	—	—	—	✗	
	US 59N	Harris MTA	Houston, TX			✓	✓	✓	✓		✓		✓		✗	—	—	—	✗	
	US 59S	Harris MTA	Houston, TX		✓		✓	✓	✓		✓		✓		✗	—	—	—	✗	
	I-15	UDOT	Salt Lake City, UT	✓			✗	✓	✓			✓	✓		✗	—	—	—	✗	
	I-64	VDOT	Norfolk, VA			✓	✓	✗	✓			✓	✓		✗	—	—	—	✗	
	I-495	Transurban	Washington, D.C.		✓	✓	✗	✓	✓			✓	✓		✗	—	—	—	✗	
	I-95	Transurban	Washington, D.C.			✓	✗	✓	✓			✓	✓		✗	—	—	—	✗	
	I-405	WSDOT	Seattle, WA	✓			✗	✗	✗			✓	✓		✓	✓	$2	✗	✗	
	SR 167	WSDOT	Seattle, WA	✓			✗	✗	✗			✓	✓		✗	—	—	—	✗	Note 1

Attachment D – Comparison Chart, Summary of Express Lanes in the US, and Toll Road Facilities in California

	IDENTIFIER			Lane Separation Barrier Types				OPERATIONS		Primary Toll Method			HOV Discount		PAY-AS-YOU-USE				OTHER	
	Facility	Operator Agency	Location	Painted	Flexible Post / Channelizer	Concrete Barrier	Reversible or Moveable Barrier?	Prices Active at All Times?	Transponder Required for All Traffic?	Fixed	Scheduled Variable	Dynamic Variable	At all times	Part time	Pay-As-You-Use Offered?	Surcharge or Fee for Pay-As-You-Use?	Surcharge/Fee Amount for Pay-As-You-Use*	HOV Discount Offered for Pay-As-You-Use?	Low Income Assistance Plan	Additional Notes (see below table)
TOLL ROAD FACILITIES IN CALIFORNIA	SR 73	TCA	Orange County, CA	—	—	—	✗	✓	✗		✓				✓	✓	≤$2.26	✗	✗	
	SR 133	TCA	Orange County, CA	—	—	—	✗	✓	✗		✓				✓	✓	≤$0.43	✗	✗	
	SR 241	TCA	Orange County, CA	—	—	—	✗	✓	✗		✓				✓	✓	≤$0.48	✗	✗	
	SR 261	TCA	Orange County, CA	—	—	—	✗	✓	✗		✓				✓	✓	≤$0.59	✗	✗	
	SR 125	SANDAG	San Diego, CA	—	—	—	✗	✓	✗	✓					✓	✓	$2	✗	✗	
	US 101	Golden Gate	San Francisco, CA	—	—	—	✓	✓	✗		✓			✓	✓	✓	$1–$7	✗	✗	
	I-80 Bridge	BATA	San Francisco, CA	—	—	—	✗	✓	✗		✓			✓	✗	—	—	—	✗	
	SR 160 Bridge	BATA	Antioch, CA	—	—	—	✗	✓	✗	✓			✓		✗	—	—	—	✗	
	I-680 Bridge	BATA	Benicia, CA	—	—	—	✗	✓	✗	✓			✓		✗	—	—	—	✗	
	I-80 Bridge	BATA	Carquinez, CA	—	—	—	✗	✓	✗	✓			✓		✗	—	—	—	✗	
	SR 84 Bridge	BATA	Palo Alto, CA	—	—	—	✗	✓	✗	✓			✓		✗	—	—	—	✗	
	I-580 Bridge	BATA	Richmond, CA	—	—	—	✗	✓	✗	✓			✓		✗	—	—	—	✗	
	SR 92 Bridge	BATA	Hayward, CA	—	—	—	✗	✓	✗	✓			✓		✗	—	—	—	✗	

Attachment D – Comparison Chart, Summary of Express Lanes in the US, and Toll Road Facilities in California

TABLE NOTES

- A dash (—) indicates that a category is not applicable.
- *When surcharge/fee is reported as a percentage, it is a percentage of the base toll amount.
- **Note 1:** For SR 167 and I-15, vehicles without transponders are assumed to be HOVs.
- **Note 2:** For I-25, there is a surcharge for trucks using the managed lanes: Vehicles with four or more axles have to pay the $25 fee in addition to the base toll rate.
- **Note 3:** For I-70, the Express Lanes are only open on weekends and holidays; otherwise the lane serves as a shoulder to the general purpose lanes.
- **Note 4:** For I-820, the HOV amount is always displayed along with the non-HOV amount, but when the traffic level is low, the two amounts are the same.

DEFINITIONS:

Facility Type:

- **Express Lane:** a facility with one or more priced lanes that are parallel to non-priced lanes
- **Toll Road:** a facility where every lane on the roadway is priced

Primary Toll Method:

- **Fixed:** tolls are the same at all times
- **Scheduled Variable:** tolls change according to a predetermined schedule, time of day and/or day of week
- **Dynamic Variable:** tolls change in response to roadway conditions in real time.

Pay-As-You-Use refers to plate-based tolling for non-account holders only.

Attachment E - Surcharge Assumptions and Costs

Estimated Volumes	
42,000,000	Transactions per year
1,720,000	"Pay-As-You-Use" Transactions (based on current violation rate)
400,000	Estimated Calls

Costs Per "Pay-as-You-Use" Transaction		Cost Categories
$	0.64	System, Signage & Maintenance (applies to one-year pilot term only)
$	1.28	Printing, Postage, Credit Card, and Other Processing Costs
$	0.30	Manual Review of License Plate Images
$	1.80	Customer Service Costs
$	4.02	Total

Note: Fee calculation is subject to reassessment if the Pay-As-You-Use program is extended beyond its current one-year pilot duration.

METRO EXPRESSLANES MOTION RESPONSE #42 PAY-AS-YOU-USE

Board of Directors – Ad Hoc Congestion, Highway and Roads Committee

January 16, 2019

Motion Response

- Response to Director Hahn's motion regarding "Pay-as-You-Use"
  - Current ExpressLanes Performance
  - Demographic comparison to other express lane systems
  - Viability of implementing a "Pay-as-You-Use" model

Metro

Current Performance

- In 2018, 2% increase in trips on the ExpressLanes
  - 195 million trips from inception through 2018
- Over 870,000 transponders issued through 2018 reflecting a 21% increase from FY17
- 4.1% of all ExpressLanes trips are violations
- Based on annual customer surveys:
  - 89% of respondents are satisfied with their speed of travel
  - 90% are satisfied with time saved relative to tolls paid
  - 93% are aware of FasTrak requirements

Metro

Comparison

In comparing the Metro ExpressLanes to other major congestion pricing systems in the country, need to differentiate between:

<u>Toll Roads</u> –Facility built to provide highway capacity where every lane within the roadway is tolled.

Examples:
SR 73, 133, 241, 261 (The Toll Roads)
SR 125 (SANDAG)

<u>Express Lanes</u> – Optimize lane utilization by selling the extra capacity to lower occupancy vehicles. Not all lanes within the roadway are tolled nor all vehicles in the Express Lanes tolled.

Examples:
I-10, I-110 (Metro)
I-15 (SANDAG)
SR-91 (OCTA & RCTC)

Metro

Demographic Comparison

Of the 13 major metropolitan regions in the country that have express lanes, the most similar to Los Angeles with respect to race and income are:

Race:

Rank	City, State	"Pay-as-You-Use" Offered	HOV Discount Offered for "Pay as-You-Use"	Surcharge or Fee for "Pay-As-You Use"
1	Seattle, WA	Yes	No	$2
2	Minneapolis and St, Paul, MN	No	N/A	N/A
3	Austin, TX	Yes	No	$1

Income:

Rank	City, State	"Pay-as-You-Use" Offered	HOV Discount Offered for "Pay as-You-Use"	Surcharge or Fee for "Pay-As-You Use"
1	Houston, TX	No	N/A	N/A
2	Denver, CO	Yes	No	$3.75 – $10
3	Baltimore, MD	No	N/A	N/A

- 50% of the similar demographic regions by race and income have a "Pay-as-You-Use" model. Each do not offer a HOV discount for this model and charge a surcharge or fee for this type of transaction.
- Nationwide, 33% of express lanes offer "Pay-as-You-Use" .

Metro

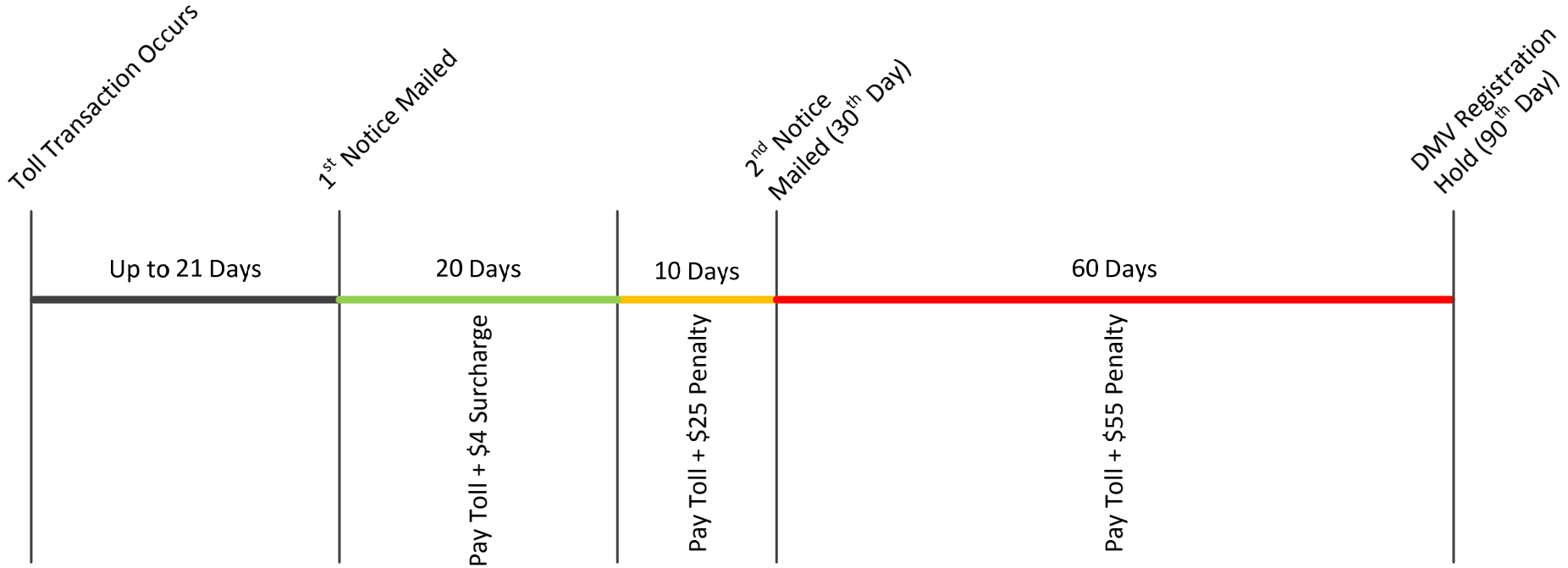
Summary of Findings

1. Allows customers to use the ExpressLanes without any advance interaction with Metro;
2. Model can be integrated into the current and new back office system;
3. All users of "Pay-as-You-Use" will have to pay a toll at all times regardless of vehicle occupancy;
4. An additional surcharge will be added to each transaction to supplement the additional processing, staffing, and mailing expense;
5. Potential increase in ExpressLanes traffic volumes;
6. Low Income Assistance Plan can only be applied to account holders;
7. Billing process will not be as fast and efficient for "Pay-as-You Use" as it is for account holders;
8. This model will require changes to the existing signage and require a regional outreach campaign;
9. May lead to revenue leakage and reduction in revenue or an increase in usage and revenue which will be studied as part of the pilot.

Metro

Pilot

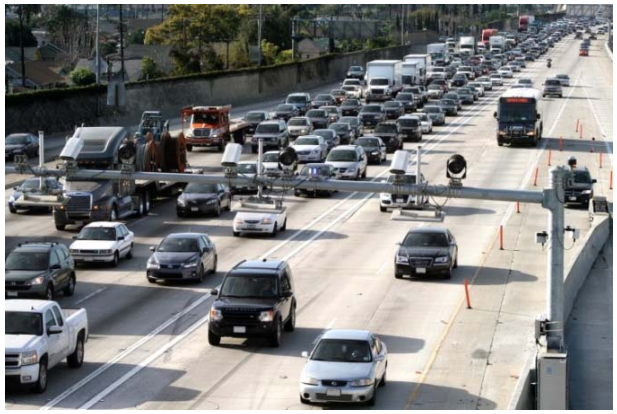
- **"Pay-as-You-Use" model pilot transaction timeline**



Metro

Recommendation

Given the opportunities and challenges, staff recommends a one-year pilot of the "Pay-as-You-Use" model with a before/after evaluation to assess actual impacts.



Next Steps, if approved:

- **9 months to develop and implement**
- **Work in conjunction with Caltrans**
- **Campaign to educate potential users**
- **Software modification**
- **Necessary website modifications**
- **Update existing signage**
- **Anticipated cost to implement the pilot is $750,000**

Metro