

# Bay Area Infrastructure Financing Authority (BAIFA)

June 24, 2020

Agenda Item 2c - 20-0860

## MTC Express Lanes Quarterly Report: First Quarter (January - March 2020)

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**Subject:** An overview of capital project delivery progress for MTC Express Lanes and operational performance of MTC's I-680 Contra Costa Express Lanes.

**Background:** MTC issues Express Lanes Program reports quarterly. The report summarizes major developments, project schedules and risks, and compares forecast costs with BAIFA's Express Lanes Program Expenditure Plan as well as the operational performance of BAIFA's open express lanes.

Bay Area Express Lanes operators jointly ceased tolling on March 20, 2020 following the COVID-19 shelter-in-place orders. The agencies made this decision based on a precipitous decline in traffic (50 to 60 percent) and to allow the California Highway Patrol to focus on the public health emergency. It also reduced demands on the FasTrak® Customer Service Center, easing operational adjustments needed to meet social distancing requirements, staffing availability, and elimination of cash toll collection on the BATA bridges.

Express lane agencies resumed tolling on all Bay Area Express Lanes on June 1, 2020, after recording steady growth in traffic, with traffic levels reaching up to 80% of normal levels in peak periods and with further modifications to the shelter-in-place order on the horizon. This action proactively manages traffic before it reaches critical levels and ensures reliable travel times as express buses begin to resume service.

**I-680 Contra Costa Southern Segment Operations** – First quarter 2020 performance is highlighted below (see *Appendix C* of the attached report for more detail).

- Usage and tolling statistics for the first quarter of 2020 reflect the impacts of the COVID-19 emergency, including the significant decline in traffic and cessation of tolling in March.
- Drivers made 1.6 million trips, down from 2.0 million in the prior quarter and 1.9 million a year ago. Daily express lane trips averaged 27,500.
- Paid trips were 767,000, down from 1.0 million in the prior quarter and 1.0 million a year ago.
- 46% of trips were by vehicles declared as toll-free, compared to 45% in the prior quarter and 41% a year ago. Toll violators, which are vehicles without FasTrak® accounts, were 5% of all trips.
- Peak hour express lane speeds were 9 to 12 miles per hour (mph) faster than the general purpose lanes. While peak hour speeds average

60 mph throughout the corridor, several congested location speeds dropped below 45 mph frequently. Staff fine-tuned the tolling algorithm in late 2019 to improve speeds at these locations; this resulted in higher tolls and appears to have improved speeds to a degree. Due to the impacts of COVID-19, this is unlikely to be a factor in the near-term.

- Monthly average tolls paid ranged from \$5.90 to \$7.70 in the northbound p.m. peak hour, and from \$5.00 to \$6.00 in the southbound a.m. peak hour. In the middle of the day, the average toll paid was \$1.15 northbound and \$0.90 southbound. The highest posted toll was \$10.00 in each direction, which was paid by 11% of tolled drivers.
- CHP performed 80% of requested enforcement hours and made 1,070 enforcement contacts. Comparing only January and February 2020 to 2019, CHP enforcement contacts fell 28% and HOV citations issued fell 32%.

**Express Lanes Capital Delivery** – During the COVID-19 public health emergency, BAIFA determined that construction of its express lanes are “Essential Critical Infrastructure” based on Governor Newsom’s identification of critical infrastructure sectors. This allowed construction to continue in compliance with applicable public health directives. Construction crews maintained project delivery schedules in spite of COVID-19. Staff continues to track the risks of COVID-19 on project schedules. Most recently, protests sparked by the murder of George Floyd and limits on California Highway Patrol resources, as officers focus on public safety instead of construction work zone safety, have resulted in the temporary suspension of night time construction activity in parts of the Bay Area. Staff continues to monitor the impacts on project construction schedules.

Project activity is highlighted below (see *Section I. Program Highlights* and *Section III. Capital Delivery* of the attached report for more detail).

- **I-880 Alameda:** Civil construction is near complete; remaining work to transition striping and signage from an HOV lane to an express lane began in June. The toll system integrator is continuing toll system, electrical and fiber installation, and toll system testing is underway. The planned opening date is September. In late May, staff initiated a public outreach campaign about lane striping, and is finalizing a separate campaign to begin in July focused on what drivers need to know to use the lanes when they open.
- **I-680 Contra Costa Northern Segment Southbound:** Civil construction is accelerating with a focus on building retaining walls and a sound wall, widening ramps and the highway at various locations, installing new concrete median barriers, and eventually installing overhead sign structures. Caltrans reviewed the toll system


design and issued an encroachment permit in May for the toll system integrator to begin toll system installation. COVID-19 may affect the availability of materials and manufactured items for pricing signs in the corridor; staff is tracking the impacts. Despite the situation, the start of tolling is now Winter/Spring 2021, ahead of the most recent forecast of Fall 2021. The express lanes team is looking at ways to advance the toll system work to begin tolling as soon as possible.

- **I-80 Solano:** The project remains shelf-ready in the event construction funds become available. The project cost estimate has increased to \$275 million to reflect three years of delay to the start of construction. In May, MTC approved a \$123 million application to the Senate Bill 1 (SB1) Solution for Congested Corridors and Trade Corridor Enhancement Programs, to be submitted with Caltrans, and programmed \$85 million of Regional Measure 3 funds to the project. The balance of the project cost is funded with BATA Express Lanes funds and Solano Transportation Authority's State Transportation Improvement Program and other local funds. If SB1 funds are awarded and RM3 passes the legal challenge, the project's funding plan will be complete.

**Issues:** None

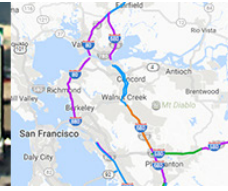
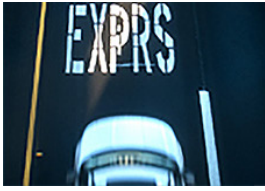
**Recommendation:** This item is presented for information only.

**Attachments:** MTC Express Lanes Quarterly Report: First Quarter, January - March 2020

  
Therese W. McMillan



# BAY AREA EXPRESS LANES



## MTC Express Lanes Quarterly Report 1<sup>st</sup> Quarter, January - March, 2020

Submitted: June 2020

**BAIFA**  
BAY AREA INFRASTRUCTURE  
FINANCING AUTHORITY



METROPOLITAN  
TRANSPORTATION  
COMMISSION



# TABLE OF CONTENTS

I.	Program Highlights .....	1
II.	Program Overview.....	3
	A. Program Description .....	3
	B. Operating Authority .....	4
	C. MTC Express Lane Project Funding.....	5
III.	Capital Delivery .....	6
	A. Schedule .....	6
	B. Capital Costs .....	7
	C. Change Management.....	8
	D. Risk Management Plan.....	8
	E. Active Capital Project Summaries.....	11
IV.	Operations .....	22
	Appendices.....	A-1
	A. Express Lanes Overview .....	A-2
	B. Completed Capital Project Summaries .....	A-5
	C. I-680 Contra Costa Express Lanes Operations Report.....	A-7

# I. PROGRAM HIGHLIGHTS

The purpose of this report is to summarize the progress of delivering Metropolitan Transportation Commission (MTC) Express Lanes. The report covers the first quarter of 2020, January 1 to March 31.

The California Transportation Commission (CTC) approved MTC's application to implement and operate its 270-mile express lane network on October 27, 2011. Soon thereafter, work began to environmentally clear the first phase of express lane conversion projects and produce a Concept of Operations describing how the Express Lanes will operate. The first of MTC's express lanes opened in October 2017 on I-680 in Contra Costa County. Several additional projects are at varying stages of development.

Project Development & Construction	1 <sup>st</sup> Quarter 2020 Highlights	Current Activities
<b>I-880 Alameda (ALA-880)</b> San Leandro to Milpitas <i>Hegenberger Road/Lewelling Boulevard to Dixon Landing Road</i>	<ul style="list-style-type: none"> <li>All PG&amp;E service connections are complete.</li> <li>The toll system integrator continued installation of toll system equipment and electrical.</li> </ul>	<ul style="list-style-type: none"> <li>Civil construction is near complete. Final pavement and express lane striping will start in June. Final signing and pavement marking placement will start in August.</li> <li>The toll system integrator is continuing installation of roadside cabinets, toll system equipment in the median, variable toll message signs, CCTVs and connections of electrical and fiber conduits.</li> <li>Staff is coordinating with AT&amp;T to establish a second communication path to host datacenters.</li> <li>Staff is continuing 'go live' planning in order to be ready to open the I-880 Express Lanes.</li> <li>Staff is finalizing customer education materials and messaging channels for a customer education campaign.</li> <li>Staff is finalizing an engagement strategy to encourage and reward high occupancy vehicles. Given the public health crisis, staff is trying to remain flexible.</li> <li>Monthly construction notices and ramp closure/ detour notices continue to be sent.</li> </ul>
<b>I-680 Contra Costa Southern Segment (CC-680 South)</b> Walnut Creek to San Ramon <i>Livorna Road/Rudgear Road to Alcosta Boulevard</i>	<ul style="list-style-type: none"> <li>See Appendix C for second quarter performance data.</li> </ul>	<ul style="list-style-type: none"> <li>Project complete; see Appendix B for archived summary.</li> </ul>

Project Development & Construction	1 <sup>st</sup> Quarter 2020 Highlights	Current Activities
<b>I-680 Contra Costa Northern Segment Southbound (CC-680 North SB)</b>  Martinez to Walnut Creek <i>Marina Vista Boulevard to Rudgear Road/SR 242</i>	<ul style="list-style-type: none"> <li>The civil contractor completed work on the new concrete median barrier between SR-242 and SR-24.</li> <li>The civil contractor continued highway and ramp widening, retaining wall construction and median barrier construction.</li> </ul>	<ul style="list-style-type: none"> <li>The civil contractor is accelerating paving work to make way for the toll system integrator to complete the toll system installation ahead of schedule.</li> <li>The civil contractor continues highway widening activities at various locations in Walnut Creek. Two of five retaining walls are complete; construction of the remaining three is on-going. The contractor plans to complete electrical lighting and tolling work between SR-242 and SR-24.</li> <li>Caltrans will finish its review of the toll system design and issue an encroachment permit for the toll system integrator.</li> <li>Staff is coordinating with Contra Costa Transportation Authority staff who will lead a public outreach campaign about the opening of the express lane extension.</li> </ul>
<b>I-80 Solano (SOL-80)</b>  Fairfield to Vacaville <i>Red Top Road to I-505</i>	<ul style="list-style-type: none"> <li>No highlights to report.</li> </ul>	<ul style="list-style-type: none"> <li>The project is shelf-ready should construction funds become available.</li> <li>MTC and STA staff continue to explore potential funding sources, including 2020 Senate Bill 1 competitive programs and Regional Measure 3 Express Lanes program funds.</li> </ul>
<b>Program Management</b>	<ul style="list-style-type: none"> <li>In January, BAIFA approved an amendment to its Toll Facility Ordinance, establishing tolling rules for the I-880 Express Lanes, including half-price tolls for 2-person vehicles and clean air vehicles. BAIFA also approved half-price tolls for clean air vehicles on the I-680 Contra Costa Express Lanes, but 2-person vehicles will remain toll-free. The rules take effect when the I-880 Express Lanes open.</li> <li>In mid-March, all Bay Area Express Lanes operators ceased tolling on express lanes in response to the COVID-19 public health crisis. Staff coordinated with Caltrans, CHP and BAIFA's civil and toll system contractors to continue progress delivering the I-880 and I-680 North express lanes.</li> <li>Staff coordinated with Caltrans, CHP and the Valley Transportation Authority on public information strategies for opening the I-880 Express Lanes.</li> </ul>	<ul style="list-style-type: none"> <li>Staff is preparing to restart tolling on BAIFA's I-680 express lanes in June.</li> <li>Staff is finalizing a strategic plan to help prioritize express lanes funding and delivery in the region and to inform Plan Bay Area 2050.</li> <li>Staff is coordinating with other express lane operators on their studies to understand low-income travelers' needs, and developing an approach to address equity concerns for BAIFA's express lanes.</li> <li>MTC's Operations Committee will be asked to award contracts to two vendors for pilots to improve occupancy enforcement.</li> </ul>
<b>Toll System</b>	<ul style="list-style-type: none"> <li>In March, the express lane Host system began sharing toll rate information with MTC's 511 Traveler Information System.</li> </ul>	<ul style="list-style-type: none"> <li>Staff continues negotiations with the toll system integrator to streamline work required to produce toll system performance monitoring reports.</li> <li>The toll system integrator continues work on a new module for image review and trip building. The module will be implemented and tested before I-880 opens.</li> </ul>

## II. PROGRAM OVERVIEW

### A. Program Description

MTC and partner agencies are implementing a regional network of express lanes called Bay Area Express Lanes. Upon completion, Bay Area Express Lanes will comprise 600 miles of express lanes operated by MTC, the Valley Transportation Authority (VTA), the Alameda County Transportation Commission (Alameda CTC), the Sunol Smart Corridors Joint Powers Authority (Sunol JPA), and the San Mateo County Express Lanes Joint Powers Authority (San Mateo JPA).

Primary objectives for Bay Area Express Lanes include:

- Create a seamless network of HOV lanes to encourage carpools, vanpools and express buses;
- Make the best use of HOV lane capacity;
- Provide reliable travel times for solo drivers; and
- Better manage all lanes to keep traffic moving.

MTC's portion of the Bay Area Express Lanes, referred to as MTC Express Lanes, will include 270 miles of express lanes – 150 miles of converted high occupancy vehicle (HOV) lanes and 120 miles of new lanes – on I-80 in Alameda, Contra Costa and Solano Counties; I-880 in Alameda County; I-680 in Contra Costa and Solano counties; and the westbound approaches to the Bay Bridge, San Mateo Bridge and Dumbarton Bridge. In addition, MTC will operate 45 miles of new and converted lanes on US-101 in San Mateo County for the San Mateo JPA.

Appendix B includes an overview of how express lanes operate.

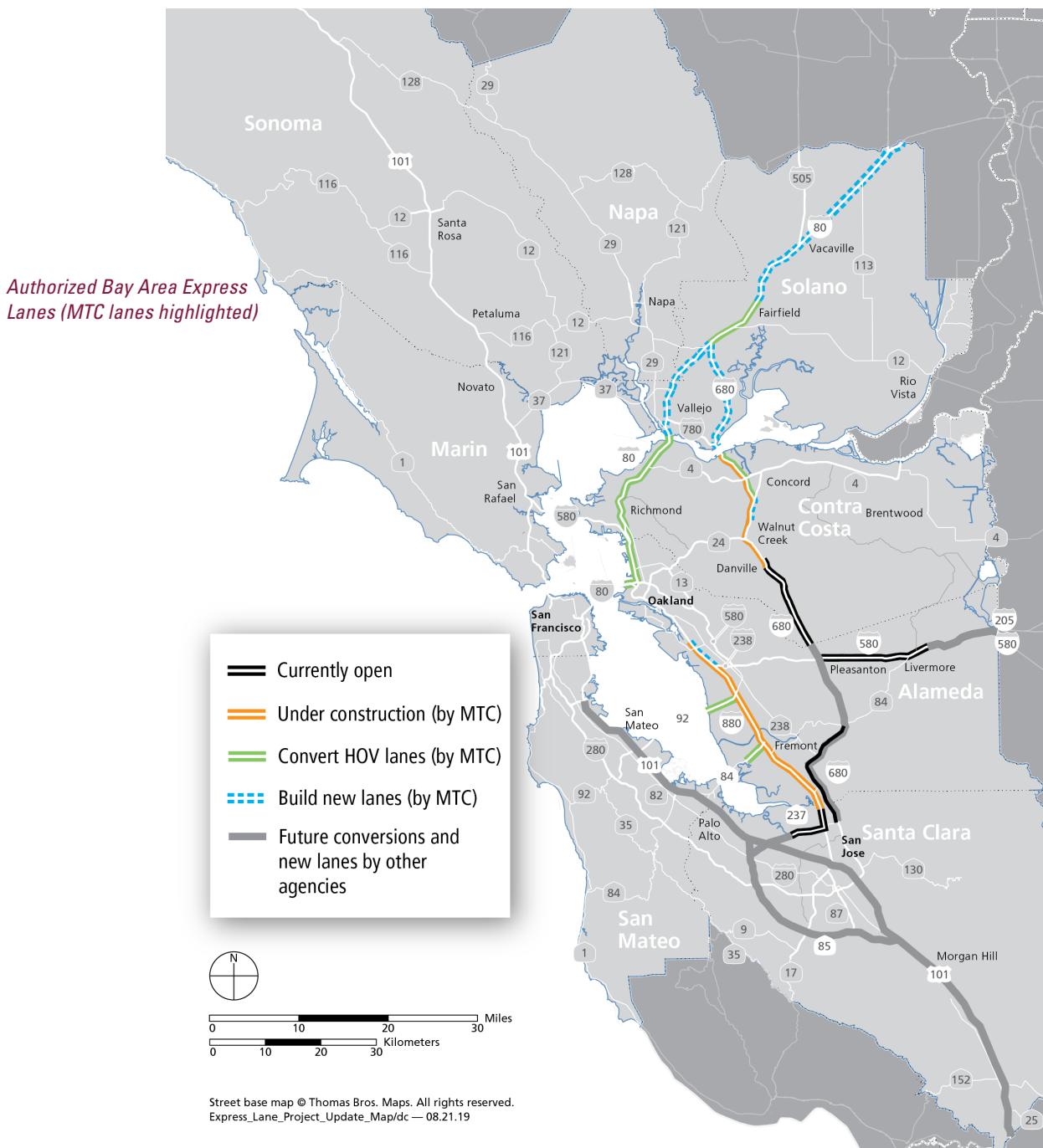


Map of Authorized Bay Area Express Lanes Network

## B. Operating Authority

MTC and the Bay Area Toll Authority (BATA) have formed a joint powers authority to develop and operate MTC Express Lanes. The joint powers authority, known as the Bay Area Infrastructure Financing Authority (BAIFA), is composed primarily of representatives of the three counties where the express lanes are located: Alameda, Contra Costa and Solano. BAIFA is responsible for policy and operational decisions such as toll rates, project phasing and use of revenue. BAIFA will also operate the toll system on US-101 in San Mateo County under contract to San Mateo County transportation agencies, which are responsible for project delivery, operational policy and use of revenue.

The map below highlights MTC's portion of state-authorized Bay Area Express Lanes and shows where lanes will be converted from HOV lanes and where new lanes will be added.





## C. MTC Express Lane Project Funding

MTC is using existing funding to convert existing HOV lanes to express lanes and to conduct environmental studies and design on some gap closure projects, so they are “shelf-ready” should construction funding become available. This will allow MTC to open as much of its 270-mile network as quickly as possible.

The table below lists the projects that comprise MTC Express Lanes according to current funding status.

County	Route	Project	Geographical Limits	Miles	Environmental	Design	Construction
NEAR-TERM CONVERSIONS AND GAP CLOSURE OPPORTUNITY PROJECTS							
ALA	880	I-880 Alameda	Between San Leandro and Milpitas <i>Hegenberger Rd./Lewelling Blvd. to Dixon Landing Rd.</i>	51	●	●	●
CC	680	I-680 Contra Costa Southern Segment	Between Walnut Creek and San Ramon <i>Livorna Rd./Rudgear Rd. to Alcosta Blvd.</i>	23	●	●	●
CC	680	I-680 Contra Costa Northern Segment Southbound	Martinez to Walnut Creek <i>Marina Vista Blvd. to Rudgear Rd.</i>	11	●	●	●
SOL	80	I-80 Solano	Fairfield to Vacaville <i>Red Top Rd. to I-505</i>	36	●	●	○
MID-TERM CONVERSIONS AND GAP CLOSURE OPPORTUNITY PROJECTS							
ALA/ CC	80	I-80 and Westbound Approaches to the Bay Bridge	Between Crockett and Bay Bridge <i>Cummings Skyway to Bay Bridge; I-80, I-580, I-880 and West Grand approaches to Bay Bridge</i>	44	◐	○	○
ALA/ SM	84	Dumbarton Bridge Western Approach	Fremont/Newark <i>I-880 to Dumbarton Bridge</i>	3	●	○	○
ALA/ SM	92	San Mateo Bridge Westbound Approach	Hayward <i>I-880 to San Mateo Bridge</i>	3	●	○	○
CC	680	I-680 Contra Costa Northbound Express Lane Completion	Walnut Creek to Benicia <i>North Main St. to Marina Vista Blvd.</i>	9	●	○	○

### KEY




● Funded   ◐ Partially Funded   ○ Unfunded

ALA = Alameda,   CC = Contra Costa,   SM = San Mateo,   SOL = Solano




## III. CAPITAL DELIVERY

### A. Schedule

The schedule summary below reflects the “open to traffic” dates of the original “baseline” schedule, and the current completion forecast for the projects that are fully funded.

Project	Baseline Opening	Forecast Opening	Confidence Level	Detail Page
<b>I-880 Alameda (ALA-880)</b> San Leandro and Milpitas <i>Hegenberger Rd./Lewelling Blvd. to Dixon Landing Rd.</i>	Spring 2019	Summer 2020		13
<b>I-680 Contra Costa Southern Segment (CC-680 South)</b> Walnut Creek and San Ramon <i>Livorna Rd./Rudgear Rd. to Alcosta Blvd.</i>	Fall 2016	Fall 2017 Actual		A-5
<b>I-680 Contra Costa Northern Segment Southbound (CC-680 North SB)</b> Martinez to Walnut Creek <i>Marina Vista Blvd. to Rudgear Rd.</i>	Fall 2018	Winter/Spring 2021		16

#### KEY

-  Within schedule shown.
-  Identified potential risks that may significantly impact schedule if not mitigated. See *Section III.D Risk Management Plan* for further discussion of schedule risk.
-  Known impact to schedule, changes forthcoming.

## B. Capital Costs

The cost summary below shows: 1) the costs of each express lane [corridor or segment] including planning, design and construction of the civil infrastructure, and installation and integration of the backhaul communications and toll system, and 2) program-wide costs including planning and design, and implementation of centralized elements of the backhaul network and toll system. The total cost estimate includes the full estimated cost to complete MTC Express Lanes. The approved Expenditure Plan fully funds the first three projects listed below, the environmental and design phases for the I-80 projects in Solano County, and the environmental phase for the westbound approaches to the San Mateo and Dumbarton Bridges. Beginning with the fourth quarter of 2019, MTC's Finance Section is reporting financial information to BAIFA about one quarter in arrears, which does not fit with the production timeline for the Quarterly Report. As a result, the expended-as-of amounts shown below represent the unaudited amount of BATA Express Lane funds expended through December 2019, the fourth quarter of 2019; percent complete amounts are reported through the same quarter for consistency. The confidence level assessment reflects potential risks to each project budget; for more information, see Section III.D Risk Management Plan.

Project <sup>(1)</sup>	Total Cost Estimate <sup>(2)</sup>	Cost Estimate, Funded Phases <sup>(3)</sup>	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds <sup>(4)</sup>			Percent Complete as of 12/31/19 <sup>(5)</sup>	Confidence Level <sup>(6)</sup>
					July 2018 Amendment	Sept. 2018 Amendment	Expended as of 12/31/19		
NEAR-TERM CONVERSIONS AND GAP CLOSURE OPPORTUNITY PROJECTS									
Costs shown in millions of escalated dollars									
I-880 Alameda	139.1	139.1			135.5	139.1	106.4	90%	●
I-680 Contra Costa Southern Segment	54.0	54.0			55.6	54.0	52.5	99%	●
I-680 Contra Costa Northern Segment Southbound <sup>(7)</sup>	127.4	127.4	19.4	54.3	51.3	53.6	20.2	45%	●
I-80 Solano	274.9	32.5	14.4		19.0	18.1	11.6	20%	●
Centralized Toll System	32.4	32.4			33.6	32.4	22.2	90%	●
Program Planning, Coordination & Management	28.4	28.4			28.4	28.4	21.6	75%	●
Program Contingency	6.1	6.1			5.1	2.9			●
Capitalized Start-up O&M	16.0	16.0			16.0	16.0	4.9		●
MID-TERM CONVERSIONS AND GAP CLOSURE OPPORTUNITY PROJECTS									
I-80 Alameda/Contra Costa and Westbound approaches to the Bay Bridge (I-80, I-580, I-880, West Grand)	193.0	5.0	5.0						
Dumbarton Bridge Westbound Approach (SR-84)	9.0	0.3			0.3	0.3	0.3	5%	
San Mateo Bridge Westbound Approach (SR-92)	10.0	0.4			0.4	0.4	0.4	5%	
I-680 Contra Costa Northbound Express Lane Completion <sup>(8)</sup>	390.0	21.5	1.5	20.0				5%	
Centralized & Program Costs & Start-Up O&M - Gap Closures & Future Conversions	TBD								
TOTALS	1,280.3	463.1	40.3	74.3	345.2	345.2	240.1	74%	

<sup>(1)</sup> Other Gap Closure and Extension projects not shown: ALA-880 extension northbound from Lewelling to Hegenberger; SOL-80 gap closure from Carquinez Bridge to Red Top Road; SOL-80 extension east of I-505; SOL-680 gap closure from Benicia to Cordelia

<sup>(2)</sup> Total Cost Estimate represents current estimated cost to complete each project.

<sup>(3)</sup> Cost Estimate, Funded Phases represents current estimated cost to complete phases that are funded for each project.

<sup>(4)</sup> BAIFA Express Lane Funds represent the funds that have been allocated from the BATA budget and transferred to the BAIFA budget.

<sup>(5)</sup> Percent completes shown are based on the achievement of major milestones, whether those milestones were completed using BAIFA funds or other funds. Projects that have completed milestones using other funds include I-680 Contra Costa Northern Segment Southbound and I-80 Solano.

<sup>(6)</sup> ● = Within budget, ● = identified potential risks that may significantly exceed budget if not mitigated, ● = Known impacts to budget - changes forthcoming.

<sup>(7)</sup> Cost represents the total for HOV Completion and Conversion to Express Lanes. Other funds committed to the HOV Completion portion include Measure J (\$38.7M) and STIP (\$15.6M).

<sup>(8)</sup> Represents completion of HOV lane through Walnut Creek to SR-242 and conversion of existing HOV lane north of SR-242, which were previously listed separately.

## C. Change Management

The change management process captures the changes in the program that have an impact on the approved scope, schedule and budget baselines. The start of tolling on the I-680 North project is now Winter/Spring 2021, ahead of the most recent forecast of Fall 2021, due to the civil contractor accelerating construction. While there were no changes to the MTC Express Lanes Program budget in the first quarter of 2020, the total cost estimate of the I-80 Solano project increased to \$274.9 million to reflect 3 years of delay to the start of construction, including escalation, new median barrier design standards and materials costs. Despite the increase, the amount of BATA Express Lane Funds committed to the I-80 Solano project remains the same.

## D. Risk Management Plan

MTC manages risk at both the program and contract level by identifying risks that could negatively impact the program's cost and schedule, and assigning responsibility to the person best positioned to manage each risk. Risks managed at the contract level are associated with contingency funding authorized by BAIFA for specific contracts. Risks managed at the program level would draw upon the program contingency line item in the Express Lanes Expenditure Plan. Staff regularly review the risk exposure and mitigation plans at both the contract and program level.

Chart #1 shows the median risk exposure for the program-level risks using Monte Carlo analysis. As of March 31, 2020, the risk exposure stands at \$4.8 million, which is slightly higher than the \$4.5 million reported last quarter. This change is due to a number of factors, including: the addition of COVID-19 risks and risks associated with I-680 North opening. Some prior risks have been retired, including those associated with PG&E delays (as most work is done) and the approval of new operating policies (addressed with approval of the BAIFA toll ordinance amendment in January 2020). The team will continue to track COVID-19 impacts and reevaluate risk on a monthly basis as described in more detail below.

Chart #2 tracks the program's cost forecast and risk exposure as compared to the authorized program budget. Consistent with the amendment to the Expenditure Plan that was adopted on September 26, 2018, the amount of BATA Express Lane Funds allocated to specific express lanes projects is \$342.3 million, plus program contingency, for a total authorized budget of \$345.2 million.

The current program contingency of \$2.9 million would fall short if the risk exposure of \$4.8 million were realized. While there are few individual risks with major cost impacts, there are many risks with minor cost impacts, resulting in an overall significant risk exposure. Staff remains diligent in managing cost and risk while seeking new funding opportunities.

The top contributors to the program-level risk exposure and the associated mitigation strategies are as follows:

### I-880 Alameda

- The team is tracking potential impacts of the COVID-19 public health crisis on the completion of the I-880 corridor. Work has been able to progress without significant impacts. BAIFA found project construction to

Chart #1: Median Risk Exposure (\$M)

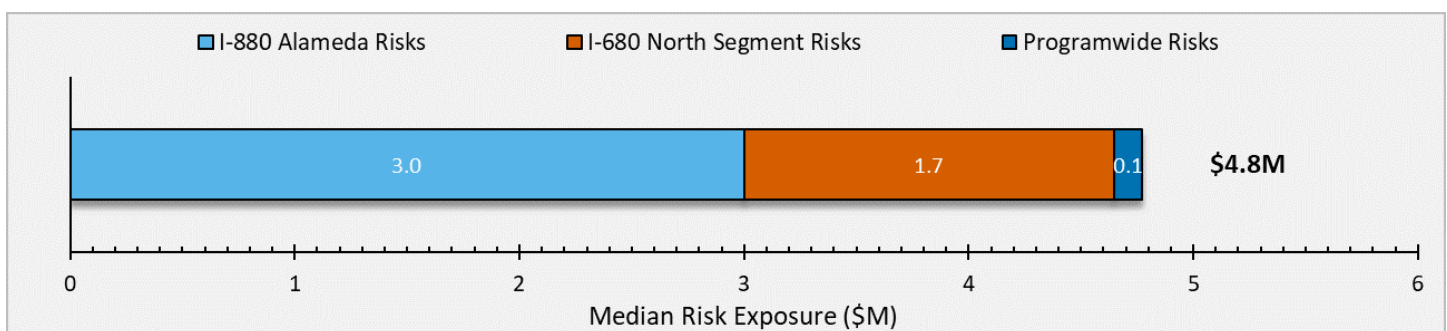


Chart #1 shows the contribution of each project's risks toward the total program risk exposure. Risk exposure is calculated using Monte Carlo simulation.

be an essential government function based on Governor Newsom's identification of critical infrastructure sectors; this allowed construction to continue in compliance with Alameda County public health directives. Given the unknowns, the risk will be monitored closely over the coming months and has moderate probability cost and schedule impacts.

- The most significant risk affecting cost and schedule relates to toll system delays that impact the opening of I-880. In general, the toll system integrator has been delayed for reasons including challenges coordinating with civil construction, weather, equipment delays, tight labor market affecting hiring of qualified staff, and staff shared with competing projects. However, no delay was incurred in the current reporting quarter. MTC staff continues to work with the toll system integrator to mitigate cost and schedule delays.
- MTC staff is working actively to mitigate risks relating to toll system and backhaul conflicts with previously undisclosed Caltrans projects under construction in the corridor. BAIFA has provided field marking services to locate facilities underground for Caltrans. BAIFA is also working with Caltrans to determine mitigation strategies, such as convening workshops to identify conflicts during project design, and providing maps of toll system and backhaul asset locations for future reference. Many of these mitigation strategies have proven successful in identifying project conflicts; however, the risk remains significant due to the large number of ongoing projects.
- Additionally, MTC staff is tracking risks regarding coordination with Caltrans on a striping and signage plan for interim conditions on the corridor, prior to opening I-880 to toll-paying traffic. This coordination has been ongoing and the striping and signage plan has received preliminary approval from Caltrans. The risk has been lowered.

### I-680 Contra Costa Northern Segment Southbound

- The team is tracking potential impacts of the public health crisis on the completion of the I-680 corridor. At this time, work has progressed without significant impacts; however there are concerns about materials availability and staffing in the future. Given the unknowns, the risk will be monitored closely over the coming months and has

moderate probability cost and schedule impacts.

- The most significant schedule risk at this time is due to the toll system integrator working in tight sequence on I-880, I-680 North and US-101. Based on recent developments, the team is working to expedite the delivery of I-680 North, but in order to do so, timely delivery of the I-880 corridor as well as additional staff support will be needed.
- The toll system integrator is looking for opportunities to add support staff to the projects, and MTC continues to track the schedules of all corridors to facilitate delivery. Additionally, staff is evaluating the impact the potential schedule shift will have on public outreach, toll ordinance adoption, and back office readiness. The team will continue to monitor these schedule risks moving forward.
- PG&E delays in hookups remain a risk on I-680 North, however, the risk has been lowered based on recent developments. There are currently regular quarterly meetings with PG&E to discuss progress and issue resolution, and all but one site has been scheduled to be energized. The team will continue to track this risk.

### Programwide Risks

- As the program moves towards opening both the I-880 and I-680 North express lanes, MTC staff is supporting the FasTrak® customer service center's readiness in anticipation of increased workload. Staff is working in close collaboration with FasTrak® to ensure successful express lanes openings.



Chart #2: Program Cost Forecast and Risk Exposure vs. Authorized Budget (\$M)

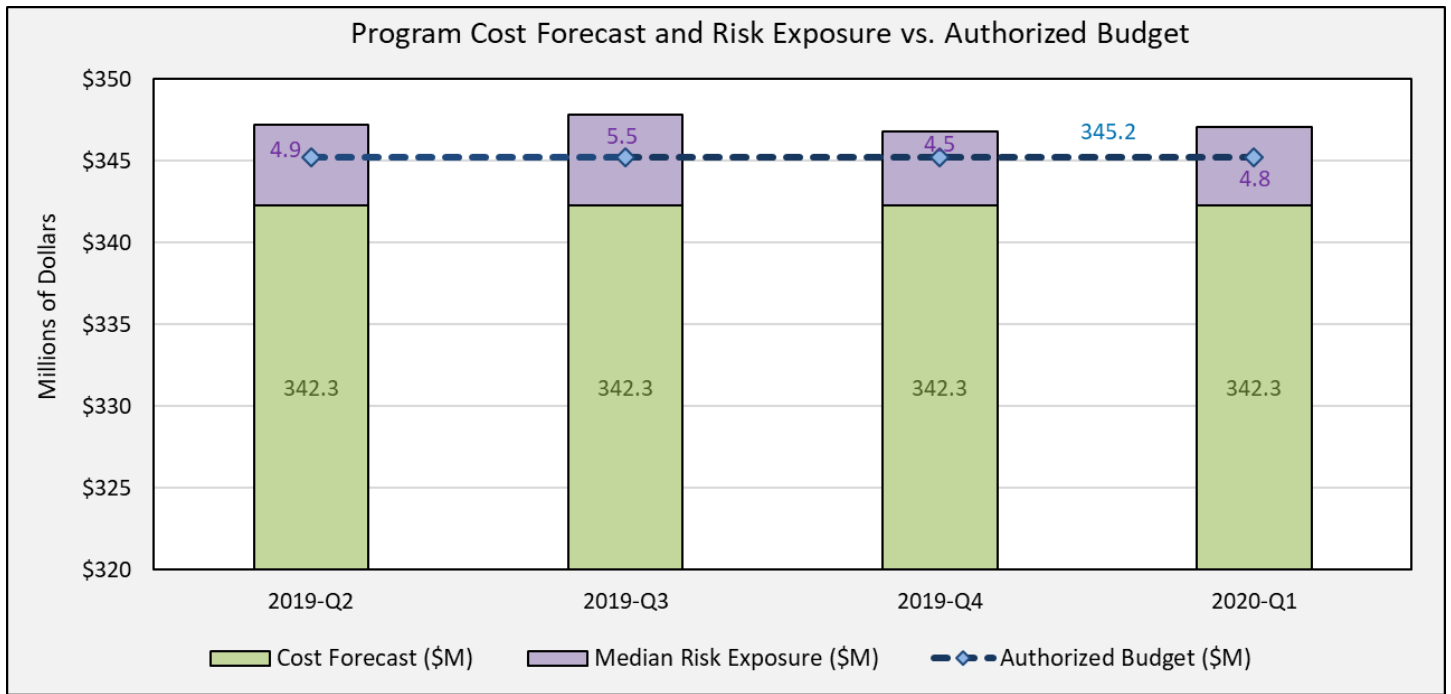


Chart #2 shows the program cost forecast and risk exposure as compared to the authorized program budget.

## E. Active Capital Project Summaries

### Centralized Functions

#### Toll System and Program Management, Planning and Regional Coordination

##### Total Estimated Cost

\$32.4 million for the Centralized Toll System

\$28.4 million for Program Planning, Coordination and Management

##### Schedule

Centralized Toll System was ready for the opening of the I-680 Contra Costa Southern Segment on October 9, 2017.

Program Planning, Coordination and Management is ongoing through the opening of the funded projects.

##### Project Description

The Centralized Toll System includes the elements of the toll system that are needed to toll all the express lanes, as well as the backhaul communications network components, such as fiber optic cable and leased line services, that transport toll data from MTC lanes to host and toll operations data centers. Centralized toll system work includes designing and implementing the hardware and software for dynamic toll setting and trip building, integration with the FasTrak® Customer Service Center, and acquiring spare parts.

Program management, planning and regional coordination tasks include managing the expenditure plan, cost, schedule and risk; developing the express lane business rules and toll ordinance; conducting customer education and outreach; building out the Regional Operations Center and developing operating procedures; planning for future express lanes; and coordinating with partner agencies to offer a seamless experience for drivers.

##### Program Management Highlights and Progress

- In January 2020, BAIFA approved an amendment to its Toll Facility Ordinance, establishing tolling rules for the I-880 Express Lanes, including half-price tolls for 2-person vehicles and clean air vehicles. BAIFA also approved half-price tolls for clean air vehicles on the I-680 Contra Costa Express Lanes, but 2-person vehicles will remain toll-free. The rules take effect when the I-880 Express Lanes open.
- In mid-March 2020, all Bay Area Express Lanes operators ceased tolling on express lanes in response to the COVID-19 public health crisis. While operations of BAIFA's I-680 Contra Costa Express Lanes was affected, staff coordinated with Caltrans, CHP and BAIFA's civil and toll system contractors to continue progress delivering the I-880 and I-680 North Southbound express lanes.
- Staff coordinated with Caltrans, CHP and the Valley Transportation Authority, which operates the SR-237 Express Lanes, on public information strategies for opening the I-880 Express Lanes.

##### Current Program Management Activities

- Staff is preparing to restart tolling on BAIFA's I-680 express lanes on June 1, the same day as other Bay Area express lanes, so that drivers have a reliable trip option as shelter-in-place is lifted and traffic resumes.
- In partnership with other express lane operators, staff is finalizing a strategic plan to help prioritize express lanes funding and delivery in the region. This work is coordinated with MTC's Planning Section to inform Plan Bay Area 2050.
- Staff is coordinating with other express lane operators on their studies to understand low-income travelers' needs, and developing an approach to address equity concerns for BAIFA's express lanes.
- The MTC Operations Committee will be asked to award contracts to two vendors for pilots to improve occupancy enforcement. A roadside camera system would be piloted at the Bay Bridge, and a smartphone app system would be piloted in the I-680 Contra Costa Express Lanes corridor. Lessons learned from the pilots over the next 1-2 years may position BAIFA to better deter HOV eligibility violators.

## Toll System Highlights and Progress

- The toll system integrator contract was awarded in June 2014.
- Buildout of the Regional Operations Center was finished in March 2017.
- The toll system went live to the public on October 9, 2017.
- In December 2018, the toll system integrator contract was extended to June 2023 to include the I-680 Northern Segment. The change removed the I-80 Solano express lanes from the contract. It will be added back when construction funding is secured.
- The I-680 Southern Segment Operations Test concluded in April 2019. Operations testing is a system acceptance test. The Operations & Maintenance (O&M) phase, which includes a one-year warranty period, began in May 2019.
- The toll system integrator went live with lane-side equipment software to finalize the 6C enhancements. The system began tolling 6C tags on October 8, 2019.
- In March 2020, the express lane Host system began sharing toll rate information with MTC's 511 Traveler Information System.

## Current Toll System Activities

- Staff continues negotiations with the toll system integrator to streamline the work required to produce toll system performance monitoring reports. The current process is too manual. The goal is to reduce the future maintenance costs for new express lane corridor.
- To improve data quality and streamline trip building, the toll system integrator continues work, at no cost to BAIFA, on a new module for image review and trip building. The module will be implemented and tested before I-880 opens. There will be an average estimated cost of 7 cents per image reviewed, but the cost structure incentivizes less image review..



Close-up of toll system equipment under sign (enforcement beacons, reader antennae and laser trigger)

*Photos courtesy of Noah Berger*



Overhead hours of operation sign and toll system equipment on the I-680 Express Lanes



Overhead pricing sign on the I-680 Express Lanes

# I-880 Alameda (ALA-880)

## Oakland to Milpitas

### Hegenberger Road/Lewelling Boulevard to Dixon Landing Road

#### Total Cost Estimate

\$139.1 million

#### Scheduled Open Date

Summer 2020

#### Project Description

The project converts the existing I-880 HOV lanes that run from Hegenberger Road to Dixon Landing Road in the southbound direction and from Dixon Landing Road to Lewelling Boulevard in the northbound direction to express lanes.

The conversion involves lane striping and installing sign structures, signs, FasTrak<sup>®</sup> toll tag readers, traffic monitoring video cameras, lighting, a data communications network and California Highway Patrol observation areas. The highway is also being widened in three locations to accommodate merge lanes into and out of the express lanes. It will result in 51 express lane miles between Oakland and Milpitas.

The express lanes conversion project is being coordinated with a median barrier reconstruction project and a pavement resurfacing project, both led by Caltrans. The median barrier reconstruction project installed foundations and other infrastructure required for the express lanes for a large portion of the corridor.

#### Project Highlights and Progress

- Public open houses were held in March 2015.
- Preliminary engineering report and environmental document were completed in October 2016.
- The express lanes civil contractor began construction in September 2017.
- Caltrans approved the toll system design and issued the encroachment permit for the toll system integrator in March 2018.
- MTC's express lanes scope of work delivered through Caltrans' median barrier contract was completed in the second quarter of 2018, including barrier demolition, express lane sign structure foundations and light foundations.
- Caltrans completed its technical review to determine I-880 hours of operation (5am to 8pm, Monday through Friday) and high occupancy vehicle threshold (3 or more persons) in fall 2018.
- Caltrans finalized the design of fiber laterals to connect its freeway management equipment to the communications backhaul in December 2018. Construction work commenced on the Caltrans fiber laterals in October 2019.
- In March 2019, the civil contractor successfully removed two existing overhead sign bridge structures at the SR-92 interchange and installed two new ones.
- The backhaul contractor connected the backhaul corridor hubs to the toll system host and operations datacenters in Martinez, Oakland and San Francisco in October 2019. The toll system integrator approved the I-880 backhaul fiber in November 2019.



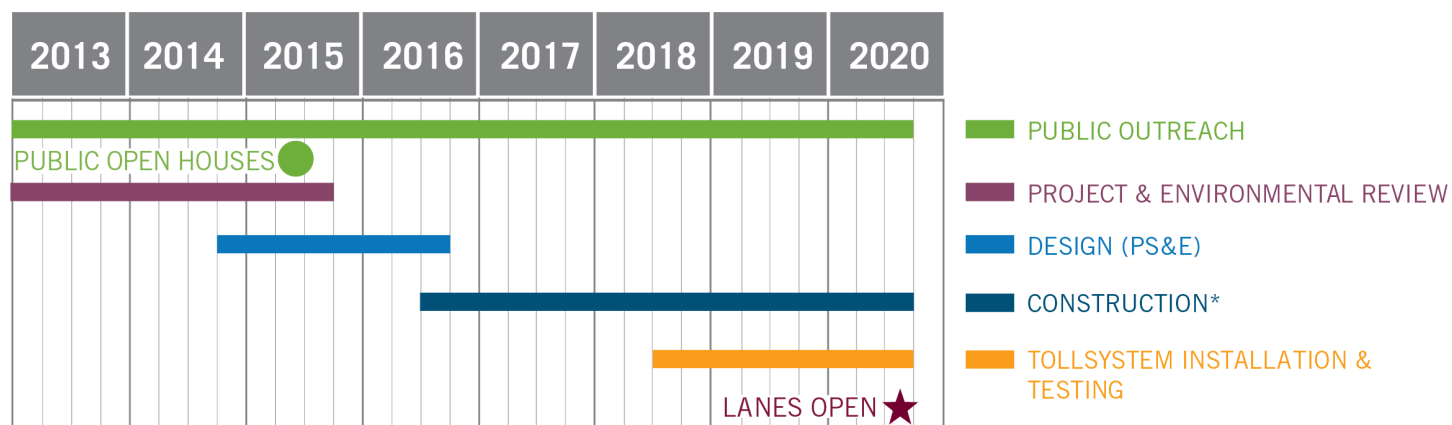
- All PG&E service connections are complete.
- At strategic points in the project timeline, staff performed outreach and education about I-880 design, construction and proposed operations including with members of low-income communities (2012); corridor city staff (2015 & 2019); and corridor elected officials (2017 & 2019).

## Current Project Activities

- Civil construction work is 95% complete as of March 2020. Remaining work includes installation of fiber laterals to connect Caltrans' freeway management equipment to the communications backhaul, which will continue through summer 2020. Final pavement and express lane striping will start in June 2020. During this interim period, the future I-880 express lanes will be signed and continue to function as HOV lanes. Final signing and pavement marking civil work to transition the HOV lanes to express lanes will start in August.
- The toll system integrator will continue installation of roadside cabinets, toll system equipment in the median, variable toll message signs, CCTVs and connections of electrical and fiber conduits from Dixon Landing Road to SR-92, which is 90% complete, and from SR-92 to Hegenberger Road, which is 50% complete. Toll system equipment installation for the full project is expected to be completed in spring 2020 and will be followed by testing. Staff is incentivizing the toll system integrator to be ready to open before the end of summer.
- Staff is coordinating with AT&T to establish a second communication path from southern hub at Dixon Landing Road to host datacenters.
- Staff is continuing 'go live' planning in order to be ready to open the I-880 Express Lanes.
- Staff is finalizing customer education materials and lining up messaging channels for a customer education campaign. The first phase of the campaign is about lane access striping changes that will commence in June 2020. Outreach for these changes will start a few weeks prior to striping activities. The second phase of the campaign is about tolling rules and the change in HOV eligibility, and will start a few months before tolling begins.
- Staff is finalizing an engagement strategy to encourage and reward high occupancy vehicle (HOV) mode use in the I-880 corridor and confirming stakeholder and employer engagement contacts. Staff is sensitive to encouraging carpooling given the COVID-19 public health crisis, and is trying to remain flexible depending on how the situation evolves.
- Monthly construction notices and ramp closure/ detour notices continue to be sent.



## Project Schedule by Phase



\*Includes I-880 median barrier improvements.

## Project Cost

Total Cost Estimate <sup>(1)</sup>	Cost Estimate, Funded Phases <sup>(2)</sup>	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds <sup>(3)</sup>			Percent Complete as of 12/31/19 <sup>(4)</sup>
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 12/31/19	
139.1	139.1			135.5	139.1	106.4	90%

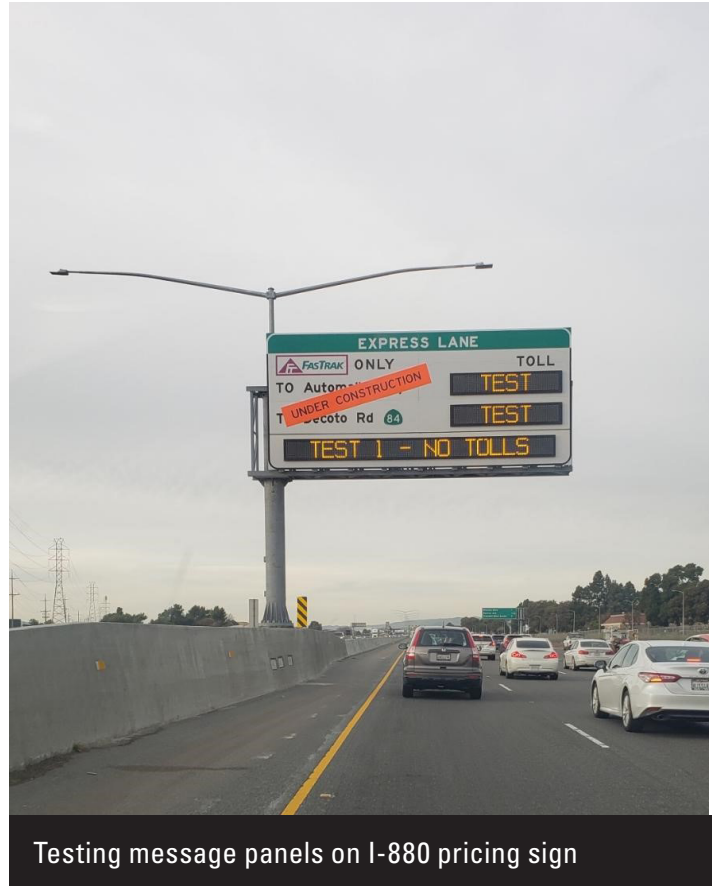
The cost estimate for this project includes planning, design, construction, utilities, backhaul communications and toll system integration.

Costs shown in millions of escalated dollars.

- (1) Total Cost Estimate represents current estimated cost to complete each project.
- (2) Cost Estimate, Funded Phases represents current estimated cost to complete phases that are funded for each project.
- (3) BAIFA Express Lane Funds represent the funds that have been allocated from the BAIFA budget.
- (4) Percent complete shown is based on the achievement of major milestones whether those milestones were completed using BAIFA funds or other funds.



Numeric enforcement beacon for CHP on I-880



Testing message panels on I-880 pricing sign



Elevated view of enforcement area on I-880 in Fremont

## I-680 Northern Segment Southbound (CC-680 North SB)

### Martinez to Walnut Creek

#### Benicia Bridge to Rudgear Road

#### Total Cost Estimate

\$127.4 million (\$53.6 million to be funded by BAIFA)

#### Scheduled Open Date

Winter/Spring 2021

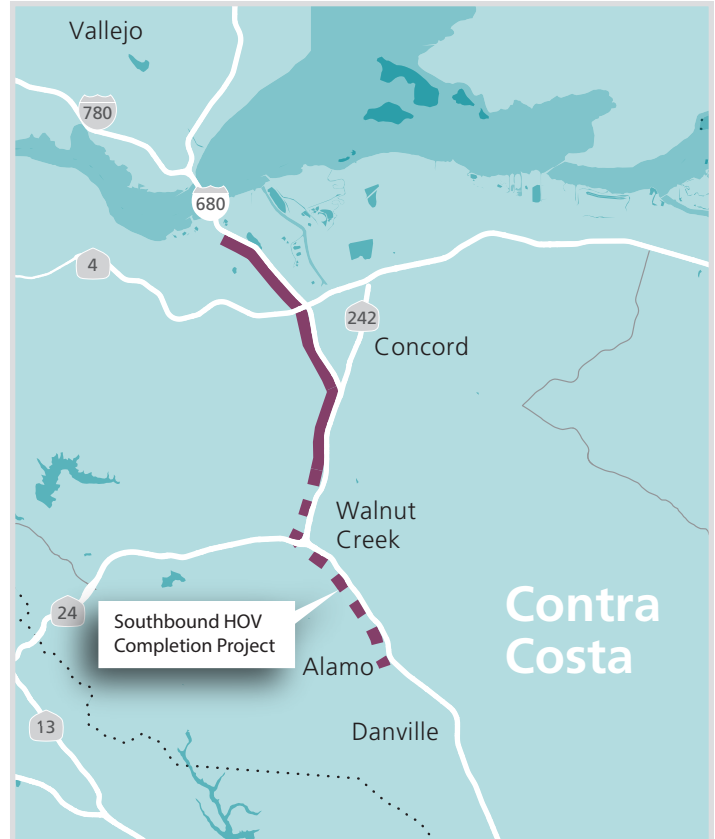
#### Project Description

The project will convert 11 miles of the existing HOV lane on southbound I-680 from just south of Marina Vista Avenue in Martinez to North Main Street in Walnut Creek into an express lane. It also includes express lane elements for the I-680 Southbound HOV Completion Project. Once complete, I-680 will have a continuous southbound express lane from Martinez to the Alameda County line.

Civil construction will be delivered by the Contra Costa Transportation Authority (CCTA). MTC will install toll and communications equipment and will operate the express lanes.

#### Project Highlights and Progress

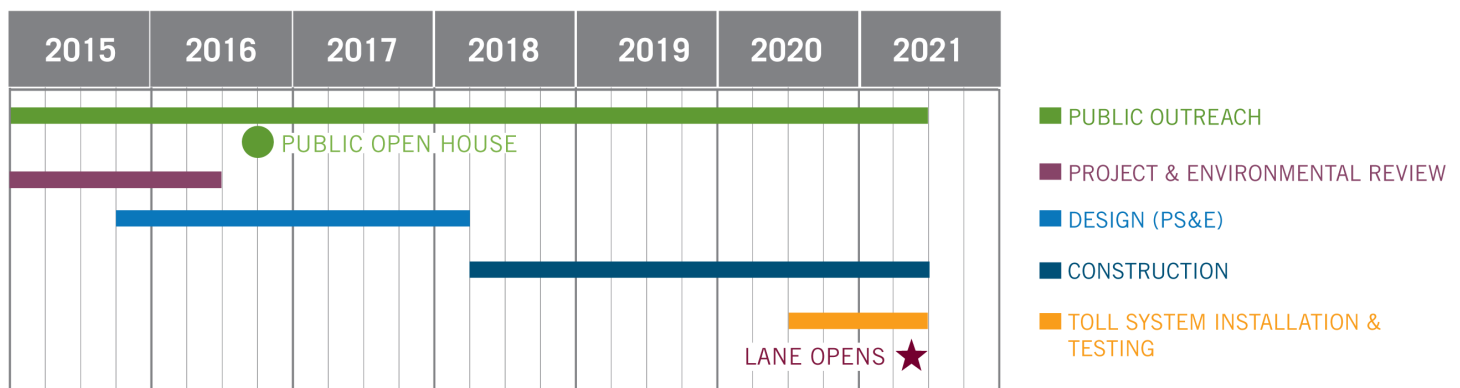
- Caltrans signed the environmental document in December 2016 and approved the Project Report in August 2017. Caltrans completed a revalidation in September 2017.
- A contract to remove trees along southbound I-680 in Walnut Creek between South Main Street and Livorna Road was awarded in October 2017, and work was completed in December 2017.
- All utility relocations were completed as of August 2018.
- Construction started October 1, 2018, and a ground-breaking event was held October 3, 2018.
- In December 2018, the toll system integrator contract was extended to June 2023 to include I-680 North SB.
- In May 2019, the backhaul contractor successfully rerouted the backhaul fiber between SR-24 and Livorna Road in Walnut Creek to allow for lane widening, and the toll system integrator participated in switching the live toll equipment from the old to the new fiber.
- In June 2019, CCTA and Caltrans executed an amendment to incorporate Caltrans oversight of landscape work and the first year of plant establishment into their cooperative agreement.
- In September 2019, BAIFA and Caltrans executed a cooperative agreement for Caltrans to review and approve the toll system design package, issue an encroachment permit and review site installation (as needed).
- Caltrans concurred with the replacement planting design in February 2020.



## Current Project Activities

- The civil contractor completed work on the new concrete median barrier between SR-242 and SR-24. The civil contractor continues highway widening activities at various locations on I-680 southbound at Monument Boulevard and at the BART overcrossing as well as construction of the sound wall in Walnut Creek (between South Main Street and Rudgear Road). Two of five retaining walls are complete; construction of the remaining three is on-going. The contractor plans to complete electrical lighting and
- tolling work at various locations on I-680 between SR-242 and SR-24 in April, and will perform walkthroughs with Caltrans and the toll system integrator.
- Caltrans will finish its review of the toll system design and issue an encroachment permit for the toll system integrator in May 2020.
- Staff is coordinating with Contra Costa Transportation Authority staff who will lead a public outreach campaign about the opening of the express lane extension on behalf of BAIFA.

## Project Schedule by Phase



## Project Cost

Total Cost Estimate <sup>(1)</sup>	Cost Estimate, Funded Phases <sup>(2)</sup>	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds <sup>(3)</sup>			Percent Complete <sup>(4)</sup> as of 12/31/19 <sup>(4)</sup>
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 12/31/19	
127.4	127.4	19.4	54.3	51.3	53.6	20.2	45%

Costs shown in millions of escalated dollars.

The cost estimate for this project includes planning, design, construction, utilities, backhaul communications and toll system integration.

<sup>(1)</sup> Total Cost Estimate represents current estimated cost to complete each project.

<sup>(2)</sup> Cost Estimate, Funded Phases represents current estimated cost to complete phases that are funded for each project.

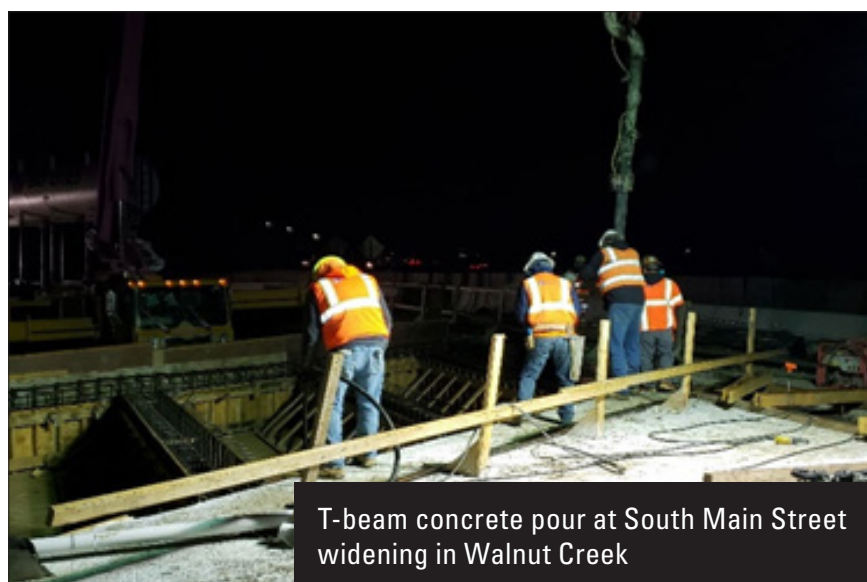
<sup>(3)</sup> BAIFA Express Lane Funds represent the funds that have been allocated from the BAIFA budget.

<sup>(4)</sup> Percent complete shown is based on the achievement of major milestones whether those milestones were completed using BAIFA funds or other funds.





Construction of forms for sound wall on I-680 in Alamo/Walnut Creek



T-beam concrete pour at South Main Street widening in Walnut Creek



HMA paving on SB I-680 at Alamo/Walnut Creek



# I-80 Solano (SOL-80)

## Fairfield to Vacaville

### Red Top Road to I-505

#### Total Cost Estimate

\$274.9 million

#### Scheduled Open Date

2023, subject to funding

#### Project Description

This project will convert the existing eastbound and westbound HOV lanes to express lanes between Red Top Road and Air Base Parkway in Fairfield. Conversion work includes striping lanes and installing sign gantries, signs, FasTrak® toll tag readers and traffic-monitoring video cameras.

The project will also construct new eastbound and westbound lanes between Air Base Parkway and I-505 in Vacaville. In this section, the highway will be widened along with the installation of express lane striping, signage and equipment. The project will result in 36 miles of express lanes on I-80 in Solano County.

The Solano Transportation Authority (STA) is the lead agency for environmental clearance and civil design.

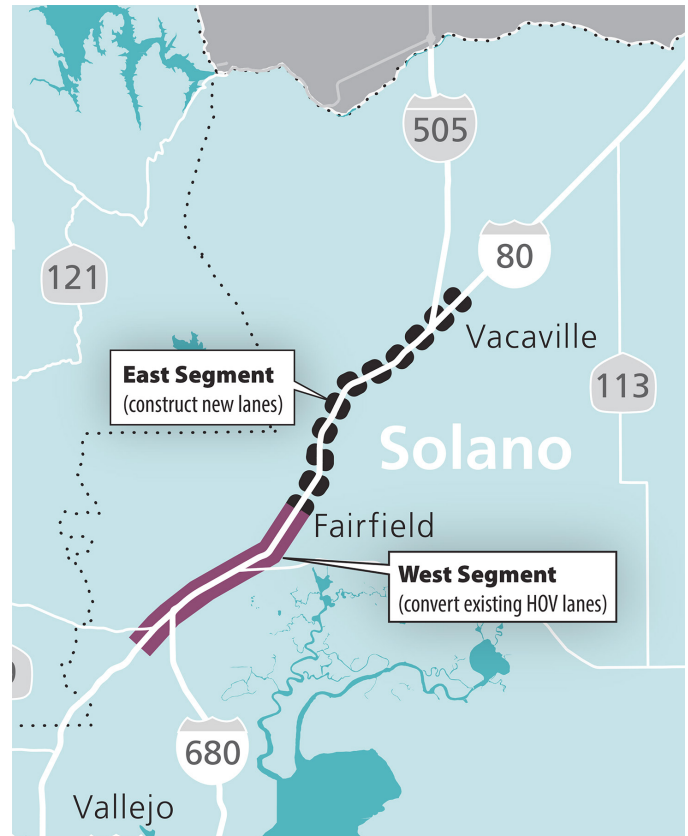
Caltrans will advertise and award the construction contract, and a blended Caltrans/STA team will administer construction. MTC will install toll and communications equipment and will operate the express lanes.

#### Project Highlights and Progress

- A public open house was held in August 2015.
- The preliminary engineering report and environmental document were completed in December 2015.
- The final design document was approved by Caltrans in March 2018.
- The project reached the Ready-to-List milestone in April 2018.
- Caltrans submitted this project for a Federal INFRA grant in March 2019, but it was not selected by the US Department of Transportation.

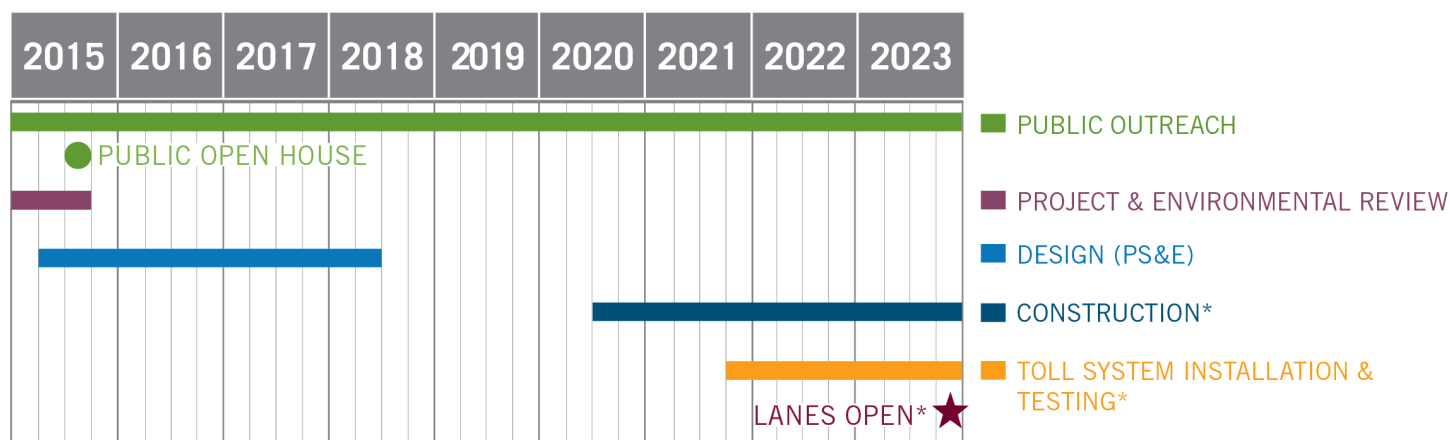
#### Current Project Activities

- The project is shelf-ready should construction funds become available.



- The Sol-80 project cost has been updated to \$274.9M. The previous cost of \$228.2M was developed in 2018 with the assumption of a construction start date in 2018. The updated cost reflects a construction start date in 2021 and therefore includes three years of escalation for construction and support costs. The cost estimate has also been updated to reflect design and construction costs associated with Caltrans' new standard for taller median barriers and to incorporate current market costs for items such as steel, concrete, and electrical items that have experienced significant increases over the two years since the cost was last updated.
- MTC and STA staff continue to explore potential funding sources, including 2020 Senate Bill 1 competitive funding programs and Regional Measure 3 Express Lane Program funds.

## Project Schedule by Phase



\* Funding for these activities is not yet secured.

## Project Cost

Total Cost Estimate <sup>(1)</sup>	Cost Estimate, Funded Phases <sup>(2)</sup>	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds <sup>(3)</sup>			Percent Complete as of 12/31/19 <sup>(4)</sup>
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 12/31/19	
274.9	32.5	14.4		19.0	18.1	11.6	20%

Costs shown in millions of escalated dollars.

The cost estimate for this project includes planning, design, construction, utilities, backhaul communications and toll system integration.

<sup>(1)</sup> Total Cost Estimate represents current estimated cost to complete each project.

<sup>(2)</sup> Cost Estimate, Funded Phases represents current estimated cost to complete phases that are funded for each project.

<sup>(3)</sup> BAIFA Express Lane Funds represent the funds that have been allocated from the BAIFA budget.

<sup>(4)</sup> Percent complete shown is based on the achievement of major milestones whether those milestones were completed using BAIFA funds or other funds.

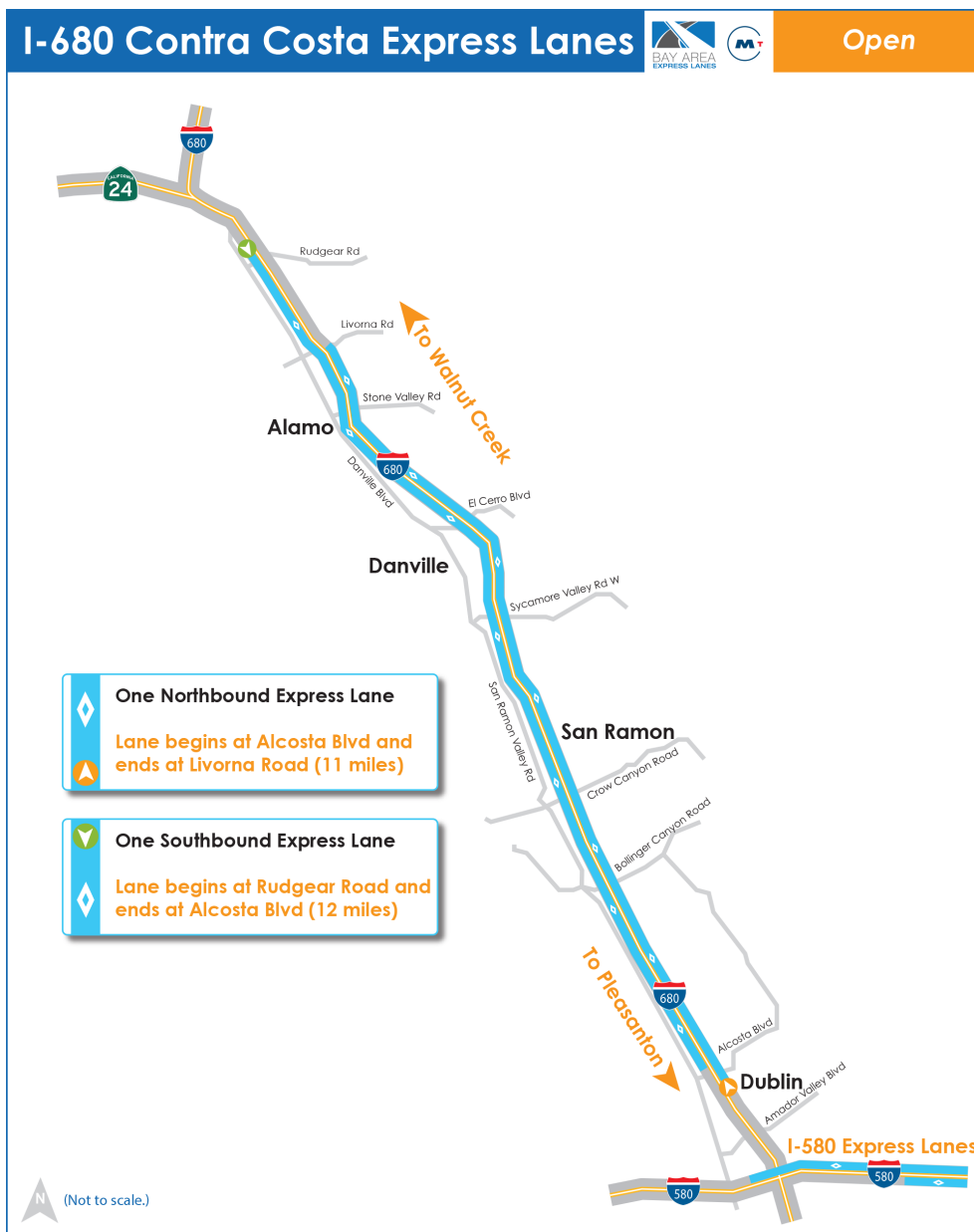
## IV. OPERATIONS

### I-680 Contra Costa Express Lanes

The I-680 Contra Costa Express Lanes opened October 9, 2017. The lanes run 11 miles northbound from Alcosta Boulevard to Livorna Road and 12 miles southbound from Rudgear Road to Alcosta Boulevard. Regional Operations Center staff monitor equipment and lane performance, make toll rate adjustments, and coordinate with the California Highway Patrol (CHP) and Caltrans on incident management. The FasTrak® Customer Service Center issues toll tags, handles toll invoicing and collections, and provides customer service. Toll tag and vehicle occupancy requirements are enforced automatically by the

toll system and manually by the CHP under contract to BAIFA. A 'backhaul' fiber network and supplemental leased-line services offer fast and secure transfer of tolling data. Roadway maintenance is also funded by the express lanes. Program and contractor staff perform public outreach and education, track and report on program performance and analyze traffic, and support operations in other ways as needed. Operating revenue and expenses are reported quarterly to BAIFA.

See **Appendix C** for a summary of this quarter's express lanes performance.



# APPENDICES

# APPENDIX A

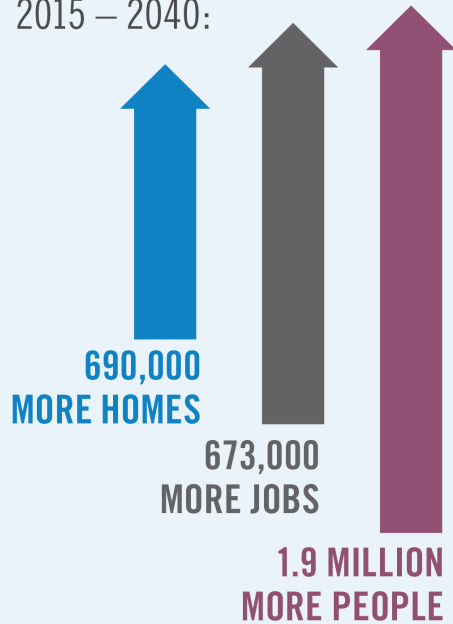
## Express Lanes Overview

### 1. Why Express Lanes?

The Bay Area lacks the necessary transportation funding and land to build enough transportation capacity to keep up with regional growth. Bay Area Express Lanes maximize use of our highways by A) filling any empty space in existing HOV lanes,

B) improving operations in existing HOV lanes through better carpool enforcement and strategies to prevent lane slowdowns, and C) filling gaps in the HOV lane system to encourage more carpooling.

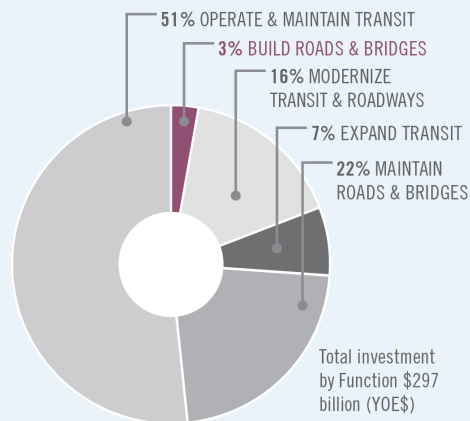
#### REGIONAL GROWTH 2015 – 2040:



Data Source: Plan Bay Area 2040 (2017).

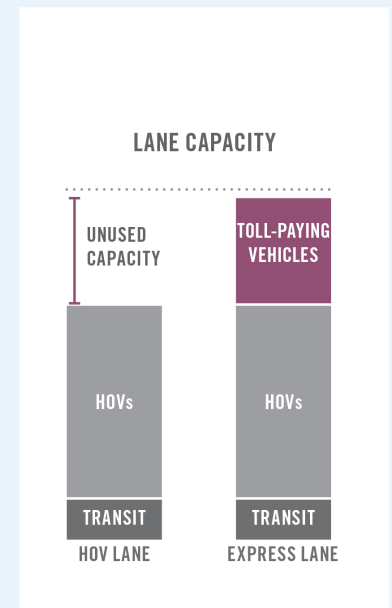
#### REGIONAL INVESTMENT BY 2040:

ONLY 3% OF THE REGION'S  
TRANSPORTATION DOLLARS WILL BE  
USED TO BUILD NEW ROADS.



Data Source: Plan Bay Area 2040 (2017).

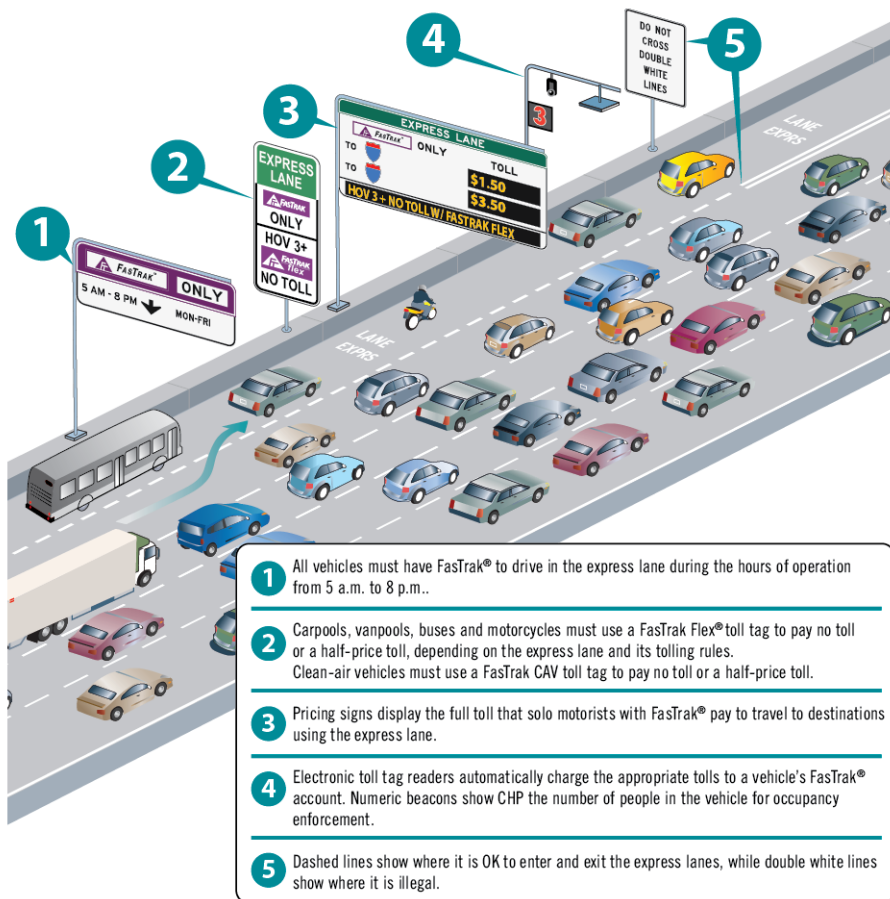
#### HOW EXPRESS LANES HELP:



## 2. How Express Lanes Work

MTC Express Lanes give everyone with FasTrak® the option for a more reliable and faster trip than regular highway lanes. Overhead electronic pricing signs display toll rates, which may change every few minutes with traffic. Tolls are collected electronically, the same as on Bay Area toll bridges.

Solo motorists pay tolls with either a standard FasTrak® toll tag or a FasTrak Flex® toll tag set to “1” person. Carpools, vanpools and buses must use a FasTrak Flex® toll tag set to “2” or “3+” people to pay no toll or a half-price toll, depending on the express lane and its tolling rules. Motorcycles must use a FasTrak Flex toll tag set to “3+” people to pay no toll. Effective when the I-880 Express Lanes open, qualifying clean air vehicles (CAV) must use a FasTrak CAV toll tag set to the number of people in the vehicle to pay no toll or a half-price toll. Drivers should always set the switch before driving.



The figure to the left explains how to use Bay Area Express Lanes. MTC Express Lanes will be “open” access to the extent possible, meaning drivers will enter and exit the express lanes similar to how they enter and exit HOV lanes today. Areas prone to excessive weaving or other safety concerns may have access restrictions to control entry and exit at these locations. Signage and lane striping will identify these entry and exit locations. Limiting access is a way to improve travel speeds in express lanes..



### 3. System Technology and Elements

MTC Express Lanes are implemented by overlaying communications equipment on new and existing freeway infrastructure. Express lanes implementation requires four discrete elements that are integrated through design, construction and operations, including:

#### Civil Infrastructure (Highway Modifications)

For lane conversions, the civil infrastructure consists of sign structures, sign panels, lane striping, and conduit work for power and communications. For gap closure and extension projects, the civil infrastructure includes highway widening to add lanes as well as the signage and communications equipment required for conversions.

The civil contractor will put in place the foundations and structures upon which the toll systems contractor will install the toll equipment. In addition, the civil contractor will construct the infrastructure necessary to provide power and communications to the toll system.

#### Toll System

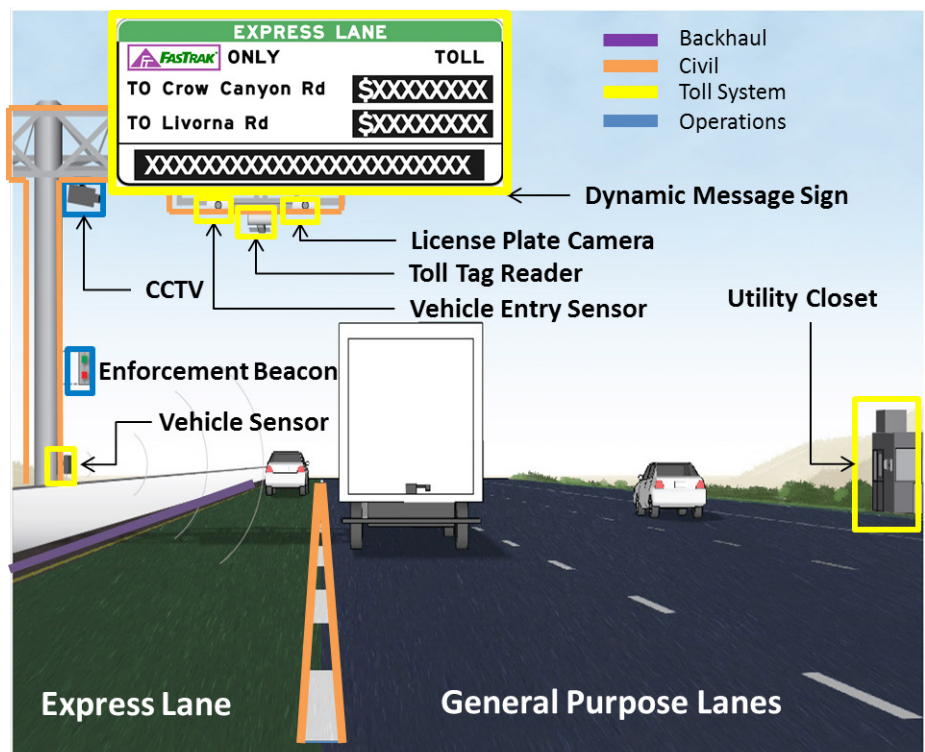
The toll system consists of two components, the in-lane system and the back-end “host” system. The lane system consists of all the equipment on the highway needed to operate the toll system including toll tag readers, cameras and vehicle detection. The host system serves as the brain of the toll system, which collects and processes all the data from the highway and sends it to the regional customer service center for billing.

#### Backhaul Communications Network

The backhaul network is the communication line along which data collected in the lanes is sent to the toll host system, operations center and regional customer service center. The backhaul contractor will install new conduit and communications fiber as well as utilize existing Caltrans, BART and other infrastructure to build the network. The backhaul network is being designed with the expectation that it will become part of a broader regional communications network.

#### Operations

The operations element consists of everything that is needed to successfully operate the express lanes including: an operations center, the regional customer service center, enforcement, public outreach, performance monitoring and ongoing maintenance. An express lanes Regional Operations Center has been established in the Bay Area Metrocenter building in San Francisco where operators actively monitor the condition of the lanes and coordinate with Caltrans and the California Highway Patrol to ensure that the lanes operate efficiently.



For illustrative purposes only

## APPENDIX B

### Completed Capital Project Summaries

#### I-680 Contra Costa Southern Segment (CC-680 South)

##### Walnut Creek to San Ramon

##### Livorna Road/Rudgear Road to Alcosta Boulevard

##### Total Program Estimate

\$55.6 million

##### Open Date

Fall 2017

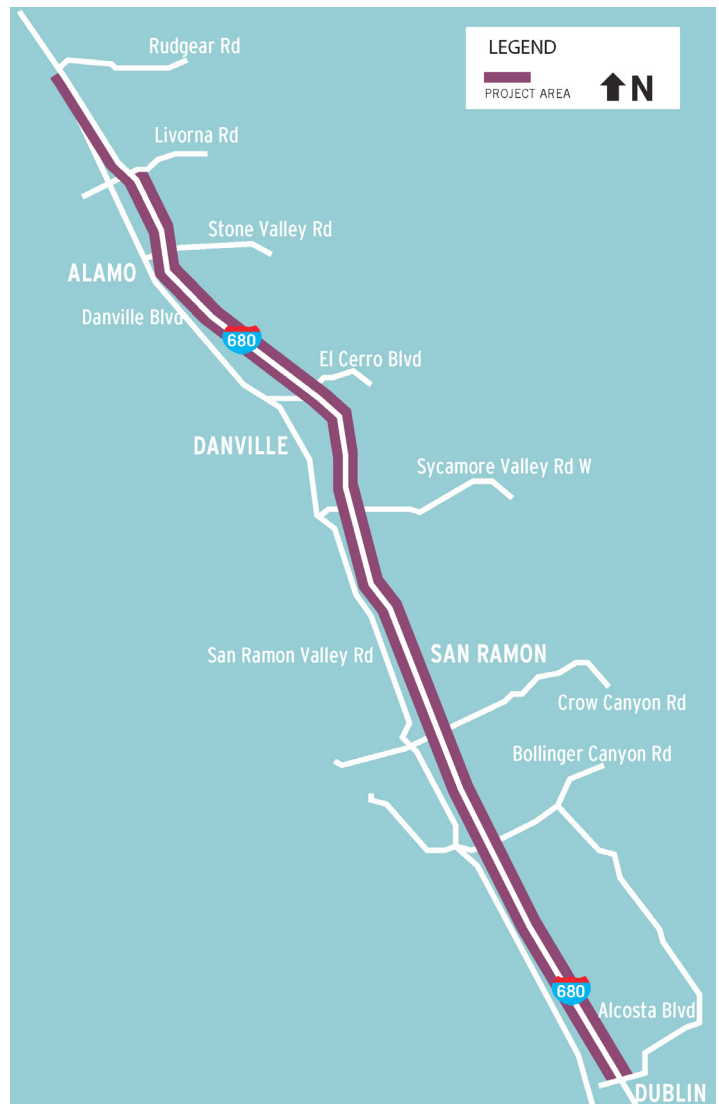
##### Project Description

The project converts existing HOV lanes to express lanes on I-680 from Rudgear Road to Alcosta Boulevard in the southbound direction and from Alcosta Boulevard to Livorna Road in the northbound direction. It will result in 23 express lane miles through San Ramon, Danville, Alamo and southern Walnut Creek. No widening or additional lanes will be added to the freeway.

This conversion project includes striping lanes and installing sign gantries, signs, FasTrak<sup>®</sup> toll tag readers, and traffic monitoring video cameras. In addition, the project installs equipment and observation areas to help the California Highway Patrol enforce proper use of the lanes.

##### Project Highlights and Progress

- Public open house was held in March 2014.
- Preliminary engineering report and environmental document were completed in August 2014.
- Final design for both the backhaul communication network and the toll system were completed in December 2015.
- Final roadway design was completed in April 2015. Civil construction was completed in May 2017.
- Backhaul contractor completed installation of 26 miles of fiber optic cable in June 2017.
- Corridor Testing was completed in August 2017.
- Toll system equipment and software was finalized and tested in September 2017.
- Backhaul operations and maintenance started in October 2017.
- The toll system went live to the public on October 9, 2017.



## Current Project Activities

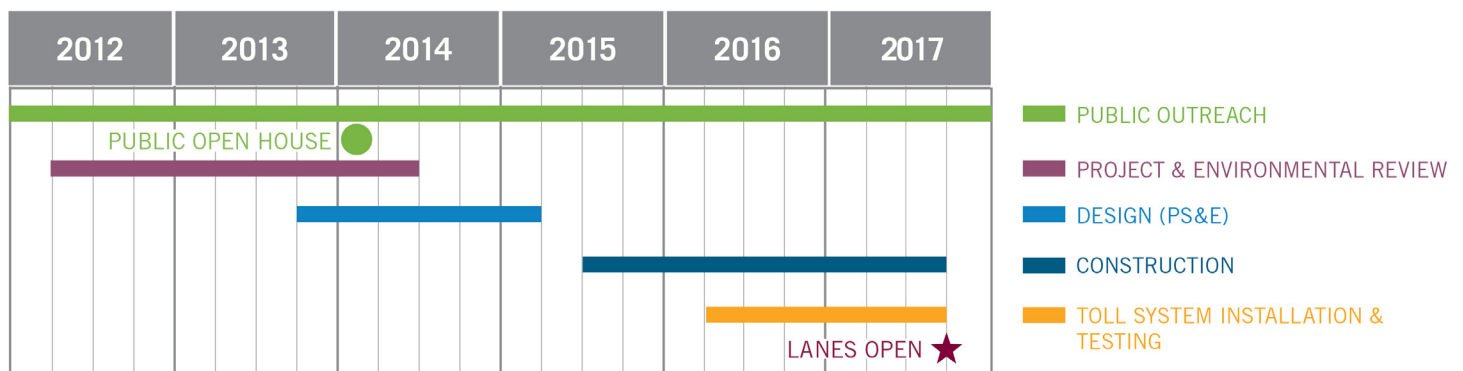
- The integrator is fine tuning field equipment and addressing punch list items in preparation for Operations Testing in summer of 2018. This test verifies the toll system meets all specifications and leads to the maintenance phase of operations.
- The Backhaul contractor completed project 'as-built' documentation and is performing ongoing operations of the communications network.
- Beginning in this Quarterly Report, since civil construction is complete and the express lanes are open, this capital project will be archived in Appendix B and no further updates will be made to the project summary.

I-680 Contra Costa Express Lanes regulatory sign.

Photos courtesy of Noah Berger.



## Project Schedule by Phase



## Project Cost

Program Estimate <sup>(1)</sup>	Cost Forecast <sup>(2)</sup>	Regional Measure 2 Funds (allocated)	BAIFA Express Lane Funds <sup>(3)</sup>			Physical % Complete <sup>(4)</sup>
			Dec. 2015 Amendment	June 2017 Amendment	Expended through 3/31/18	
55.6	55.6		55.6	55.6	49.7	98%

Costs shown in millions of escalated dollars.

The program estimate for this project includes planning, design, construction, utilities, backhaul communications and toll system integration.

<sup>(1)</sup> Program estimate represents current estimated cost to complete each project.

<sup>(2)</sup> Cost forecast represents current estimated cost to complete phases that are funded for each project.

<sup>(3)</sup> BAIFA Express Lane Funds represent the funds that have been allocated from the BAIFA budget.

<sup>(4)</sup> Physical percent complete shown is based on the achievement of major milestones whether those milestones were completed using BAIFA funds or other funds.

## APPENDIX C

### I-680 Contra Costa Express Lanes Operations Report



# I-680 Contra Costa Express Lanes Performance 1st Quarter 2020 - January - March



# Rules of the Road

- Hours: 5 a.m. to 8 p.m. Monday - Friday
- FasTrak® required
- Carpools (2+), eligible clean-air vehicles & motorcycles travel toll-free with FasTrak Flex®





# Summary of Performance Highlights

- On March 16, 2020, a shelter-in-place order was issued in the Bay Area due to COVID-19. On March 20, 2020, the Bay Area Express Lanes operators ceased tolling. Q1 2020 trip and revenue data in this report is for express lane operating days through March 19, 2020.
- Drivers made 1.6 million total trips in the express lanes in Q1 2020; down from 2 million in the prior quarter (Q4 2019) and down from 1.9 million a year ago (Q1 2019).
- Daily express lane trips averaged 27,500 down 13% from 31,700 in Q4 2019 and down 9% from 30,200 in Q1 2019.
- Paid trips were 767,000, down 25% from 1,024,000 in Q4 2019, and down 26% from 1,034,000 in Q1 2019. Comparing only January and February 2020 to January and February 2019, paid trips fell 6%. Northbound paid trips were 8% lower and southbound paid trips were 5% lower. This decline in paid trips is likely due to changes in the toll algorithm intended to reduce express lane demand and increase speeds.
- Speed data in Q1 2020 was affected by COVID-19. In mid-March, corridor speeds became atypical as people stayed home. Q1 2020 speed data in this report is for express lane operating days through March 13, 2020.
- Peak hour average express lane speeds were 9 to 12 miles per hour faster than average general purpose lanes for the length of the corridor. At the slowest spots, average peak-hour express lane speeds were as high as 13 miles per hour faster than average general purpose lane speeds.
- While peak hour lane speeds average over 60 mph throughout the corridor, speeds at the most congested locations dropped below 45 mph on 52% of the days in the quarter in both northbound and southbound through March 13, 2020.
- 46% of trips were by vehicles declared as toll-free, compared to 45% in Q4 2019 and 41% in Q1 2019. Toll violators, which are vehicles without FasTrak® accounts, were 5% of Q1 2020 trips, down from 6% in Q4 2019.
- Monthly average tolls paid ranged from \$5.90 to \$7.70 in the northbound p.m. peak hour and \$5.00 to \$6.00 in the southbound a.m. peak. In the a.m. peak hour, average tolls paid were actually higher northbound, ranging from \$5.20 to \$6.80. (Northbound is not the peak direction of a.m. travel.) Between 10 AM and 2 PM, the average toll paid was \$1.15 northbound and \$0.90 southbound.
- Average tolls paid in Q1 2020 increased over Q1 2019. Northbound, they were up \$1.90 in the p.m. peak hour and \$2.30 in the a.m. peak hour. Southbound, they were up \$0.40 in the a.m. peak hour and \$1.40 in the p.m. peak hour. These increases are due to changes in the toll algorithm intended to reduce express lane demand and increase speeds.
- The highest posted toll to travel the corridor northbound or southbound was \$10, the same as Q4 2019. 11% of tolled trips paid that price. A year ago, in Q1 2019, the highest posted toll was \$8.50.
- CHP filled 80% of requested enforcement hours and made about 1,070 enforcement contacts in Q1 2020. Comparing only January and February 2020 to January and February 2019, CHP enforcement contacts fell 28%, HOV occupancy citations fell 32% and enforcement hours fell 18%.



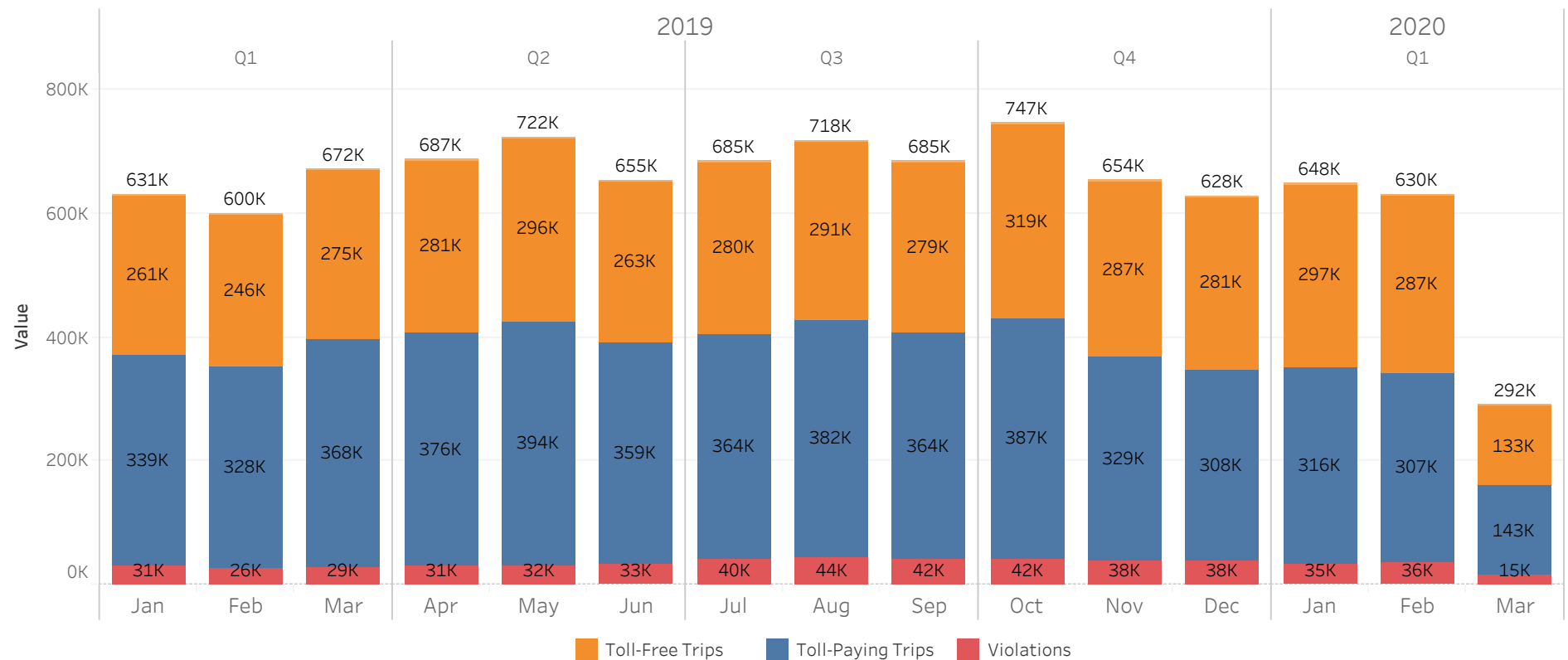
# Express Lane Trips

Over 20.2 million express lane trips have been taken since the I-680 Contra Costa express lanes opened in October 2017. In Q1 2020\*, close to 1.6 million trips were taken, down from 1.9 million in Q1 2019. The decline was due to COVID-19 related reduced travel in March and the suspension of tolling March 20th. No express lane trips were recorded after March 19th.

Comparing only January and February 2020 to January and February 2019, total trips rose 2%, paid trips fell 6%, and toll-free trips rose 16%. Including March, Q1 2020 total trips fell 18%, paid trips fell 26%, and toll-free trips fell 8% from Q1 2019.

Average daily trips (ADT) in January and February 2020 rose 1% from January and February 2019. Including March, Q1 ADT was 27,500; down 9% from Q1 2019. ADT since opening is 32,000.

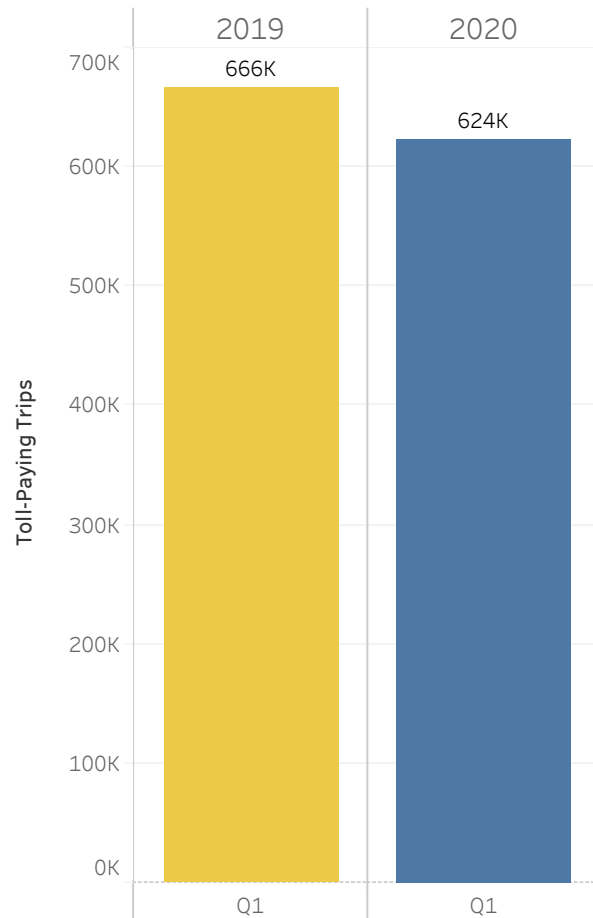
\* Express lane operating days January 2, 2020 through March 19, 2020



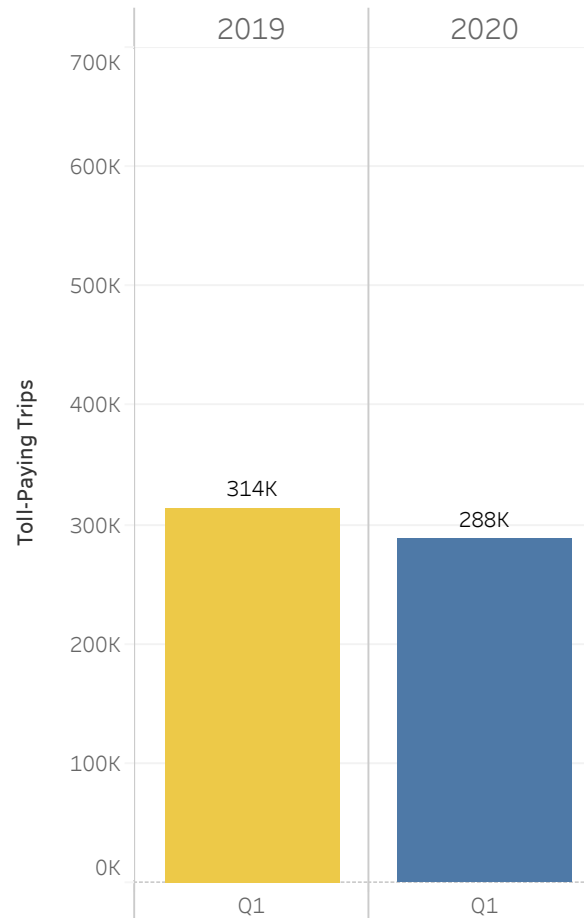
# Express Lane Paid Trips

In October 2019, BAIFA adjusted the toll algorithm to better manage express lane demand in an effort to improve express lane speeds at the slow spots in the corridor. Consistent with the change, January and February 2020 paid trips fell 6% from January and February 2019. Northbound, they fell 8%, and southbound, they fell 5%. Data is for January and February only so that comparisons are not skewed by 2020 COVID-19 trip declines.

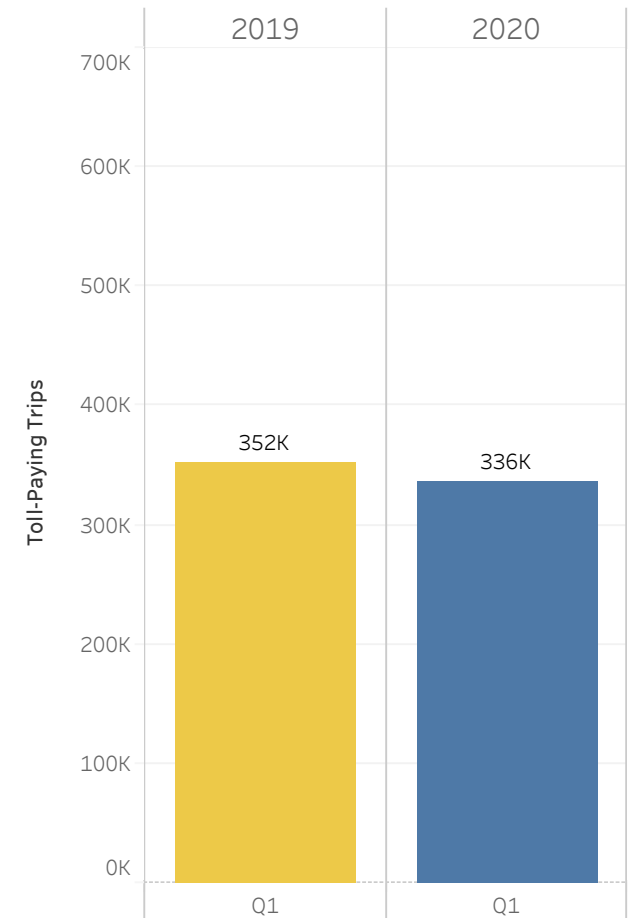
Paid Trips (Jan, Feb)



Paid Trips Northbound (Jan, Feb)

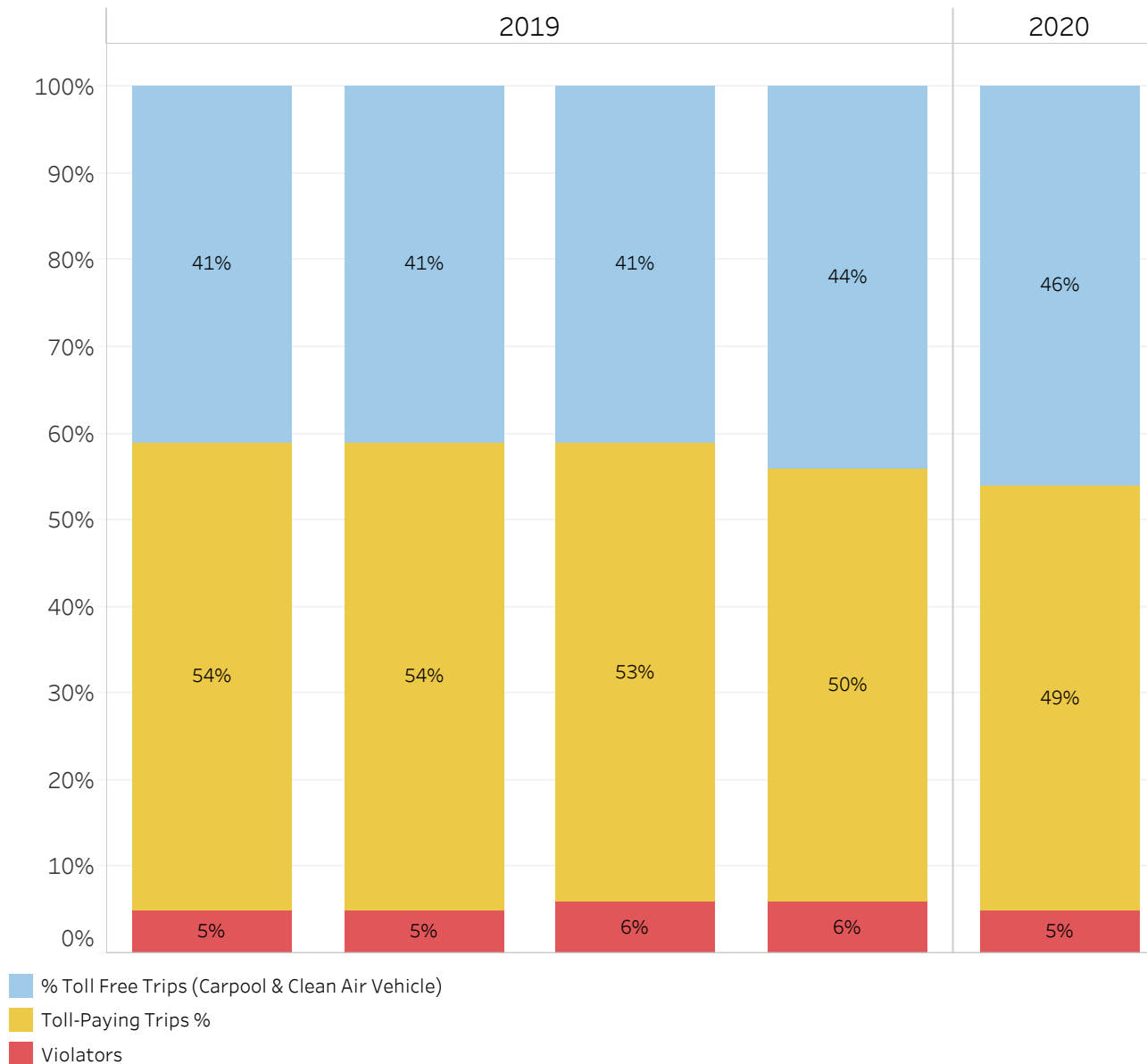


Paid Trip Southbound (Jan, Feb)



2019  
2020

# Express Lane Trip Types



- The share of toll-free trips taken in carpools, clean air vehicles, etc. was 46% in Q1 2020\*, the greatest share since tolling began in October 2017.

- The share of toll-paying trips fell slightly to 49% in December 2019 and remained there in Q1 2020. This is the lowest it has been since tolling began in October 2017.

- The share of vehicles without a FasTrak® toll tag or account (toll violators) returned to 5% in Q1 2020, after having increased to 6% in Q3 and Q4 2019.

\* Express lane operating days January 2, 2020 through March 19, 2020

Percentages of SOVs and HOVs are based on toll tag settings read by the toll system.

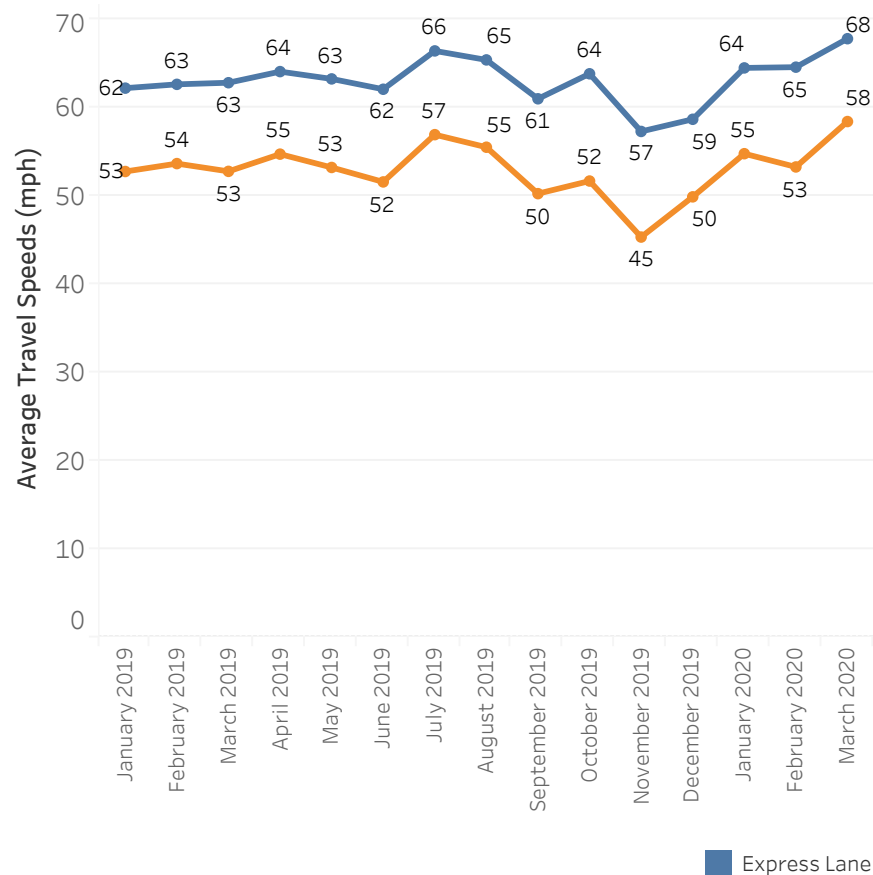
# Peak Hour Average Corridor Speeds

COVID-19 shelter-in-place began March 16, 2020. This quarterly report presents Q1 speed data through Friday, March 13, 2020.

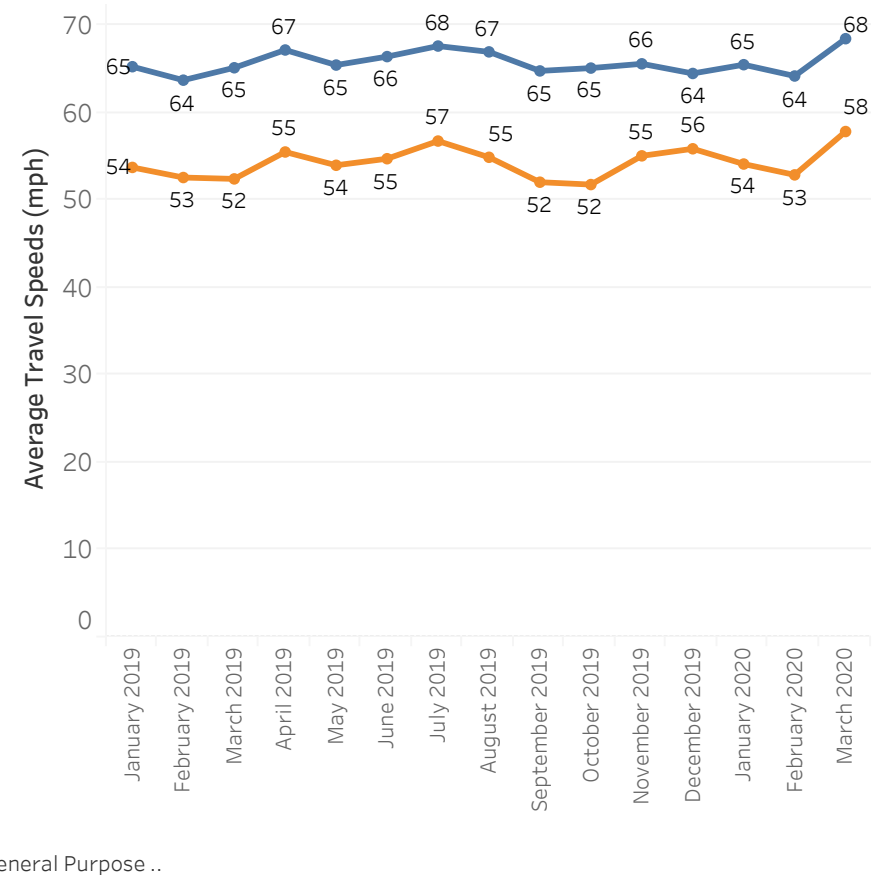
Southbound corridor traffic is slowest from 8 a.m. to 9 a.m. and northbound corridor traffic is slowest from 5 p.m. to 6 p.m. In these peak hours, Q1 2020 corridor-length average express lane speeds ranged from 9 to 12 miles per hour (mph) faster than speeds in the general purpose lanes.

Since opening in October 2017, the express lane corridor-length average northbound peak hour speed has been 6 to 12 mph faster than the general purpose lanes. Southbound, it has been 8 to 14 mph faster.

**Northbound P.M. Peak Hour (5 - 6pm) - Corridor**

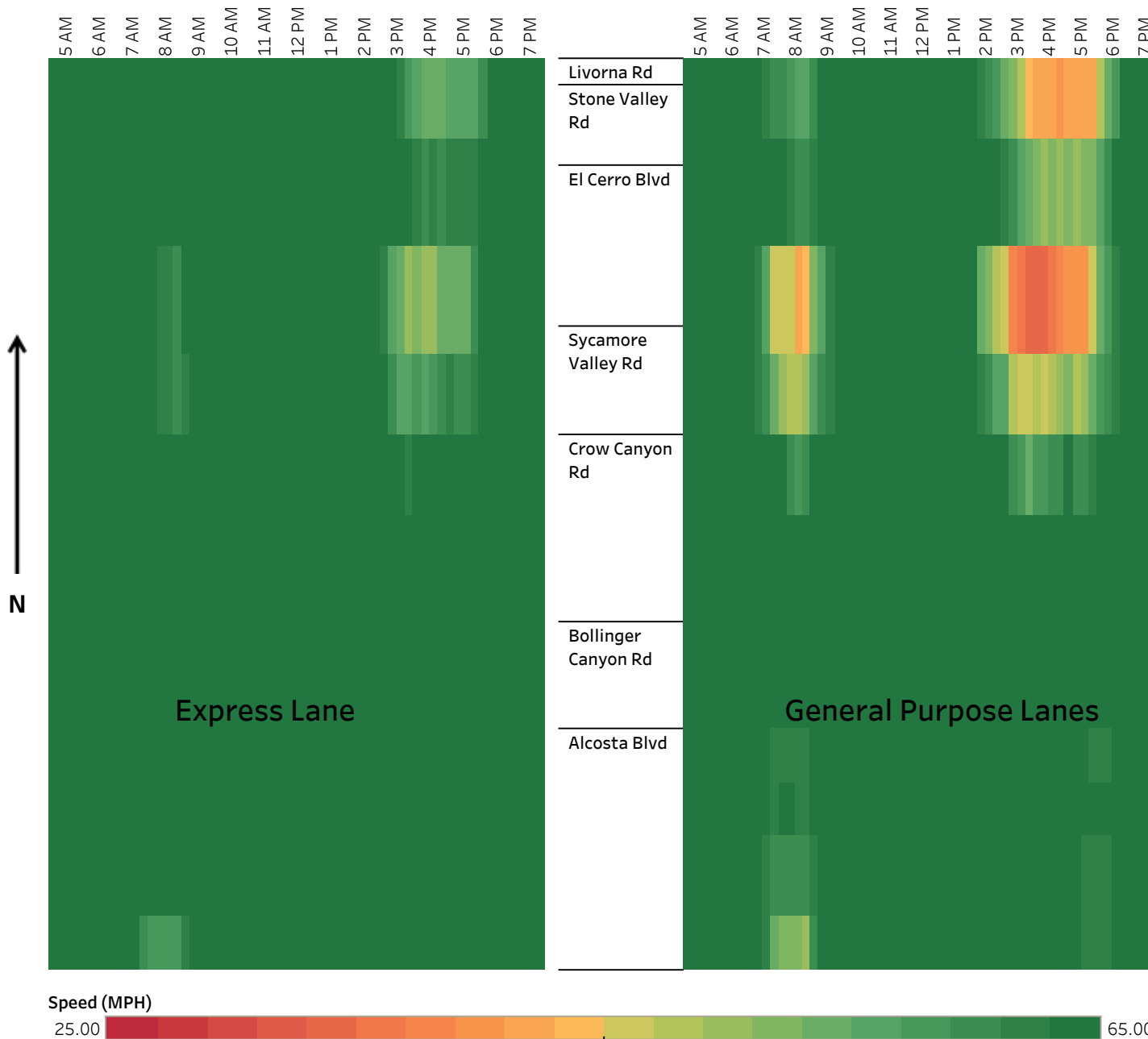


**Southbound A.M. Peak Hour (8 - 9am) - Corridor**



Speeds are averaged over the distance of the express lane. Peak hours are defined as the hours with lowest average corridor speeds across all lanes.

# Northbound Speeds by Location & Time



Congestion originating north of the express lane regularly caused slowdowns in the general purpose lanes in the p.m. peak.

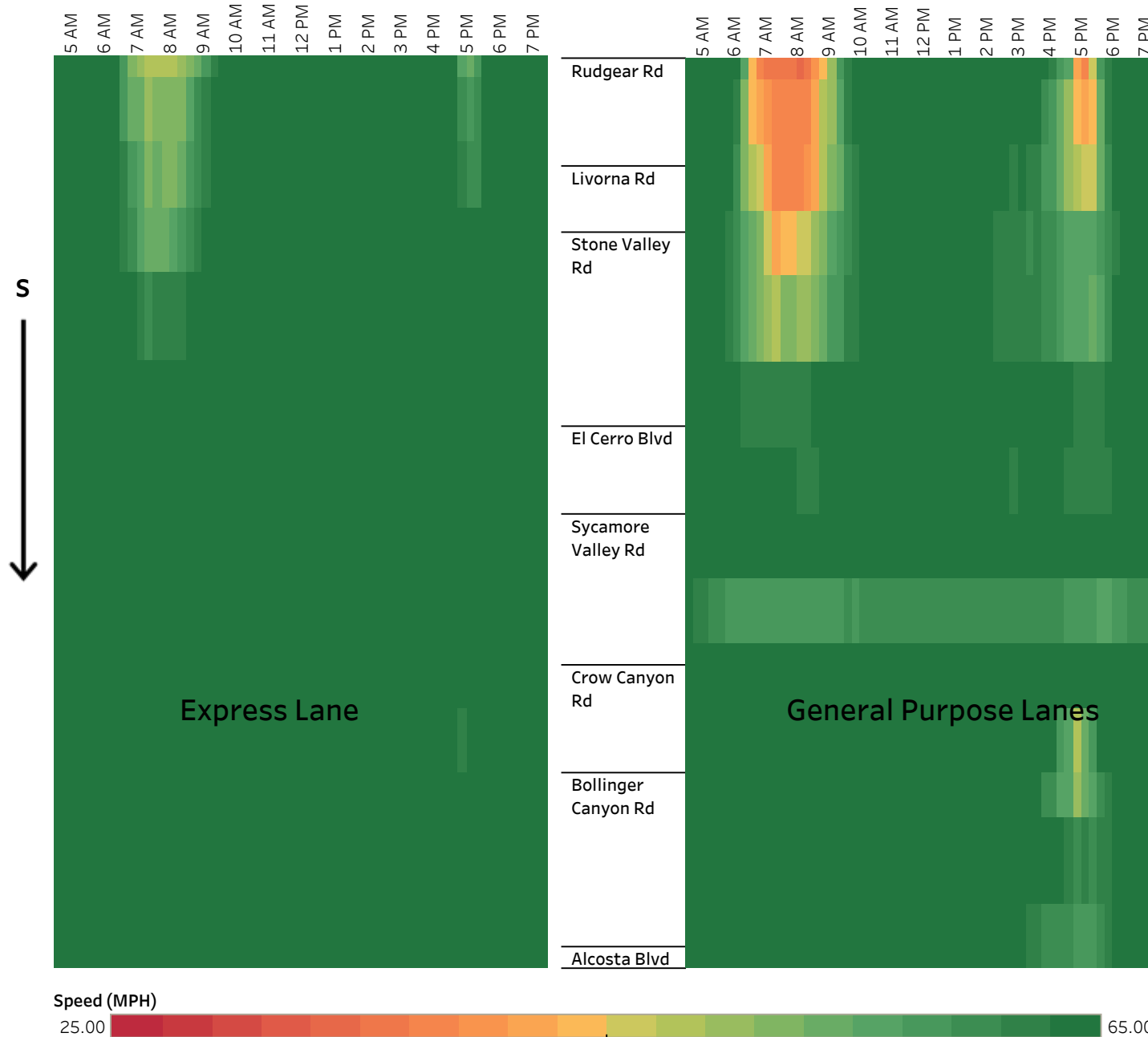
In Q1 2020\* peak hour congestion, northbound express lane users traveled an average of 10 mph faster through the corridor than general purpose lane users. At the slowest northbound bottleneck near El Cerro Blvd. they traveled an average of 9 mph faster.

Traffic flowed well in all lanes between 9 a.m. and 2 p.m.

\* Operating days January 2, 2020 through March 13, 2020



# Southbound Speeds by Location & Time



Slowdowns occurred in the general purpose lanes between Rudgear Rd. and El Cerro Blvd. in the a.m. and p.m. peak periods.

In Q1 2020\* peak hour congestion, southbound express lane users traveled an average of 11 mph faster through the corridor than general purpose lane users. At the slowest southbound bottleneck between Rudgear Rd. and Livorna Rd. they traveled an average of 13 mph faster.

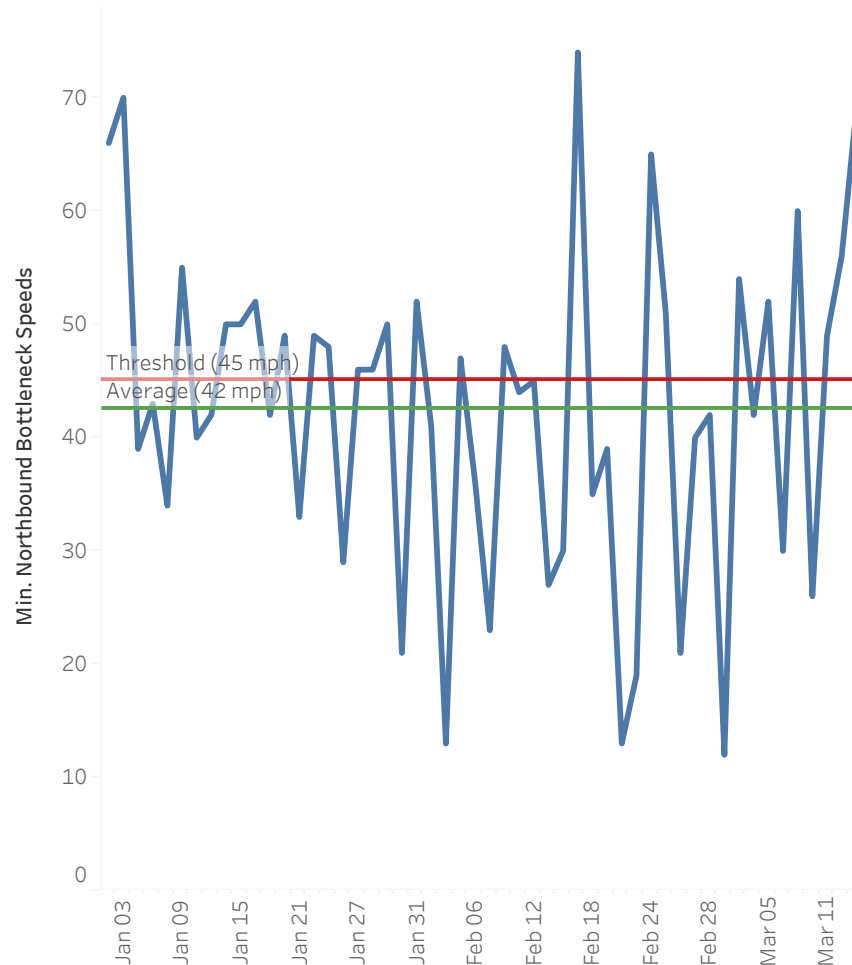
Traffic flowed well in all lanes between 10 a.m. and 4 p.m.

\* Operating days January 2, 2020 through March 13, 2020

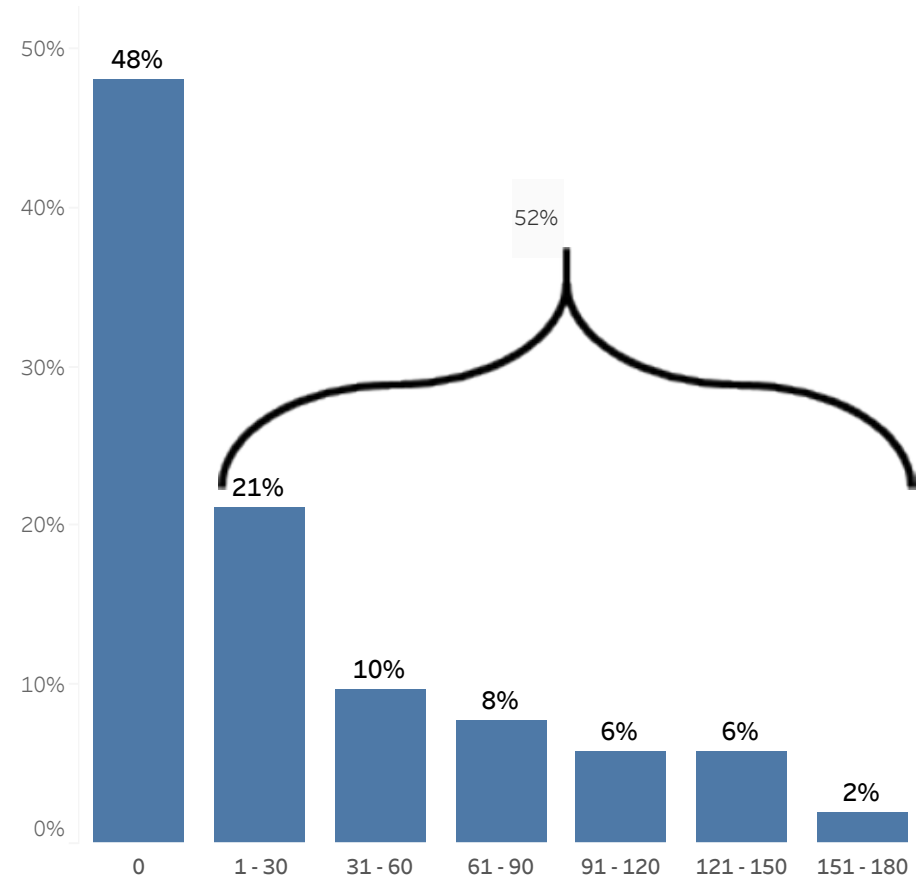
# Lowest NB Exp Lane Speed - near El Cerro

Northbound express lane traffic speeds are slowest between Sycamore Valley Rd. and El Cerro Blvd. The lowest daily speed at this location averaged 42 mph and fell below 45 mph on 52% of days in the quarter\*. On 31% of the days, the speed decline lasted 1 to 60 minutes and on 14% of the days the speed decline lasted 61 to 120 minutes. 8% of the days experienced the slow speeds for more than 2 hours. While still frequently falling below 45 mph, the slowdowns were fewer and for a shorter duration than Q4 2019.

\* Q1 2020 speed data is for operational days January 2, 2020 through March 13, 2020.



% of days with speeds under 45 mph by duration (minutes per day) between Sycamore Valley Rd. and El Cerro Blvd. NB



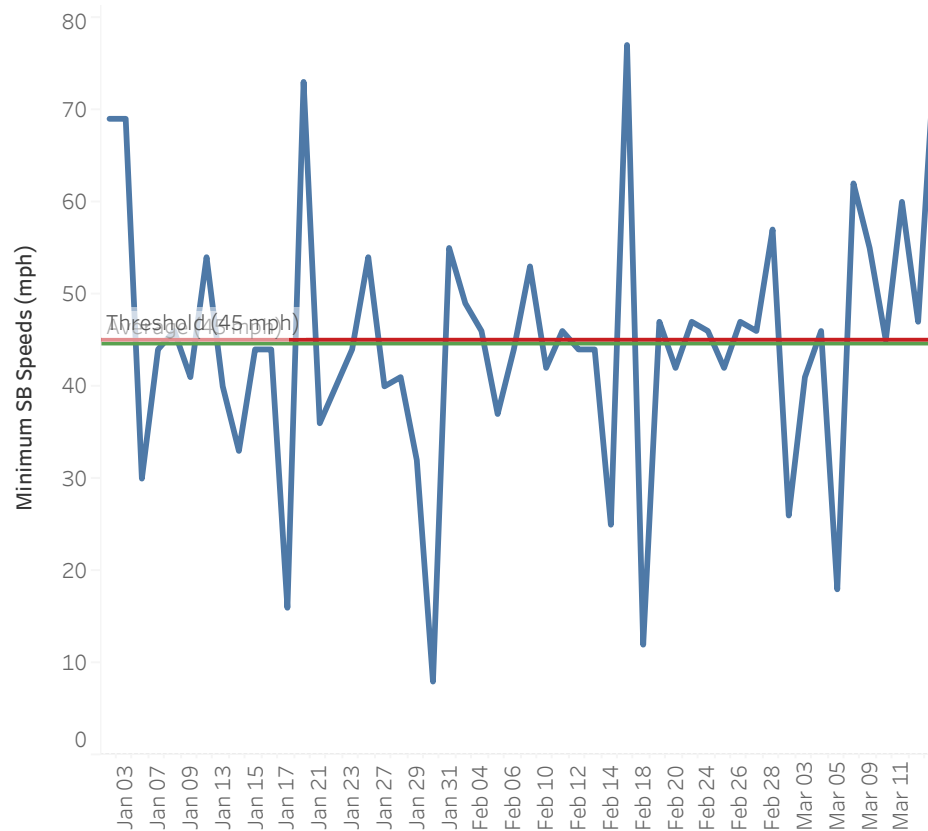
Minutes Per Day

# Lowest SB Exp Lane Speed - near Livorna

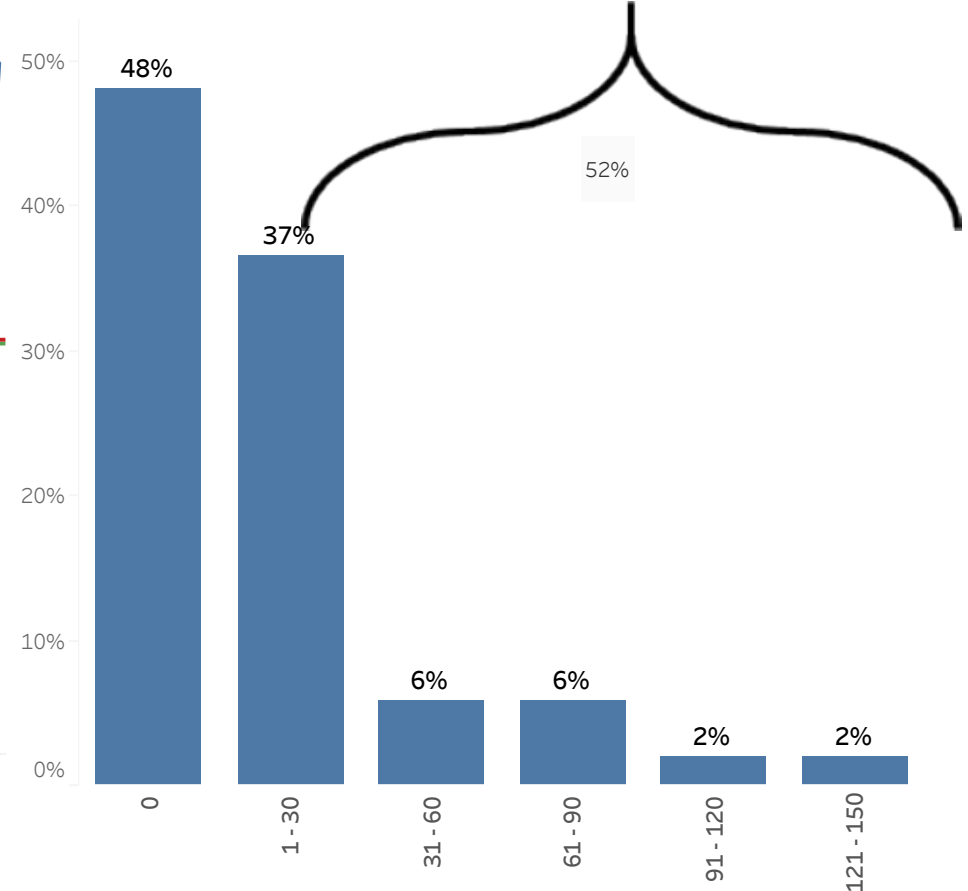
Southbound express lane traffic speeds are slowest between Livorna Rd. and Rudgear Rd. The lowest daily speeds at this location averaged 45 mph and fell below 45 mph on 52% of days in the quarter\*. On 43% of the days, the speed decline lasted 1 to 60 minutes and on 8% of the days the speed decline lasted 61 to 120 minutes. Only 2% of the days experienced the slow speeds for more than 2 hours. While still frequently falling below 45 mph, the slowdowns were fewer and for a shorter duration than in Q4 2019.

\* Q1 2020 speed data is for operational days January 2, 2020 through March 13, 2020.

LowestDailySpSB



% of days with speeds under 45 mph by duration (minutes per day) between Rudgear Rd. and Livorna Rd. SB

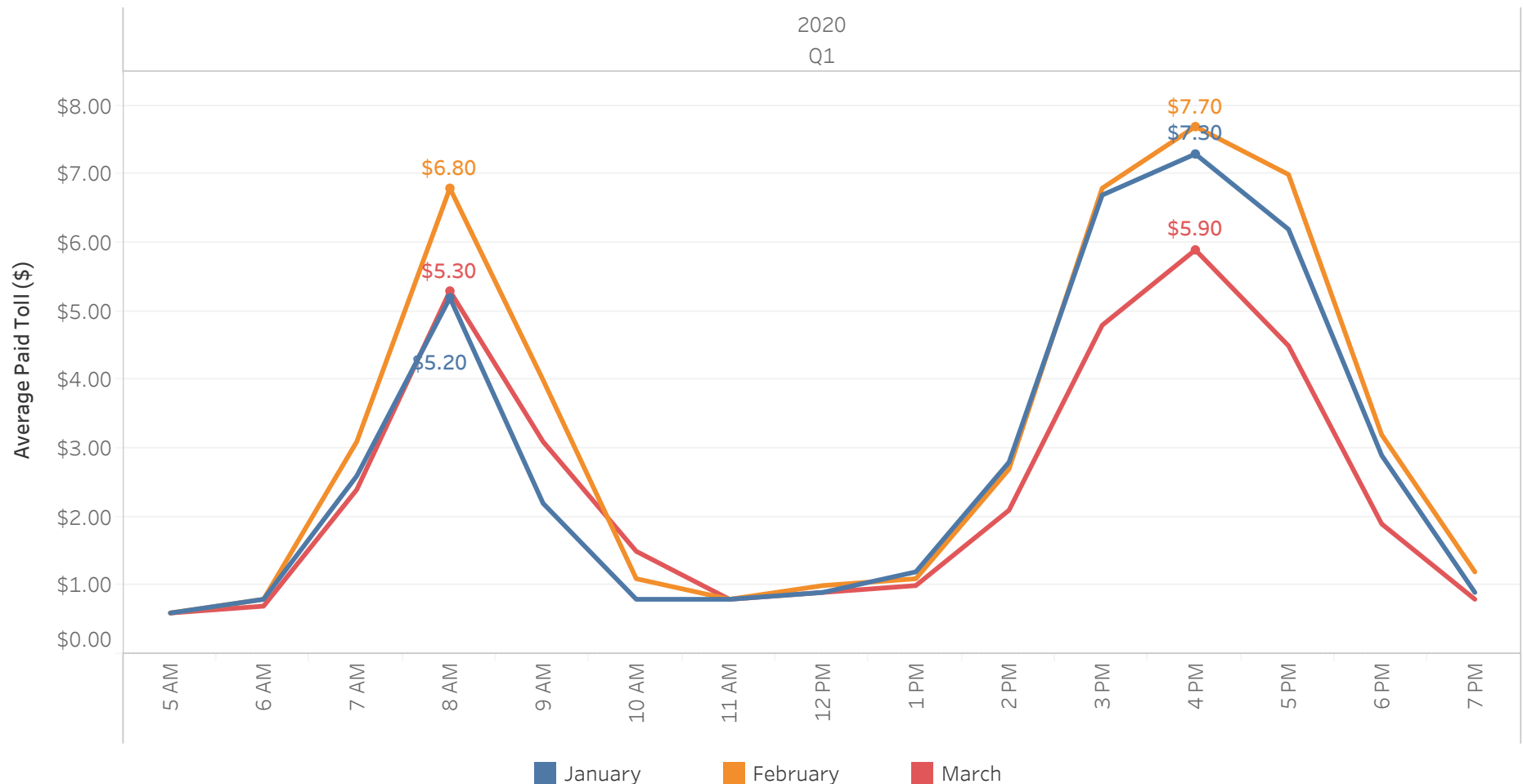


Minutes Per Day

# Northbound Tolls

The tolls drivers pay depend on traffic conditions and the distances traveled. In Q1 2020, the average tolls paid northbound peaked at \$7.70 in the 4 to 5 p.m. hour. MTC stopped tolling on March 20th due to shelter-in-place, though traffic had decreased for several preceding days. In March, PM-peak average tolls (through 3/19) were lower (\$5.90) than in prior months.

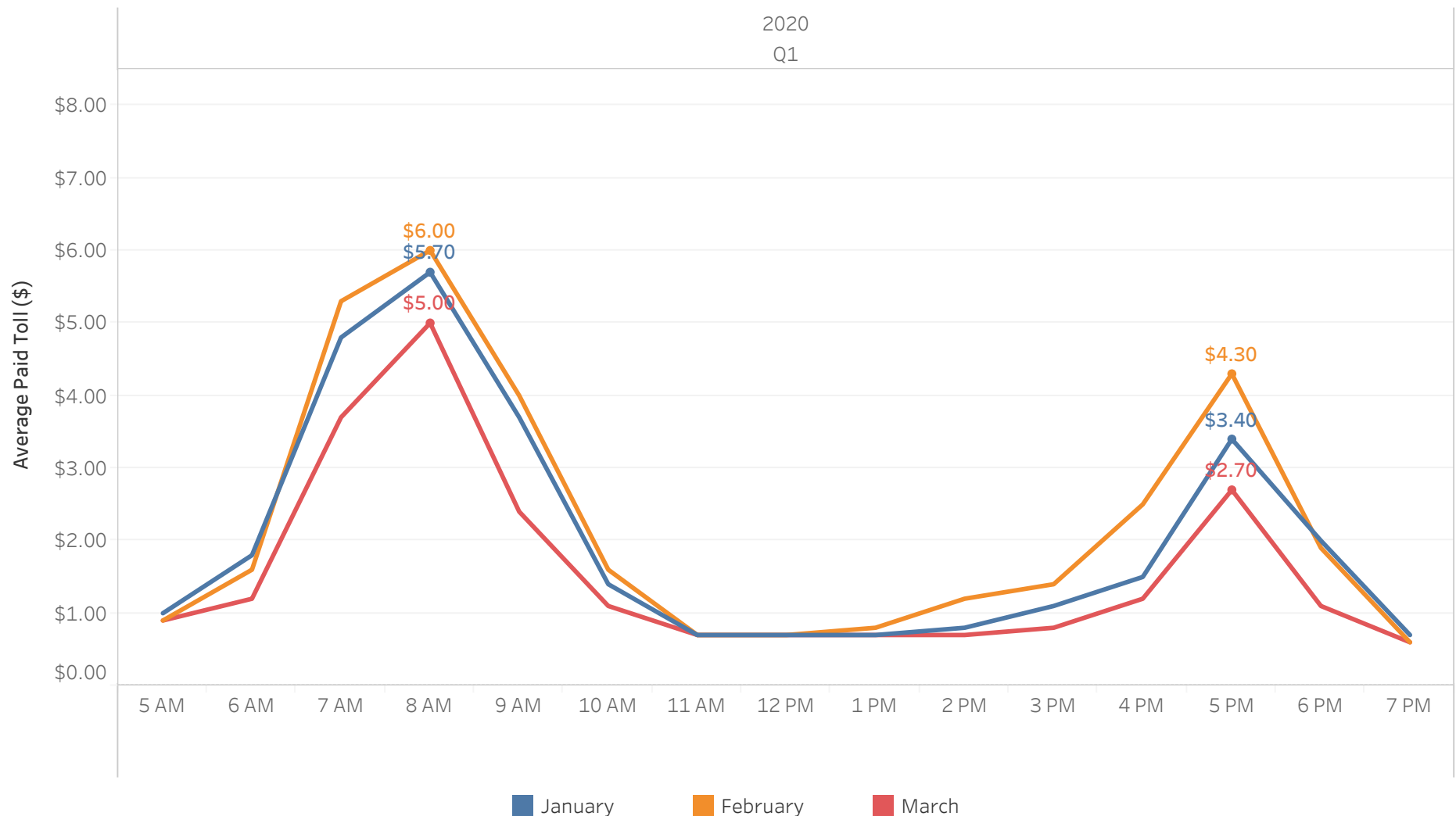
Mid-day, between 10 a.m. and 2 p.m., when traffic is lighter, northbound drivers paid an average of \$1.15. The highest posted toll to travel the entire corridor was \$10.



# Southbound Tolls

The tolls drivers pay depend on traffic conditions and the distances traveled. In Q1 2020, the average tolls paid southbound peaked at \$6.00 in the 8 to 9 a.m. hour. MTC stopped tolling on March 20th due to shelter-in-place, though traffic had decreased for several preceding days. In March, AM-peak average tolls (through 3/19) were lower (\$5.00) than in prior months.

Mid-day, between 10 a.m. and 2 p.m., when traffic is lighter, southbound drivers paid an average of \$0.90. The highest posted toll to travel the entire corridor was \$10.

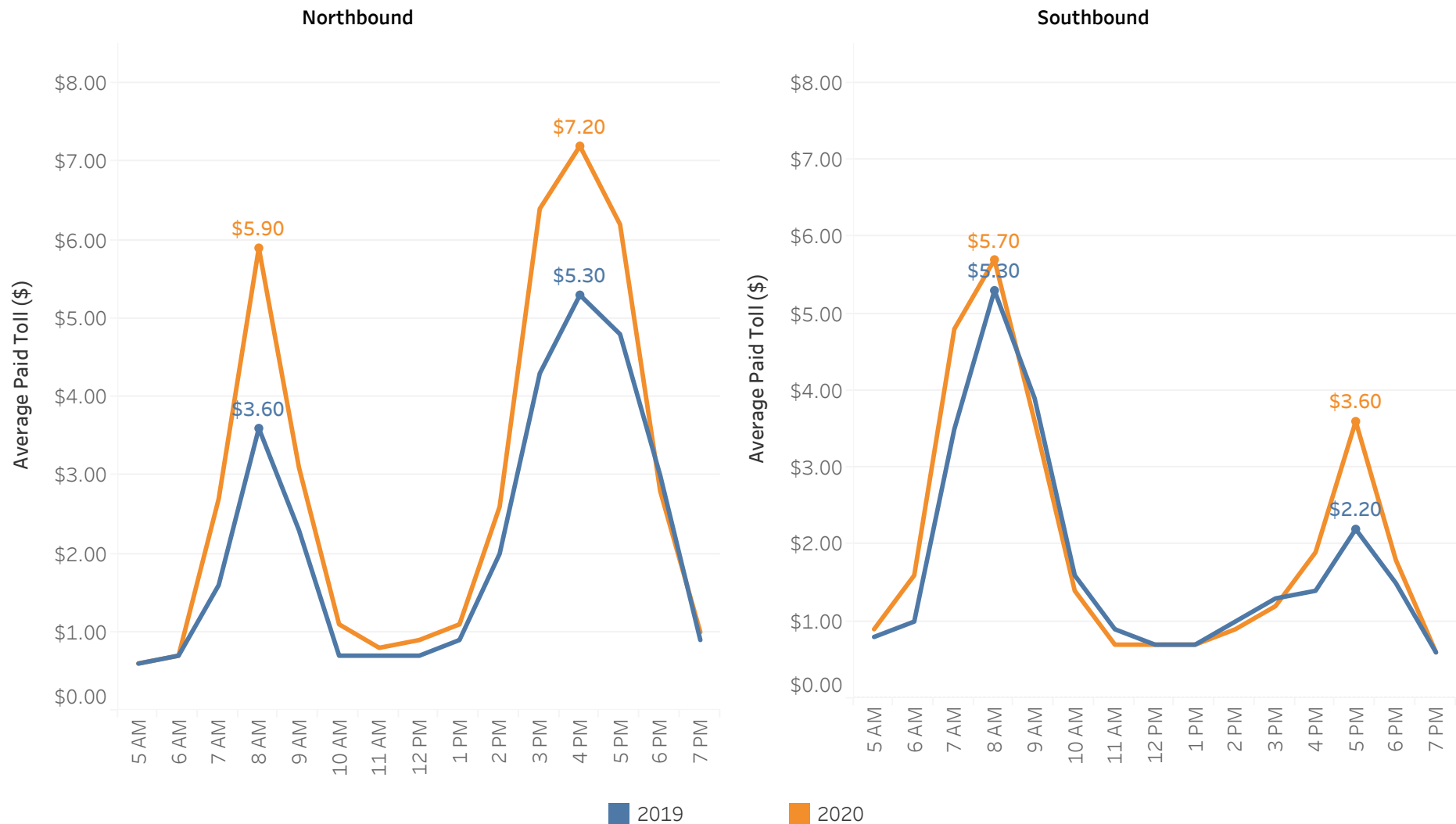




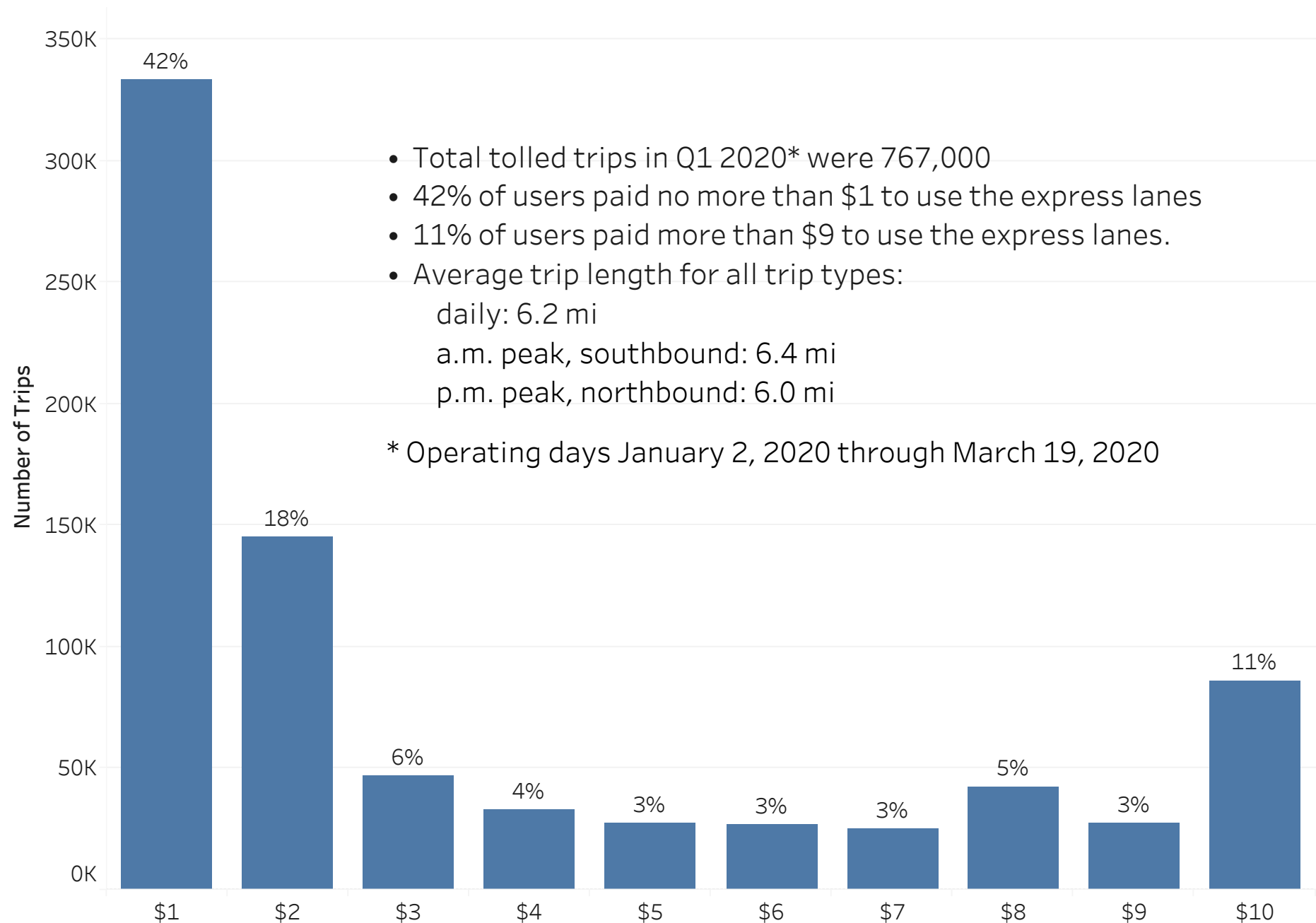
# Average Tolls Paid

Northbound, quarterly\* average tolls paid increased \$2.30 in the a.m. peak and \$1.90 in the p.m. peak. Southbound, quarterly average tolls paid increased just \$0.40 in the a.m. peak and \$1.40 in the p.m. peak. The increases were due to changes in the toll algorithm intended to address slowdowns in the express lanes.

\* Operating days January 2, 2020 through March 19, 2020



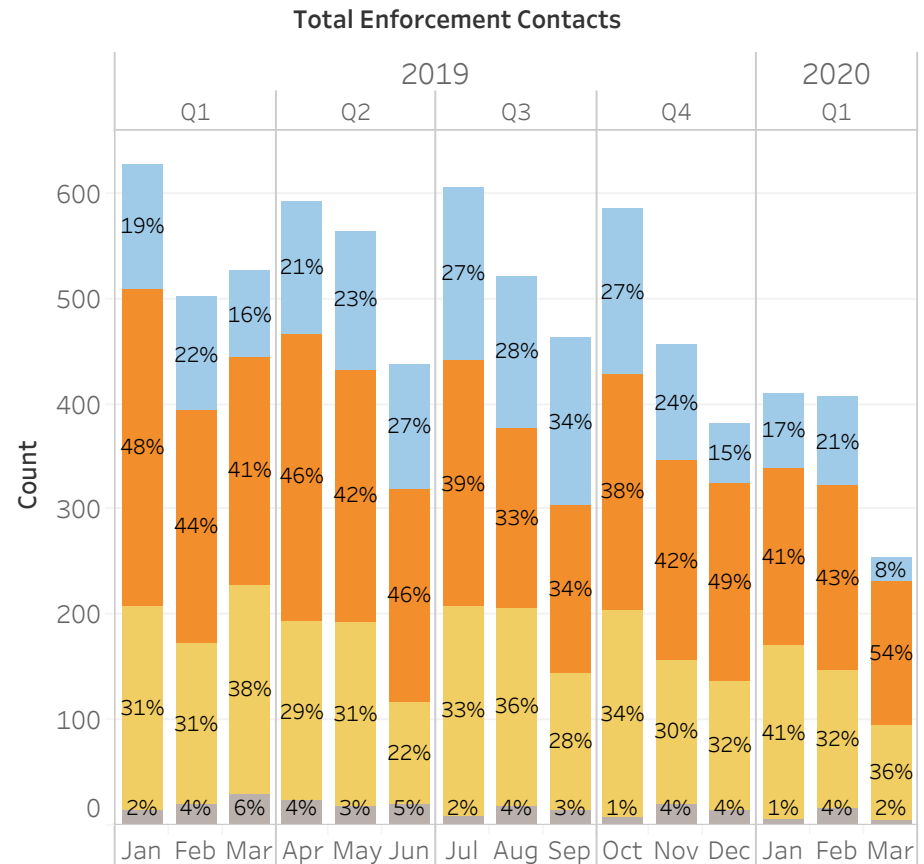
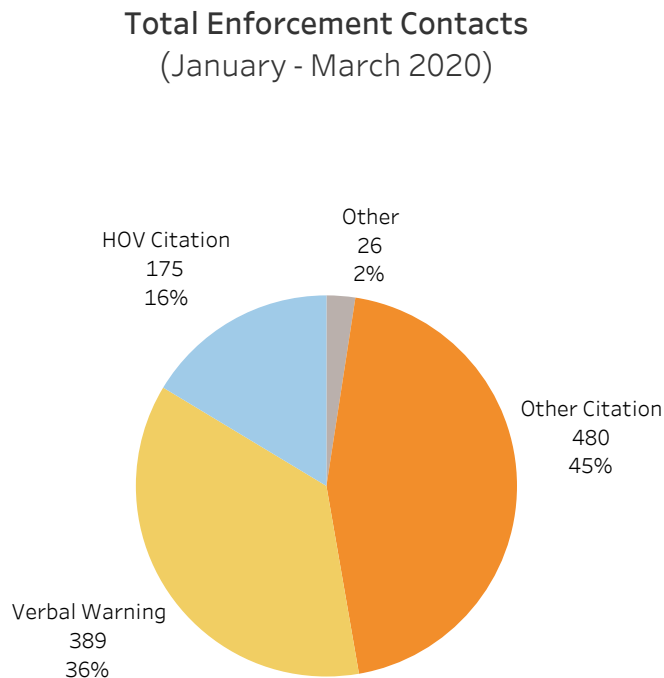
# Toll Distribution



# CHP Enforcement

CHP made about 1,070 enforcement contacts in Q1 2020, 16% of which resulted in citations for HOV occupancy violations. CHP enforcement contacts fell 36% from Q1 2019 and HOV occupancy citations fell 44%. CHP enforcement hours were down 28% from Q4 2018. CHP filled 80% of the enforcement hours requested by BAIFA.

The declines are partly due to COVID-19 related traffic reductions in March. At MTC's request, CHP ceased performing enforcement on March 18, 2020. Comparing only January and February 2020 to January and February 2019, CHP enforcement contacts fell 28%, HOV occupancy citations fell 32% and enforcement hours fell 18%.



■ HOV Citation
 ■ Other Citation
 ■ Verbal Warning
 ■ Other

For more information, go to: [mtc.ca.gov/express-lanes](http://mtc.ca.gov/express-lanes)

