

Bay Area Infrastructure Financing Authority (BAIFA)

March 25, 2020

Agenda Item 2c

MTC Express Lanes Quarterly Report: Fourth Quarter (October - December 2019)

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.

I-680 Contra Costa Southern Segment Operations – Fourth quarter 2019 performance is highlighted below (see *Appendix C* of the attached report for more detail).

- Drivers made 2.0 million trips, similar to the prior quarter and the same quarter a year ago. Daily express lane trips averaged 31,700.
- Paid trips were 1.0 million, an 8% decline from the prior quarter and a 4% decline from the same quarter a year ago.
- 45% of trips were by vehicles declared as toll-free, after holding steady at 41% of trips since January 2019. Toll violators, which are vehicles without FasTrak® accounts, were 6% of all trips.
- Peak period express lane speeds were 8 to 13 miles per hour (mph) faster than the general purpose lanes. While peak period speeds average 60 mph throughout the corridor, several congested location speeds dropped below 45 mph frequently. Staff fine-tuned the toll algorithm to reduce traffic and improve speeds at those locations, and will assess the impacts over time.
- Monthly average tolls paid ranged from \$6.80 to \$7.90 in the northbound p.m. peak hour, and from \$5.70 to \$5.90 in the southbound a.m. peak hour. When traffic flowed well in the non-peak hours, the average toll paid was \$1.80 northbound and \$1.20 southbound. Average tolls paid were mostly similar to the same quarter a year ago, though slightly higher as a result of the efforts to improve speeds. The highest posted toll was \$10.00 in each direction. 12% of tolled drivers paid between \$9.01 and \$10.00 tolls.
- CHP performed 89% of requested enforcement hours and made 1,400 enforcement contacts, down from 90% and 1,800 respectively in the same quarter a year ago. 23% of enforcement contacts resulted in HOV citations, compared to 31% a year ago.

Express Lanes Capital Delivery – 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 should begin in May 2020. The toll system integrator is continuing toll system, electrical and fiber installation, and toll system testing has begun. The planned opening date is late summer 2020. In anticipation of opening, BAIFA approved tolling rules through a public process in January 2020. Staff is working with partner agencies on a public outreach campaign for the transition period and lane opening.
- **I-680 Contra Costa Northern Segment Southbound:** Civil construction is moving quickly 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 should finish its review of the toll system design and issue an encroachment permit for the toll system integrator to begin toll system installation in March 2020.
- **I-80 Solano:** The project remains shelf-ready in the event construction funds become available.

Issues: None

Recommendation: This item is presented for information only.

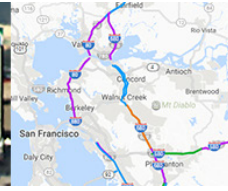
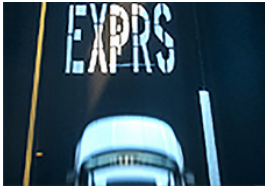
Attachments: MTC Express Lanes Quarterly Report: Fourth Quarter, October - December 2020



Therese W. McMillan



BAY AREA EXPRESS LANES



MTC Express Lanes Quarterly Report 4th Quarter, October - December, 2019

Submitted: March 2020

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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 fourth quarter of 2019, October 1 to December 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	4 th Quarter 2019 Highlights	Current Activities
I-880 Alameda (ALA-880) San Leandro to Milpitas <i>Hegenberger Road/Lewelling Boulevard to Dixon Landing Road</i>	<ul style="list-style-type: none"> The backhaul contractor connected the backhaul corridor hubs to the toll system host and operations datacenters in October 2019. The toll system integrator approved the backhaul fiber in November 2019. The toll system integrator continued installation of toll system equipment and electrical. 	<ul style="list-style-type: none"> Civil construction is near complete as of December 2019. Final pavement and striping is planned to start in May 2020 and last about 12 weeks. During this time, the lanes will be signed and continue to function as HOV lanes. The toll system integrator will continue installation of roadside cabinets, toll system equipment in the median, variable toll message signs, CCTVs and electrical and fiber connections. Staff is beginning 'go live' planning in order to be ready to open the I-880 Express Lanes. Staff is preparing materials and messaging channels for a customer education campaign to begin about three months before the lanes open. Staff is finalizing an engagement strategy to encourage and reward high occupancy vehicles (HOVs) in the I-880 corridor. Monthly construction notices and ramp closure/detour notices continue to be sent.
I-680 Contra Costa Southern Segment (CC-680 South) Walnut Creek to San Ramon <i>Livorna Road/Rudgear Road to Alcosta Boulevard</i>	<ul style="list-style-type: none"> See Appendix C for second quarter performance data. 	<ul style="list-style-type: none"> Project complete; see Appendix B for archived summary.
I-680 Contra Costa Northern Segment Southbound (CC-680 North SB) Martinez to Walnut Creek <i>Marina Vista Boulevard to Rudgear Road/SR 242</i>	<ul style="list-style-type: none"> The civil contractor continued highway and ramp widening, retaining wall construction and median barrier construction. A replacement planting design was updated and resubmitted to Caltrans in December 2019. 	<ul style="list-style-type: none"> The civil contractor is accelerating paving work to make way for the toll system integrator to complete the toll system installation ahead of schedule. The civil contractor expects to complete ramp and highway widening at various locations on I-680 southbound between Monument Boulevard and Olympic Boulevard as well as begin sound wall construction in Walnut Creek in January 2020. Two of five retaining walls are complete. The civil contractor also plans to complete new concrete median barriers at various locations on I-680 between SR-242 and SR-24.

Project Development & Construction	4 th Quarter 2019 Highlights	Current Activities
I-80 Solano (SOL-80) Fairfield to Vacaville <i>Red Top Road to I-505</i>	<ul style="list-style-type: none"> No highlights to report. 	<ul style="list-style-type: none"> The project is shelf-ready should construction funds become available. MTC and STA staff continue to explore potential funding sources.
Program Management	<ul style="list-style-type: none"> Staff engaged BAIFA, agency stakeholders and the public on a draft amendment to the BAIFA Toll Facility Ordinance for proposed tolling rules on the I-880 Express Lanes and changes to rules on the I-680 Contra Costa Express Lanes. The thirty-day public comment period concluded with a public hearing in December 2019. 	<ul style="list-style-type: none"> Staff continues to develop a strategic plan to help prioritize express lanes funding and delivery in the region. 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. The rules take effect when the I-880 Express Lanes open. Staff is procuring vendors for two pilots to improve occupancy enforcement: a roadside camera-based system, and a smartphone app-based system. Lessons learned may position BAIFA to better deter HOV eligibility cheaters.
Toll System	<ul style="list-style-type: none"> The toll system integrator went live with lane-side equipment software to finalize the 6C enhancements. The system began tolling 6C tags in October 2019. 	<ul style="list-style-type: none"> The toll system integrator began work on a new module for image review and trip building. The module will be implemented and tested before I-880 opens. Staff will begin sharing real-time toll amounts and general message sign information with the 511 system for public dissemination.

II. PROGRAM OVERVIEW

A. Program Description

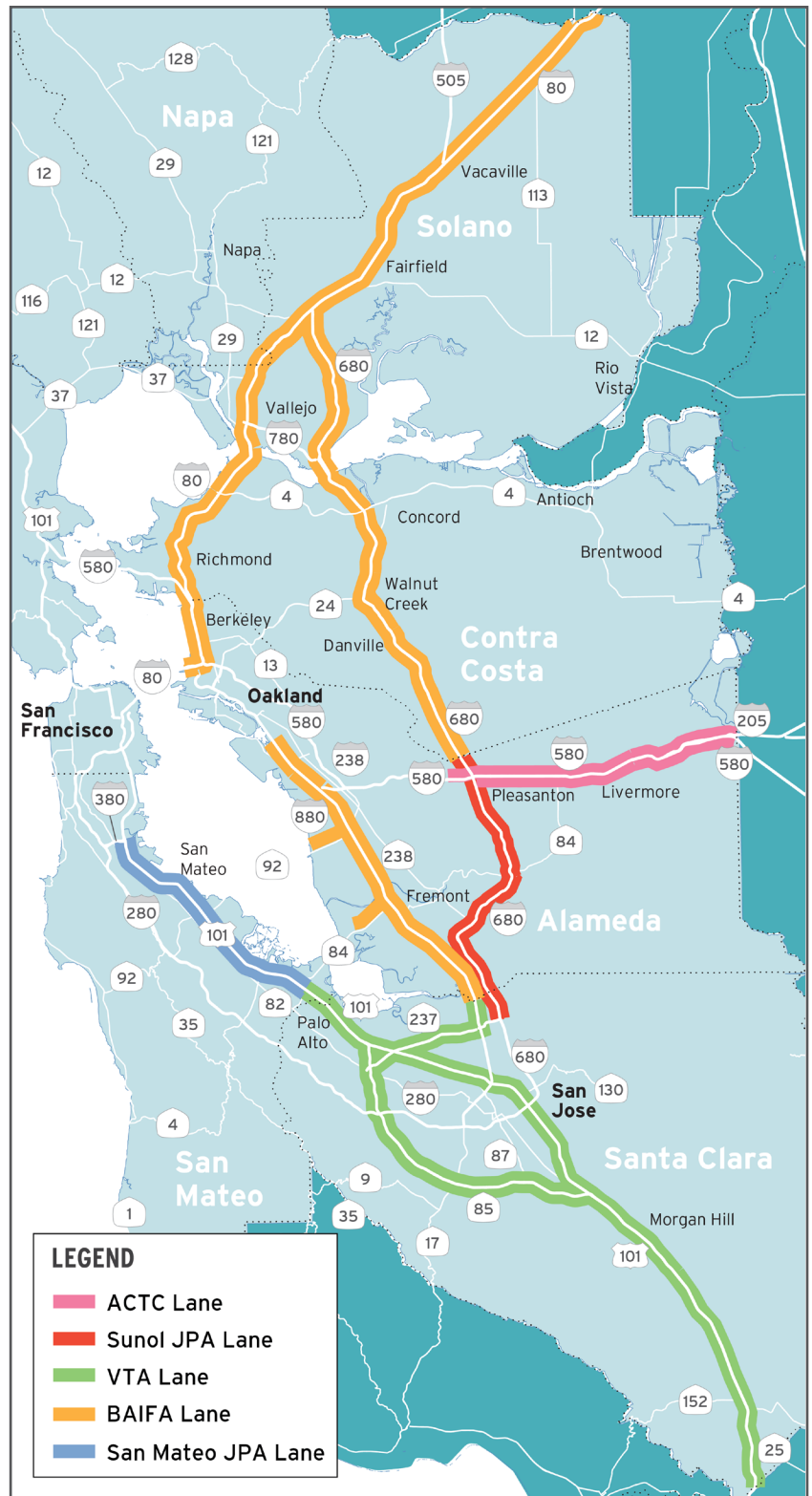
MTC and partner agencies are implementing a regional network of express lanes called Bay Area Express Lanes. Upon completion, Bay Area Express Lanes will comprise 600 miles of express lanes operated by MTC, the Valley Transportation Authority (VTA), the Alameda County Transportation Commission (Alameda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

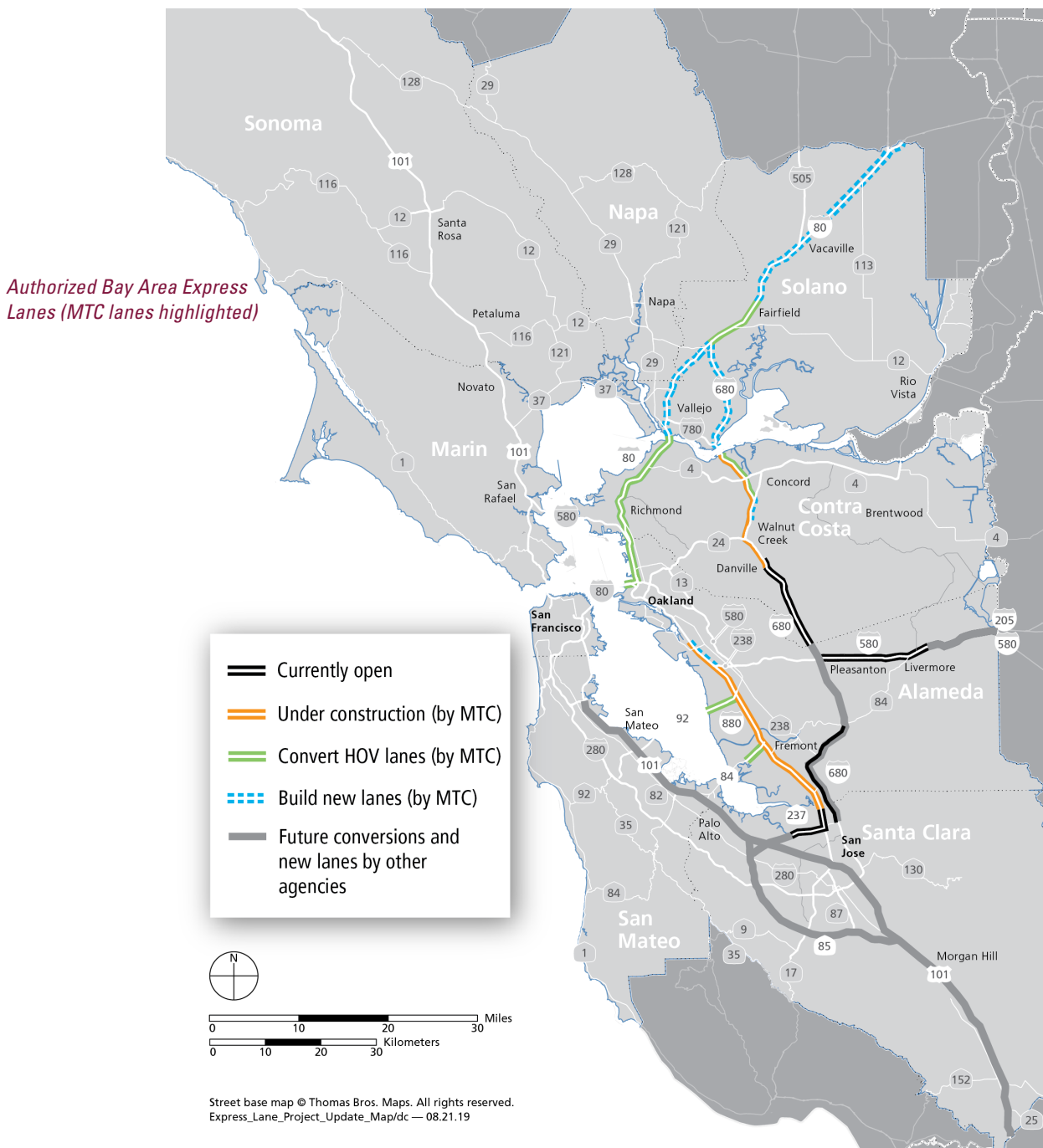


Map of Authorized Bay Area Express Lanes Network

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	●	●	●
					<i>Project completed 2017</i>		
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
I-880 Alameda (ALA-880) San Leandro and Milpitas <i>Hegenberger Rd./Lewelling Blvd. to Dixon Landing Rd.</i>	Spring 2019	Summer 2020		13
I-680 Contra Costa Southern Segment (CC-680 South) Walnut Creek and San Ramon <i>Livorna Rd./Rudgear Rd. to Alcosta Blvd.</i>	Fall 2016	Fall 2017 Actual		A-5
I-680 Contra Costa Northern Segment Southbound (CC-680 North SB) Martinez to Walnut Creek <i>Marina Vista Blvd. to Rudgear Rd.</i>	Fall 2018	Fall 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 plans to report 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 September 2019 and represent no change from the third quarter of 2019. The confidence level assessment reflects potential risks to each project budget; for more information, see Section III.D Risk Management Plan.

Project ⁽¹⁾	Total Cost Estimate ⁽²⁾	Cost Estimate, Funded Phases ⁽³⁾	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds ⁽⁴⁾			Percent Complete ⁽⁵⁾	Confidence Level ⁽⁶⁾
					July 2018 Amendment	Sept. 2018 Amendment	Expended as of 9/30/19		
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	102.6	85%	<div></div>
I-680 Contra Costa Southern Segment	54.0	54.0			55.6	54.0	52.3	99%	<div></div>
I-680 Contra Costa Northern Segment Southbound ⁽⁷⁾	127.4	127.4	19.4	54.3	51.3	53.6	17.0	40%	<div></div>
I-80 Solano	228.2	33.3	15.2		19.0	18.1	11.6	20%	<div></div>
Centralized Toll System	32.4	32.4			33.6	32.4	20.9	85%	<div></div>
Program Planning, Coordination & Management	28.4	28.4			28.4	28.4	20.6	75%	<div></div>
Program Contingency	6.1	6.1			5.1	2.9			<div></div>
Capitalized Start-up O&M	16.0	16.0			16.0	16.0	4.9		<div></div>
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 ⁽⁸⁾	390.0	21.5	1.5	20.0				5%	
Centralized & Program Costs & Start-Up O&M - Gap Closures & Future Conversions	TBD								
TOTALS	1,233.6	463.9	41.1	74.3	345.2	345.2	230.6	71%	

⁽¹⁾ 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

⁽²⁾ Total Cost Estimate represents current estimated cost to complete each project.

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

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

⁽⁵⁾ 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.

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

⁽⁷⁾ 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).

⁽⁸⁾ 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. There were no change to the MTC Express Lanes Program budget in the third quarter of 2019.

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 December 31, 2019, the risk exposure stands at \$4.5 million, which is lower than the \$5.5 million reported last quarter. This decrease is due to the lowering and/or realization of risk associated with the civil construction of the I-880 corridor (near completion) and I-680 North corridor (partial completion).

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 \$4.5 million were it to be 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 most significant risk affecting cost and schedule relates to toll system delays that impact the opening of I-880. The toll system integrator has been delayed significantly 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. Previously, there had been major concerns regarding the delivery of toll sign LED inserts, however, these risks have been lowered as they are no longer on the critical path. Additionally, risks regarding the potential for civil delays to impact coordination with the toll integrator have been significantly downgraded, as much of the civil work is near completion. Toll system integrator delays are currently the largest risk, and MTC staff continues to work with them to mitigate 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

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

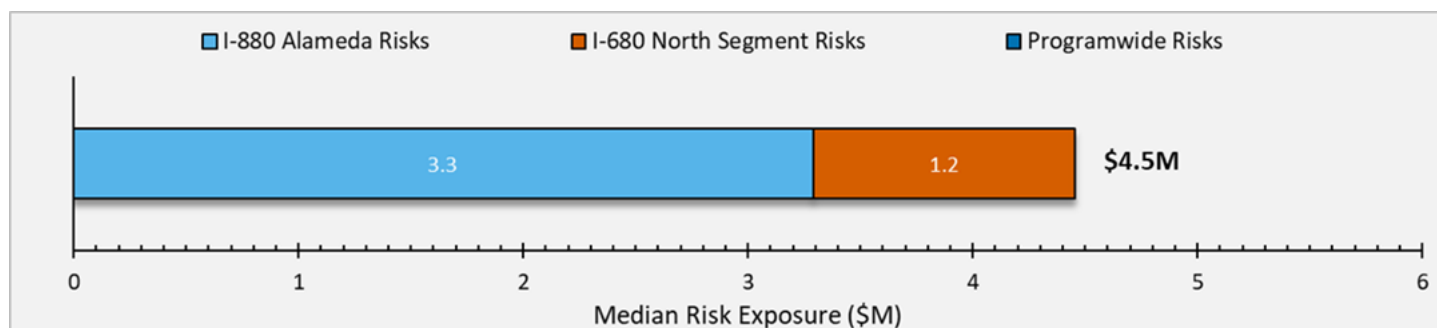


Chart #1 shows the contribution of each project's risks toward the total program risk exposure. Risk exposure is calculated using Monte Carlo simulation.

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.

- A newly identified risk is the need to upgrade the toll system host to include an image review module for trip building. If I-880 opens without this upgrade, the toll system integrator may be overwhelmed with too many images to review manually. The toll system integrator has developed a preliminary schedule to complete the task in April 2020. MTC is monitoring this schedule for slippage.
- 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. Depending on comments from Caltrans, the plan could have minor cost and schedule impacts. MTC staff is actively coordinating with Caltrans to mitigate these risks and expects to finalize a decision in the coming months.

I-680 Contra Costa Northern Segment Southbound

- 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. MTC has identified a

significant concern relating to schedule overlap between the US-101 Southern Segment and the most recent I-680 North schedule. MTC escalated these concerns to toll system integrator executives to communicate the need for additional staff and installation managers. MTC will continue to track the schedules of both corridors, and ensure mitigation measures are in place to reduce schedule impacts.

- PG&E delays in hookups remains a critical risk on I-680 North. There are currently regular quarterly meetings with PG&E to discuss progress and issue resolution, but the potential cost and schedule risk remains. MTC will continue to monitor this risk.
- The civil contractor has made significant progress on the northern limits of the project and is proposing to accelerate the schedule. Therefore, several risks relating to civil construction delivery have been reassessed and lowered, including impacts from unexpected conditions and delayed toll system integrator acceptance of civil work. This risk is no longer identified as a significant risk.
- An additional risk that had been previously reported related to a Caltrans-managed safety project in the corridor. Thus far, this risk has been managed well, due in part to the civil contractor holding both contracts and working with sub-contractors to ensure on-going coordination.

Programwide Risks

- There are no programwide risks of major concern at this time.

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

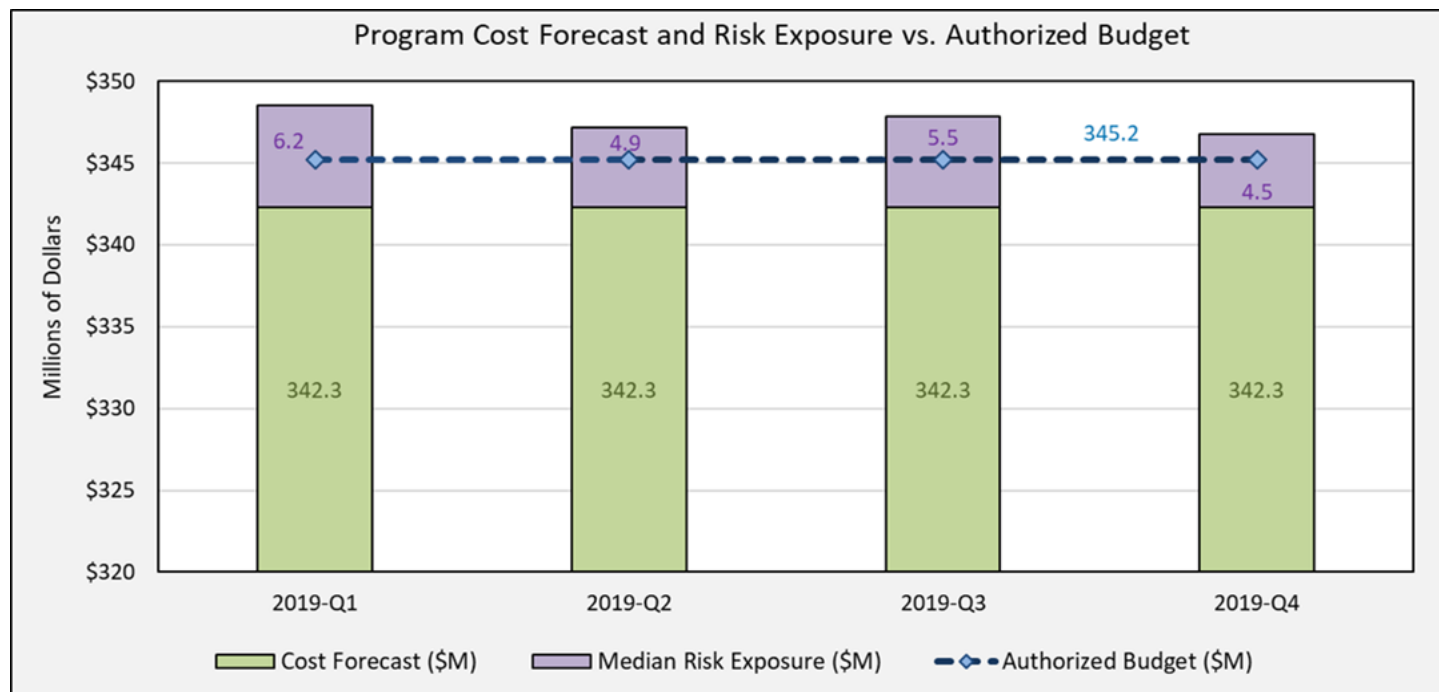


Chart #2 shows the program cost forecast and risk exposure as compared to the authorized program budget.

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

- Staff engaged BAIFA, agency stakeholders and the public on a draft amendment to the BAIFA Toll Facility Ordinance for proposed tolling rules on the I-880 Express Lanes and changes to rules on the I-680 Contra Costa Express Lanes. The thirty-day public comment period concluded with a public hearing in December 2019.

Current Program Management Activities

- In partnership with other express lane operators, staff continues to develop a strategic plan to help prioritize express lanes funding and delivery in the region. This work is being coordinated with MTC's Planning Section to inform Plan Bay Area 2050.
- 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.
- Staff is procuring vendors for two pilots to improve occupancy enforcement. Subject to MTC Operations Committee approval, a roadside camera-based system would be piloted at the Bay Bridge, and a smartphone app-based system would be piloted in the I-680 Contra Costa Express Lanes corridor. Lessons learned over the next 1-2 years may position BAIFA to better deter HOV eligibility cheaters.

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.

Current Toll System Activities

- Staff has begun 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 began 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.
- Working with MTC's 511 Traveler Information Program, staff will begin sharing real-time toll amounts and general message sign information with the 511 system. 511 staff will work on how best to publicly disseminate the information.



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[®] 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.

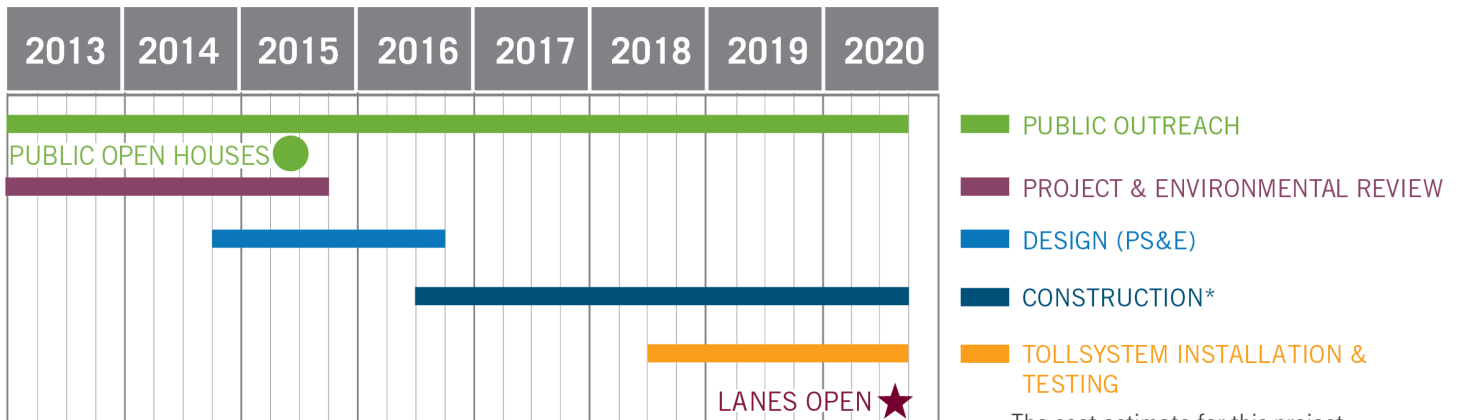


- At strategic points in the project timeline, staff performed outreach and education about I-880 design, construction and proposed operations including with members of low-income communities (2012); corridor city staff (2015 & 2019); and corridor elected officials (2017 & 2019).

Current Project Activities

- Civil construction work is 95% complete as of December 2019. Remaining work includes installation of fiber laterals to connect Caltrans' freeway management equipment to the communications backhaul, which will continue through spring 2020. All PG&E service connections are installed, with the exception of one at Marina Boulevard. Final pavement and express lane striping is planned to start in May 2020 and last approximately 12 weeks. During this interim period, the future I-880 express lanes will be signed and continue to function as HOV lanes.
- 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 80% complete, and from SR-92 to Hegenberger Road, which is 15% 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 looking at incentivizing the toll system integrator to be ready to open before the end of summer when traffic is lighter.
- Staff is beginning 'go live' planning in order to be ready to open the I-880 Express Lanes.
- Staff is preparing customer education materials and lining up messaging channels for a customer education campaign to begin about three months before the lanes open.
- 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.
- Monthly construction notices and ramp closure/ detour notices continue to be sent.

Project Schedule by Phase



*Includes I-880 median barrier improvements.

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

Project Cost

Total Cost Estimate ⁽¹⁾	Cost Estimate, Funded Phases ⁽²⁾	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds ⁽³⁾			Percent Complete ⁽⁴⁾
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 9/30/19	
139.1	139.1			135.5	139.1	102.6	85%

Costs shown in millions of escalated dollars.

⁽¹⁾ Total Cost Estimate represents current estimated cost to complete each project.

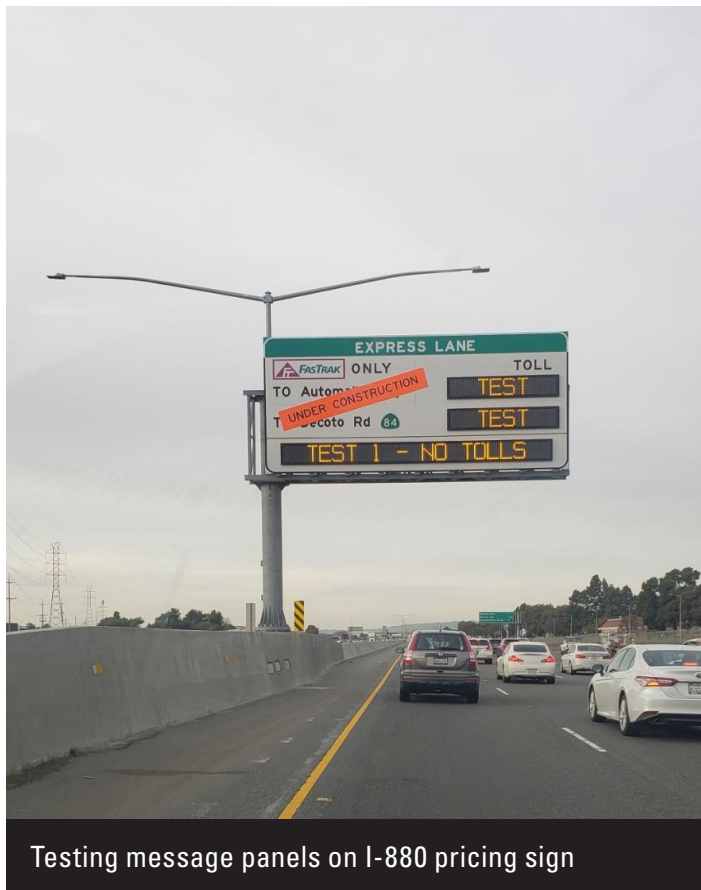
⁽²⁾ Cost Estimate, Funded Phases represents current estimated cost to complete phases that are funded for each project.

⁽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

Fall 2021

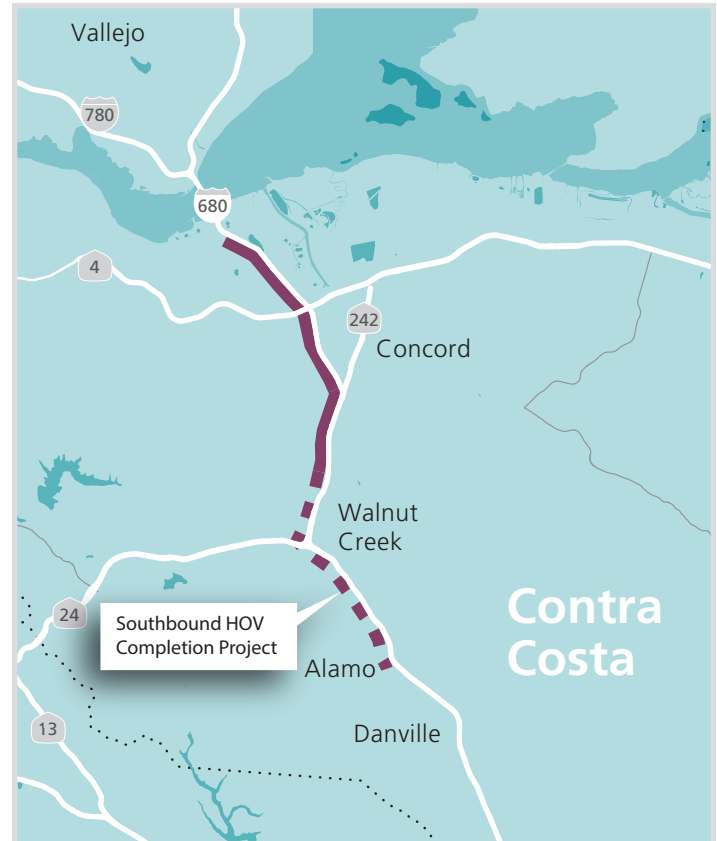
Project Description

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).
- The replacement planting design was updated based on Caltrans' comments and resubmitted in December 2019.

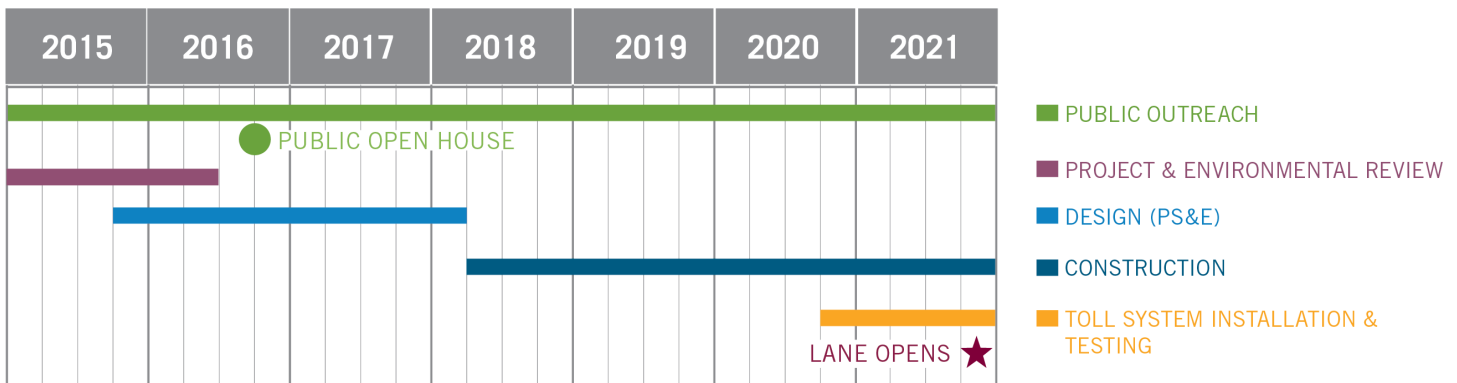


Current Project Activities

- The civil contractor is accelerating paving work to make way for the toll system integrator to complete the toll system installation ahead of schedule.

- The civil contractor expects to complete ramp and highway widening at various locations on I-680 southbound between Monument Boulevard and Olympic Boulevard as well as begin sound wall construction in Walnut Creek (between South Main Street and Rudgear Road) in January 2020. Two of five retaining walls are complete; construction of the remaining three is on-going. The civil contractor also plans to complete new concrete median barriers at various locations on I-680 between SR-242 and SR-24.
- Caltrans will finish its review of the toll system design and issue an encroachment permit for the toll system integrator in March 2020.

Project Schedule by Phase



Project Cost

Total Cost Estimate ⁽¹⁾	Cost Estimate, Funded Phases ⁽²⁾	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds ⁽³⁾			Percent Complete ⁽⁴⁾
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 9/30/19	
127.4	127.4	19.4	54.3	51.3	53.6	17.0	40%

Costs shown in millions of escalated dollars.

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

⁽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.

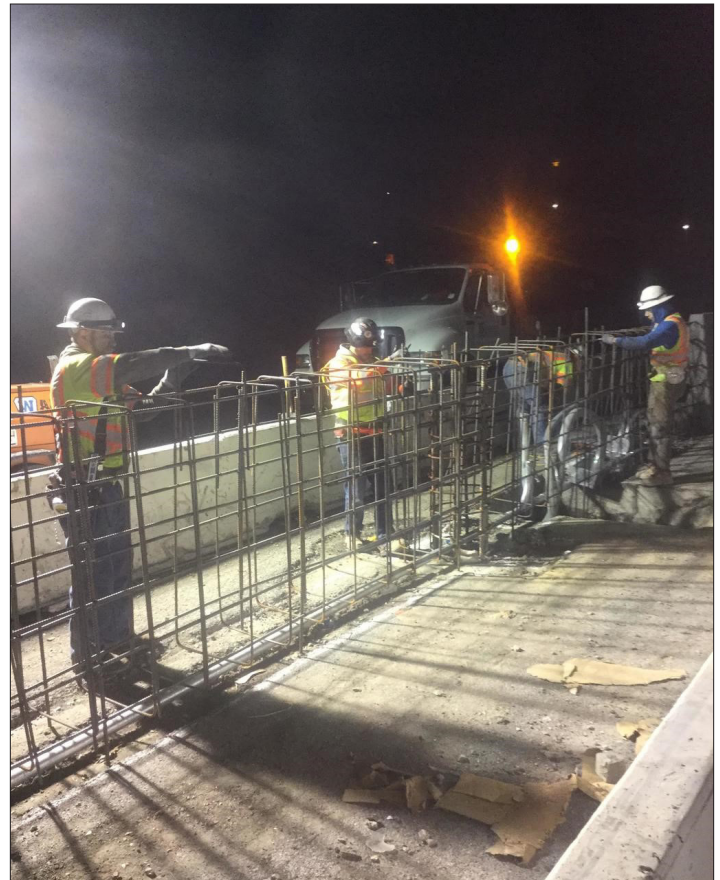
⁽³⁾ BAIFA Express Lane Funds represent the funds that have been allocated from the BAIFA budget.

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

Wall face concrete pour for retaining wall no. 2 on I-680 in Alamo/Walnut Creek



Highway widening on I-680 in Pleasant Hill



Median concrete barrier rebar on I-680 in Walnut Creek

I-80 Solano (SOL-80)

Fairfield to Vacaville

Red Top Road to I-505

Total Cost Estimate

\$228.2 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.

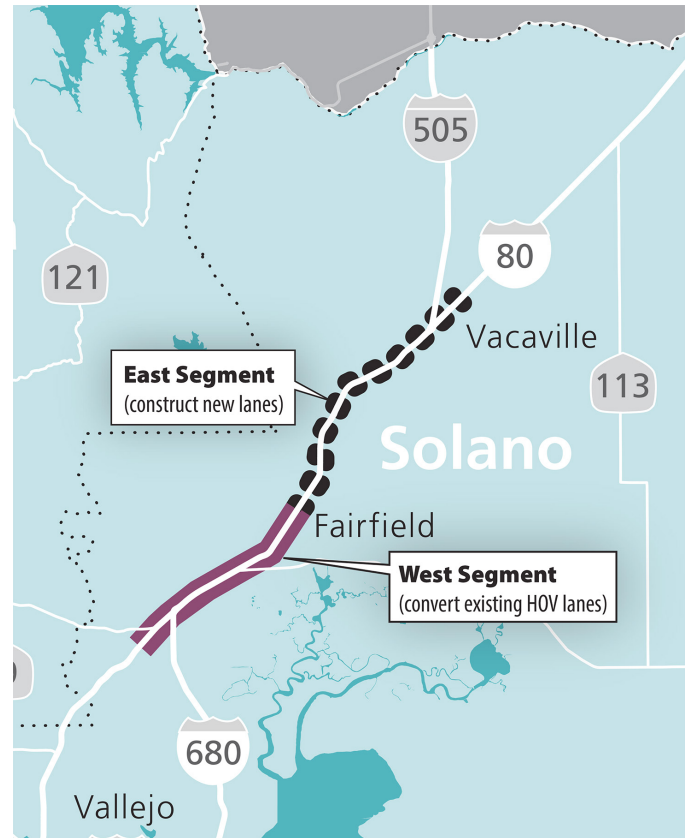
The project will also construct new eastbound and westbound lanes between Air Base Parkway and I-505 in Vacaville. In this section, the highway will be widened along with the installation of express lane striping, signage and equipment. The project will result in 36 miles of express lanes on I-80 in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

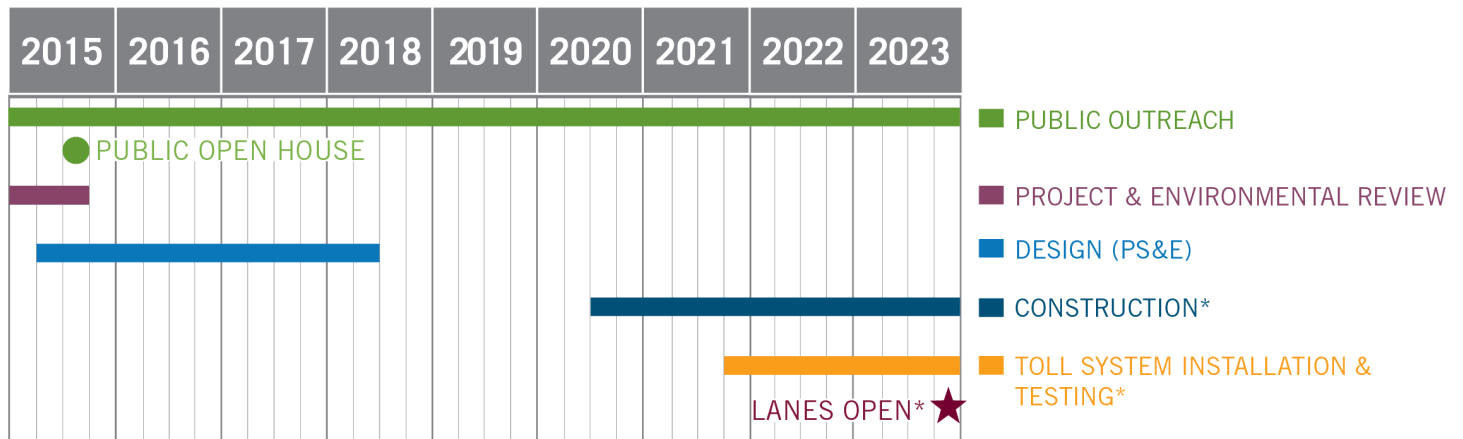
- A public open house was held in August 2015.
- The preliminary engineering report and environmental document were completed in December 2015.
- The final design document was approved by Caltrans in March 2018.
- The project reached the Ready-to-List milestone in April 2018.
- Caltrans submitted this 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.
- MTC and STA staff continue to explore potential funding sources.

Project Schedule by Phase



* Funding for these activities is not yet secured.

Project Cost

Total Cost Estimate ⁽¹⁾	Cost Estimate, Funded Phases ⁽²⁾	Regional Measure 2 Funds (allocated)	Other Funding (allocated)	BAIFA Express Lane Funds ⁽³⁾			Percent Complete ⁽⁴⁾
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 9/30/19	
228.2	33.3	15.2		19.0	18.1	11.6	20%

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.

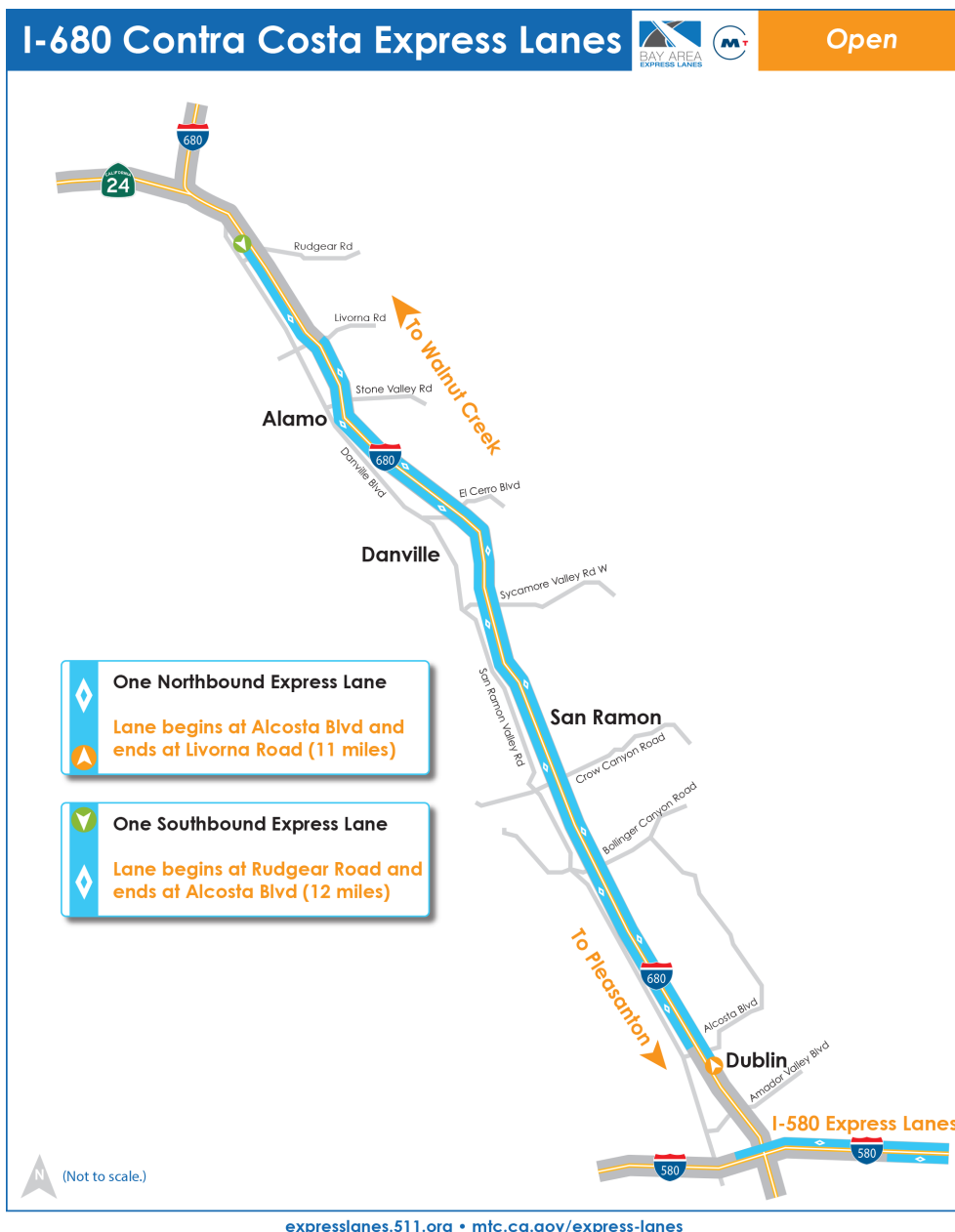
IV. OPERATIONS

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.



Rules of the Road

- Hours are Monday through Friday, 5 a.m. – 8 p.m.
- Tolls change based on traffic congestion; there is no maximum toll
- All vehicles in the express lane must use a FasTrak® or FasTrak Flex® toll tag
- Carpools of 2 or more people, eligible clean air vehicles, motorcycles and transit buses travel toll-free with a properly set FasTrak Flex® toll tag
- Learn more at expresslanes.511.org

APPENDICES

APPENDIX A

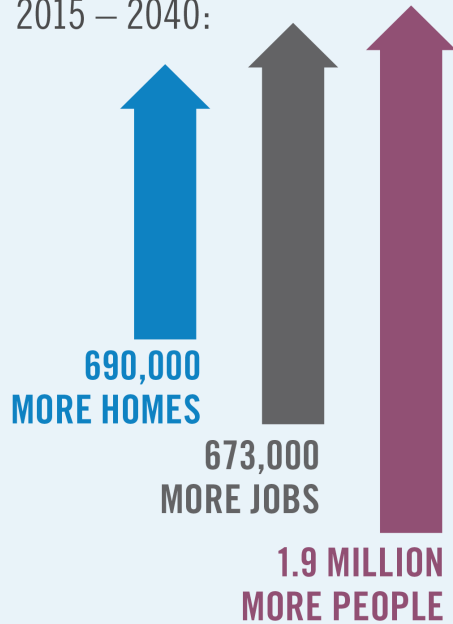
Express Lanes Overview

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.

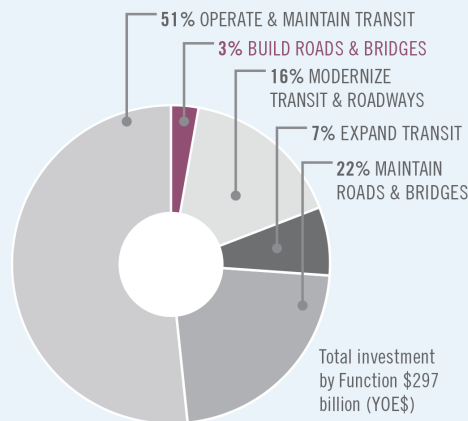
REGIONAL GROWTH 2015 – 2040:



Data Source: Plan Bay Area 2040 (2017).

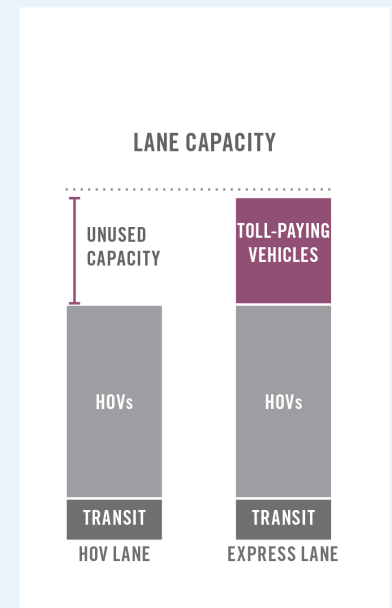
REGIONAL INVESTMENT BY 2040:

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



Data Source: Plan Bay Area 2040 (2017).

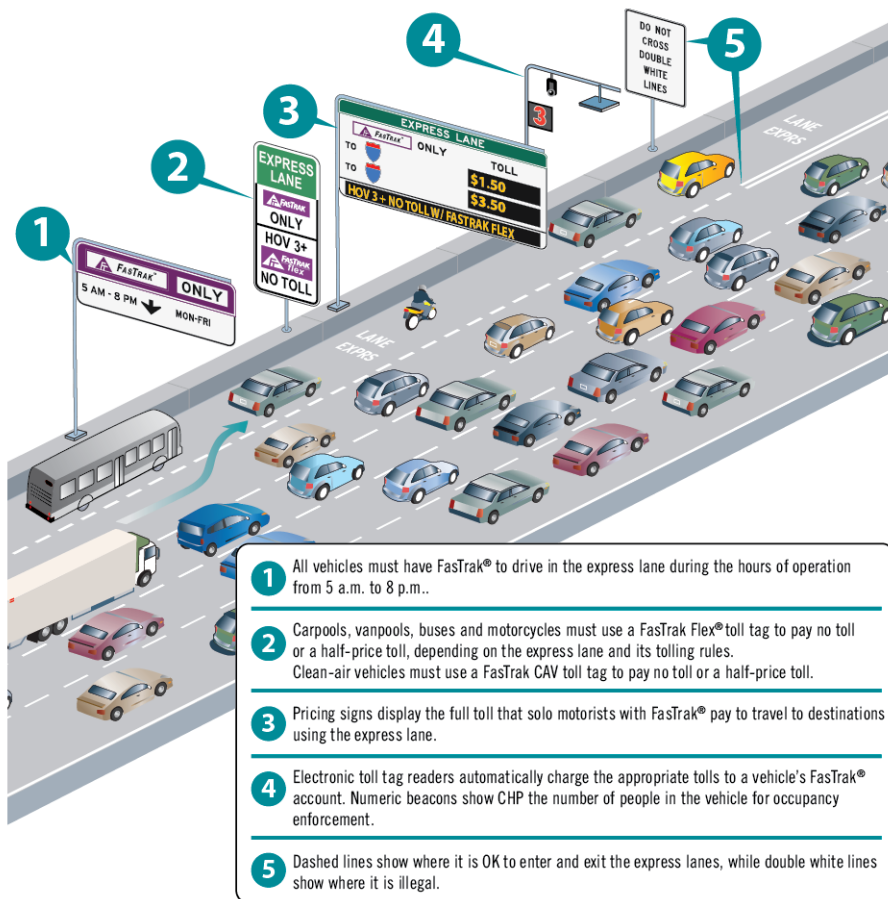
HOW EXPRESS LANES HELP:



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 reduced 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 reduced 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

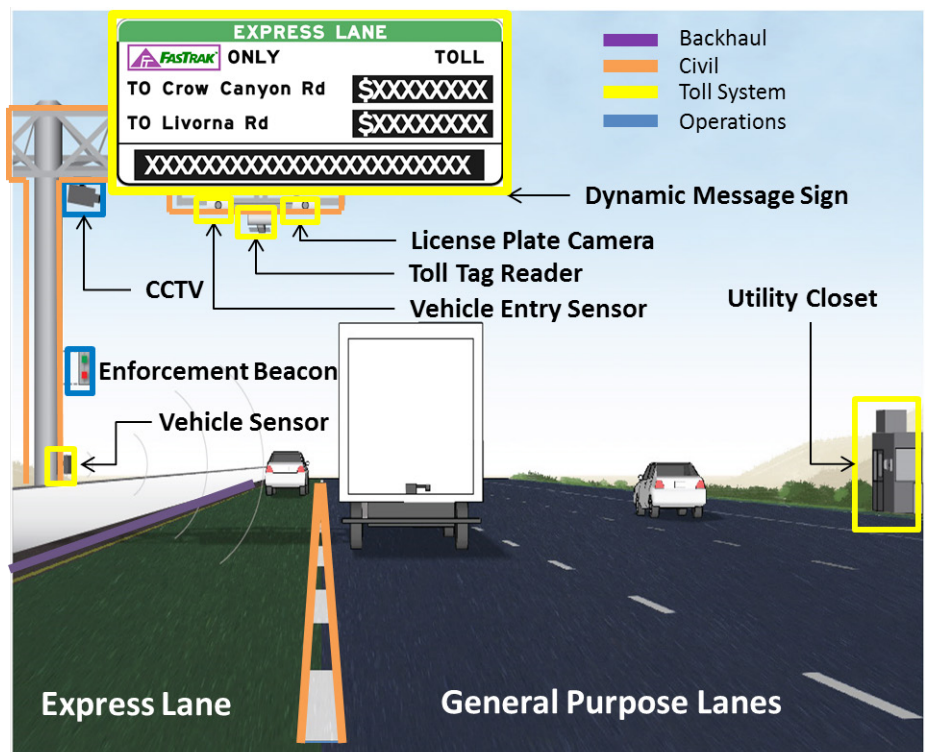
The toll system consists of two components, the in-lane system and the back-end “host” system. The lane system consists of all the equipment on the highway needed to operate the toll system including toll tag readers, cameras and vehicle detection. The host system serves as the brain of the toll system, 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[®] 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

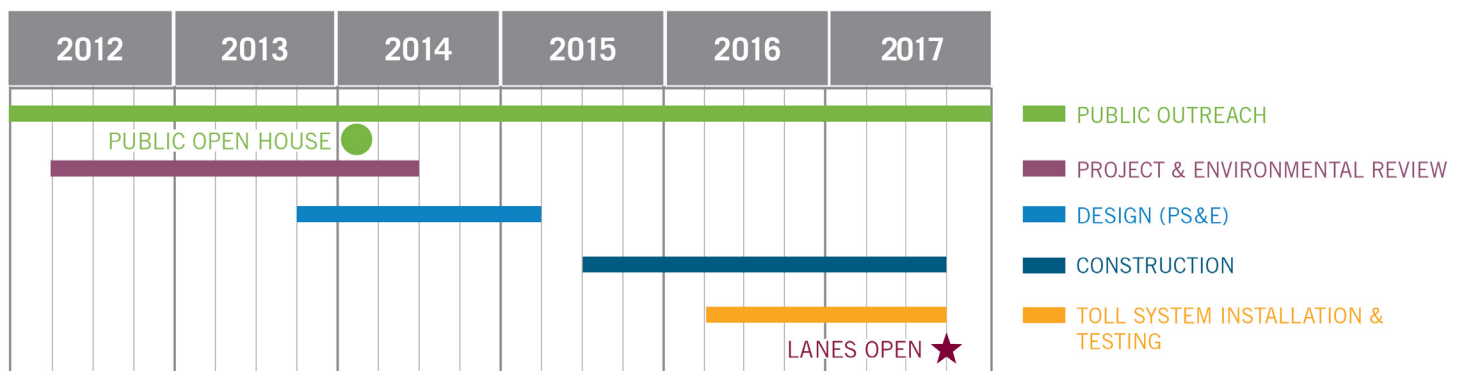
- The integrator is fine tuning field equipment and addressing punch list items in preparation for Operations Testing in summer of 2018. This test verifies the toll system meets all specifications and leads to the maintenance phase of operations.
- The Backhaul contractor completed project 'as-built' 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 ⁽¹⁾	Cost Forecast ⁽²⁾	Regional Measure 2 Funds (allocated)	BAIFA Express Lane Funds ⁽³⁾			Physical % Complete ⁽⁴⁾
			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.

⁽¹⁾ Program estimate represents current estimated cost to complete each project.

⁽²⁾ Cost forecast 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⁾ 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

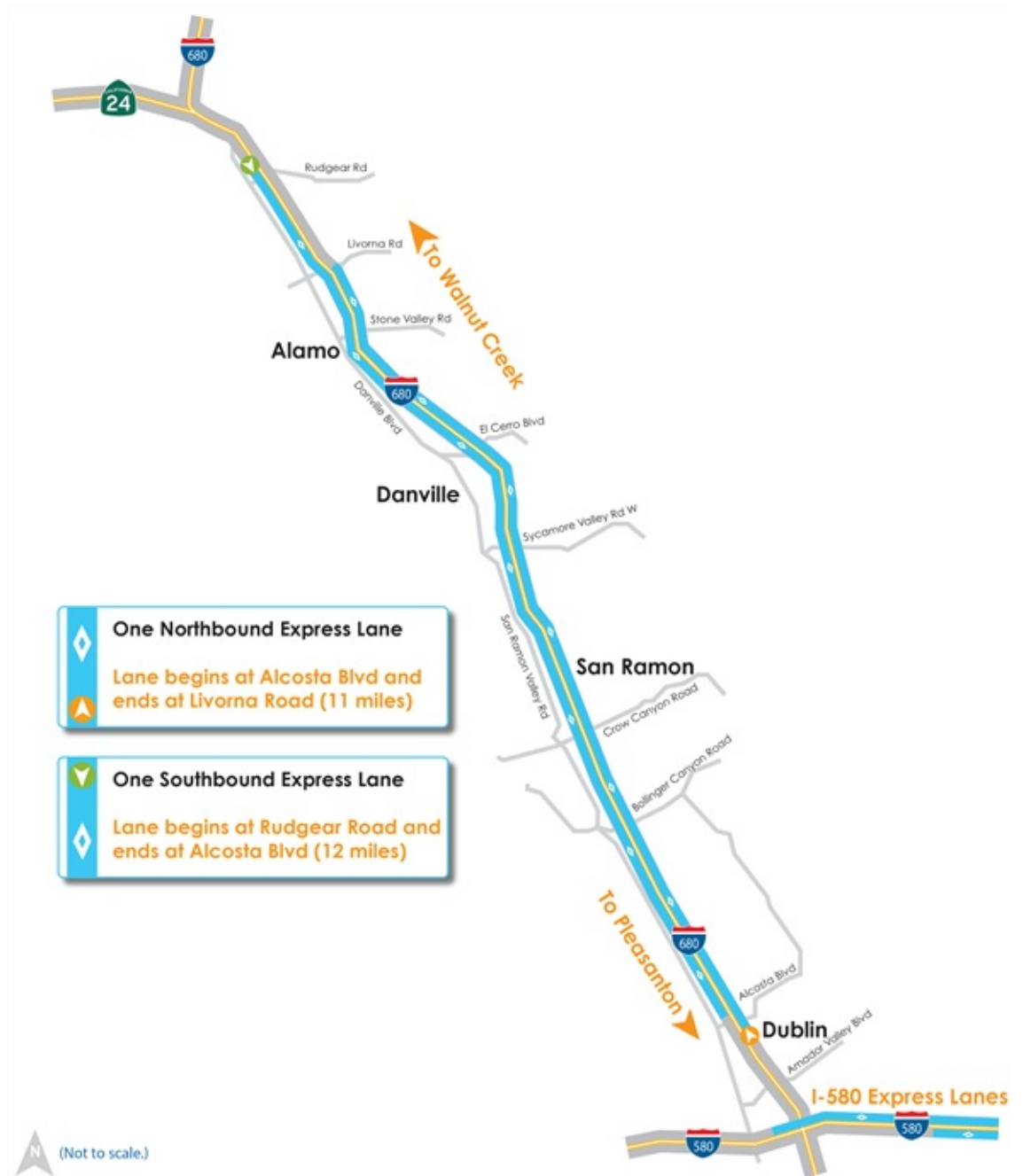
I-680 Contra Costa Express Lanes Operations Report

I-680 Contra Costa Express Lanes Performance 4th Quarter 2019 - October - December



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



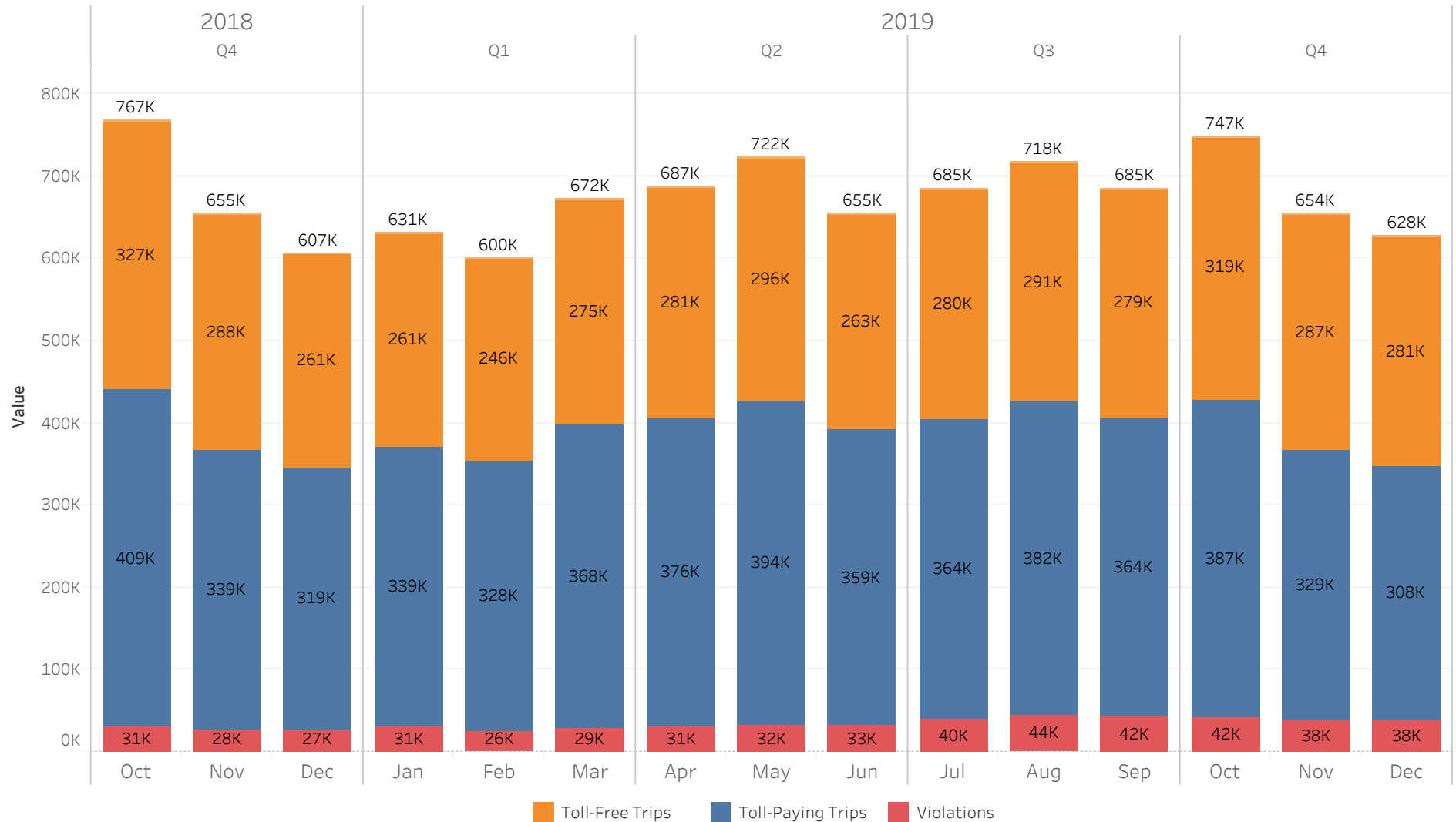
- Drivers made 2 million total trips in the express lanes in Q4 2019; similar to the prior quarter (Q3 2019) and the same as a year ago (Q4 2018). Northbound trips were down 4% and southbound trips were up 3% compared to Q4 2018.
- Daily express lane trips averaged 31,700 the same as Q4 2018.
- Paid trips were 1,024,000, an 8% decline from Q3 2019, which had 1,110,000 paid trips, and a 4% decline from Q4 2018, which had 1,067,000 paid trips. The decline in paid trips was all in the northbound direction, where paid trips fell 9% from Q4 2018. Southbound paid trips were the same in Q4 2019 as in Q4 2018.
- 45% of trips were by vehicles declared as toll-free, after having held steady at 41% since January 2019. Toll violators, which are vehicles without FasTrak® accounts, were 6% of all trips.
- Peak hour average express lane speeds were 8 to 13 miles per hour faster than average general purpose lanes for the length of the corridor. At locations in the corridor where peak hour slowdowns occur, average express lane speeds were as much as 19 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 drop below 45 mph on 65% of the days in the quarter northbound and 64% of the days in the quarter southbound.
- Monthly average tolls paid ranged from \$6.80 to \$7.90 in the northbound p.m. peak hour and \$5.70 to \$5.90 in the southbound a.m. peak. When traffic flowed well in the non-peak hours, the average toll paid was \$1.80 northbound and \$1.20 southbound.
- The highest posted toll to travel the entire corridor in either direction was \$10, up from \$8.50 in last quarter. It was paid by 12% of tolled drivers.



- Average tolls paid in Q4 2019 increased over Q3 2019. Northbound, they were up \$1 in the p.m. peak hour and \$2 in the a.m. peak hour. Southbound, they were up \$0.10 in the a.m. peak hour and \$1.70 in the p.m. peak hour. The increases in the highest posted tolls and average tolls paid are due to changes in the toll algorithm intended to address slowdowns and demand in express lanes. As can be seen in the trip data, the northbound toll increase suppressed northbound express lane demand. More quarters of data will be needed to determine if the changes are reducing how often express lane speeds fall below 45 mph.
- CHP filled 89% of requested enforcement hours and made about 1,400 enforcement contacts in Q4 2019, down from 91% of requested hours and 1,800 enforcement contacts in Q4 2018.

Express Lane Trips

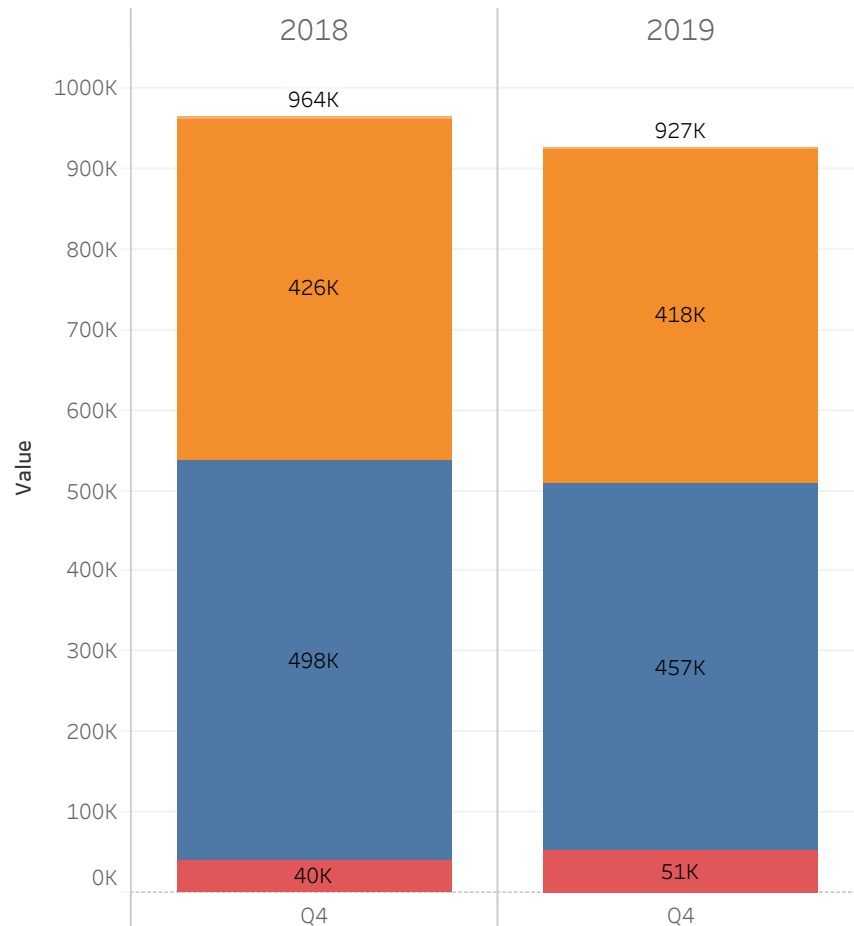
Over 18.6 million express lane trips have been taken since the I-680 Contra Costa express lanes opened in October 2017. In Q4 2019, 2 million trips were taken, the same as in Q4 2018. However, toll paying trips were down 4%, while toll-free trips were up 1% and toll violation trips were up 37% from the same quarter last year, although still a small percentage of all trips. MTC is investigating reasons for the increase. Average daily trips (ADT) for the quarter was 31,700; the same as in Q4 2018. ADT since opening is 32,600.



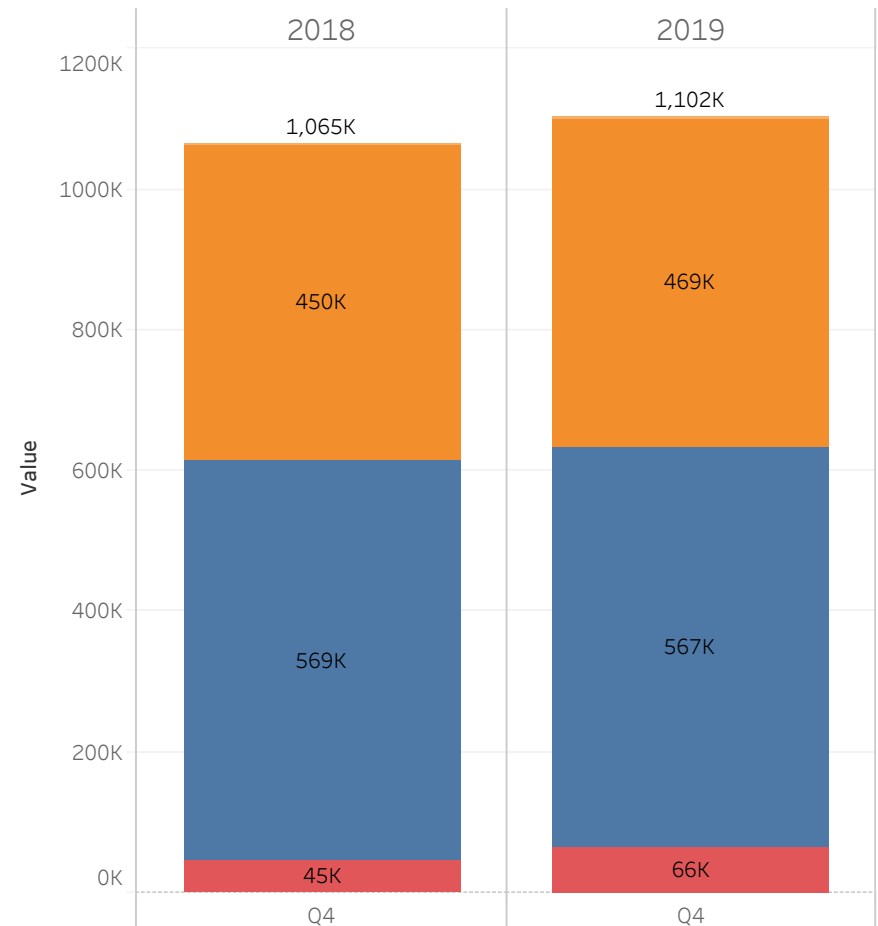
Express Lane Trips by Direction

Looking at trips by direction provides more information about changes in express lane use. Northbound trips decreased 4% from Q4 2018 to Q4 2019 - toll paying trips fell 9%, toll-free trips fell 2%, and violations rose. Southbound trips increased 3% from Q4 2018 to Q4 2019 - toll paying trips were the same, toll-free trips rose 4%, and violations rose. The decrease in northbound toll paying trips is due to rising tolls resulting from toll algorithm adjustments intended to improve express lane speeds. The adjustments prioritized northbound demand, which sees the most significant express lane slow downs.

Northbound Trips Q4 2018 & Q4 2019

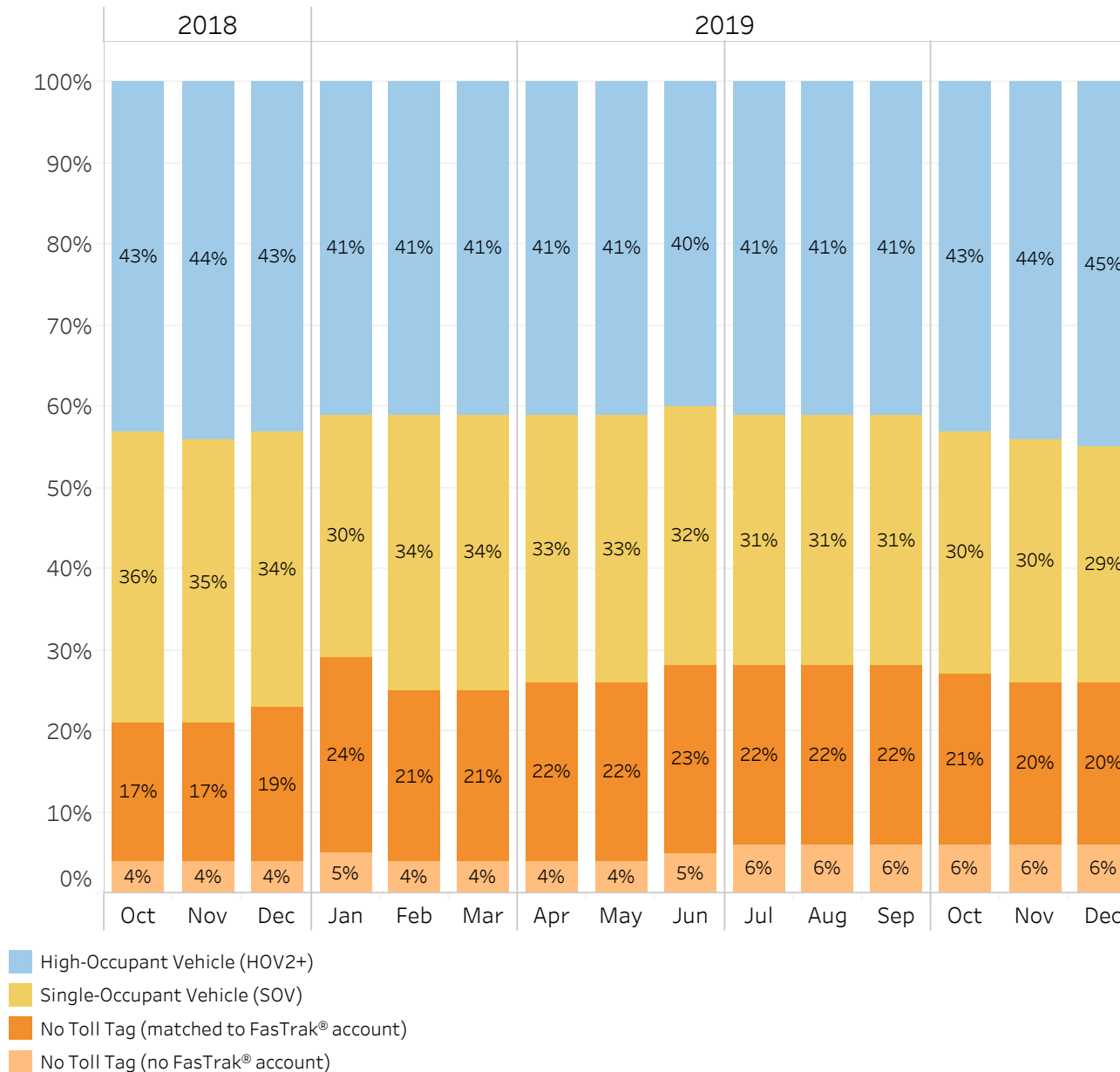


Southbound Trips Q4 2018 & Q4 2019



Toll-Free Trips Toll-Paying Trips Violations

Express Lane Trip Types



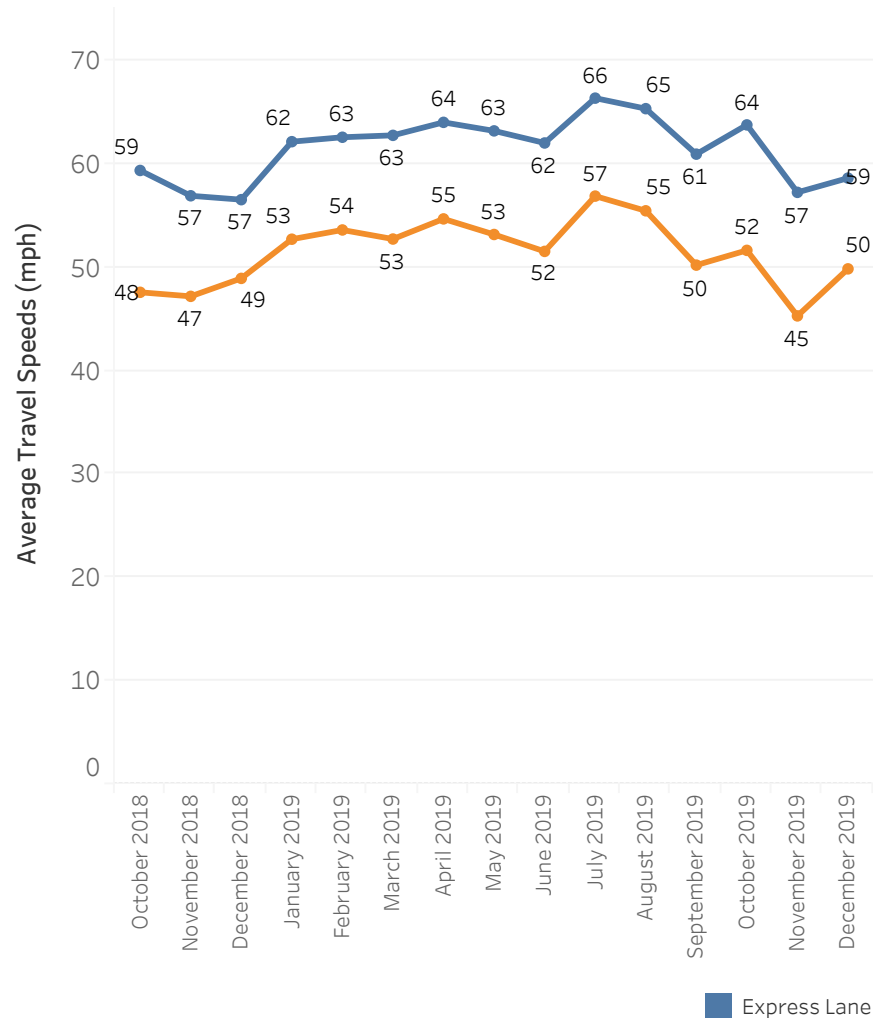
- The share of toll-free trips taken in carpools, clean air vehicles, etc. rose in Q4 2019 to up to 45% after holding steady at 41% since January 2019.
- The share of toll-paying trips was lower in Q4 2019 (49% to 51%) than in the prior 12 months.
- These changes are due to a 4% decline in toll-paying trips and a 1% increase in toll-free trips. The decline in toll-paying trips occurred northbound and is due to toll increases intended to improve express lane flow.
- The increase in the share of vehicles without a FasTrak® toll tag or account (toll violators) rose to 6% in Q3 2019 and remained 6% in Q4 2019.

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

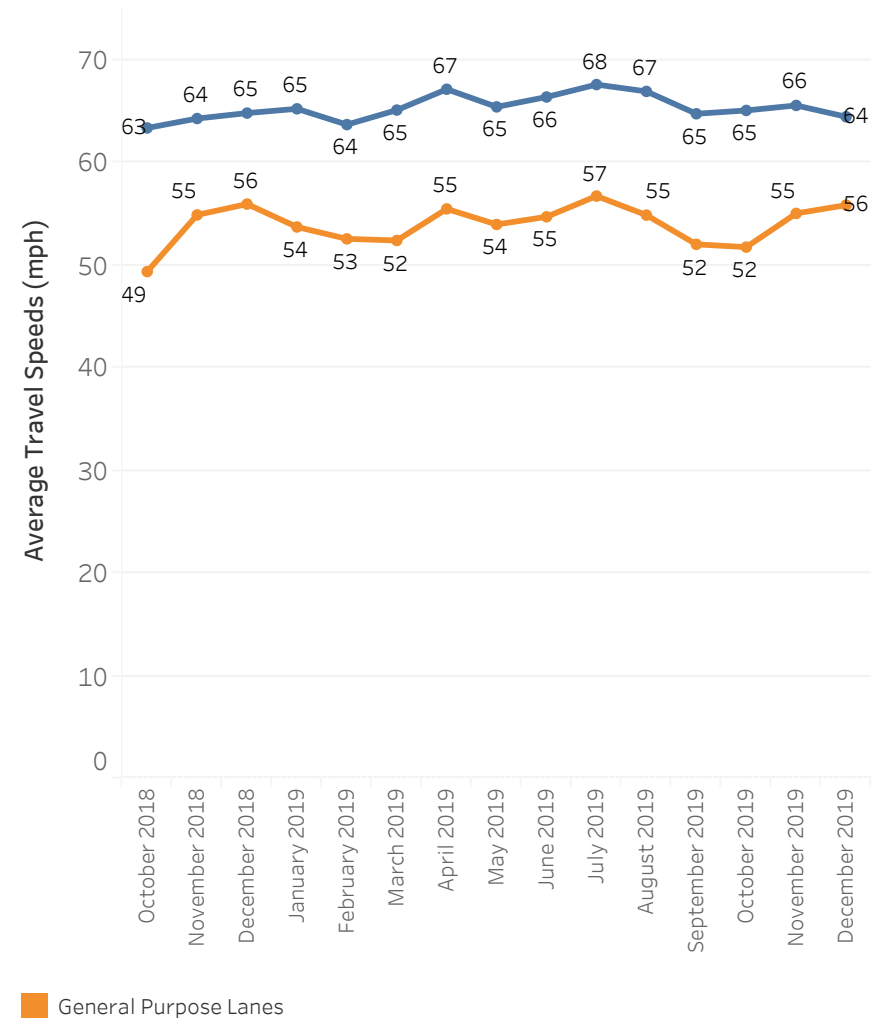
Peak Hour Average Corridor Speeds

In the hours of slowest traffic in the corridor - 5 to 6 p.m. northbound and 8 to 9 a.m. southbound - speeds throughout the corridor ranged from 8 to 13 miles per hour faster than speeds in the general purpose lanes. These speed differentials were slightly higher northbound and slightly lower southbound compared to Q4 2018.

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



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

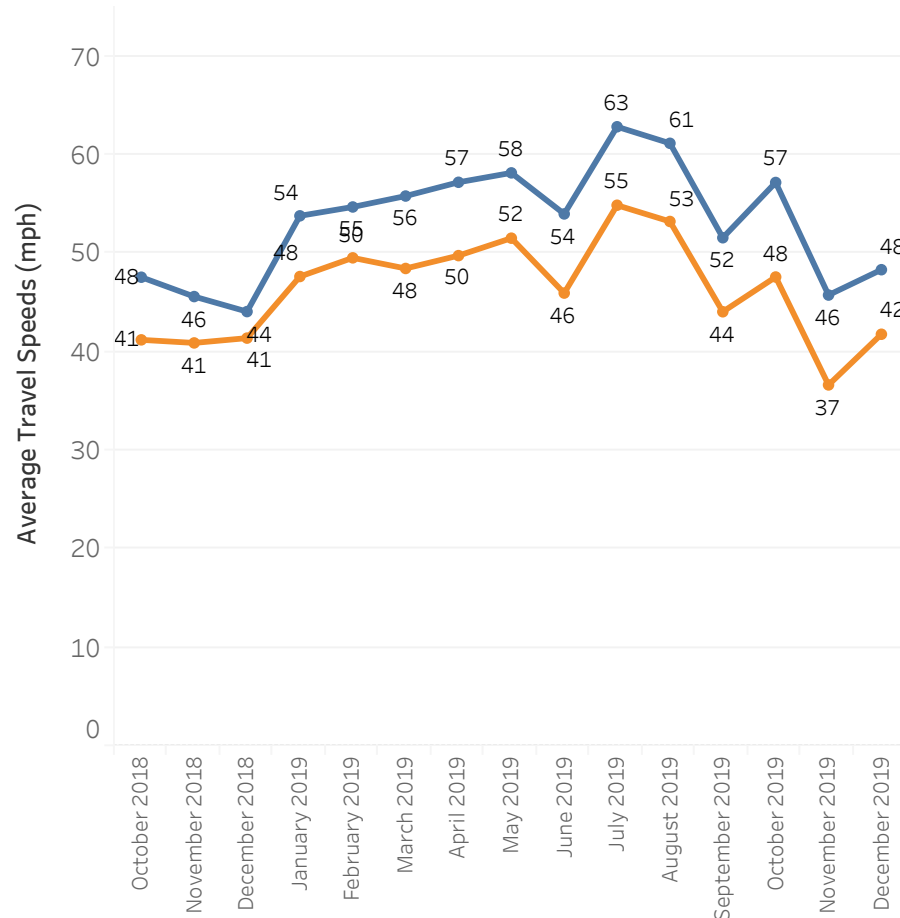


Speeds are averaged over the distance of the express lane. Peak hours are defined as the hours with lowest average corridor speeds across all lanes.

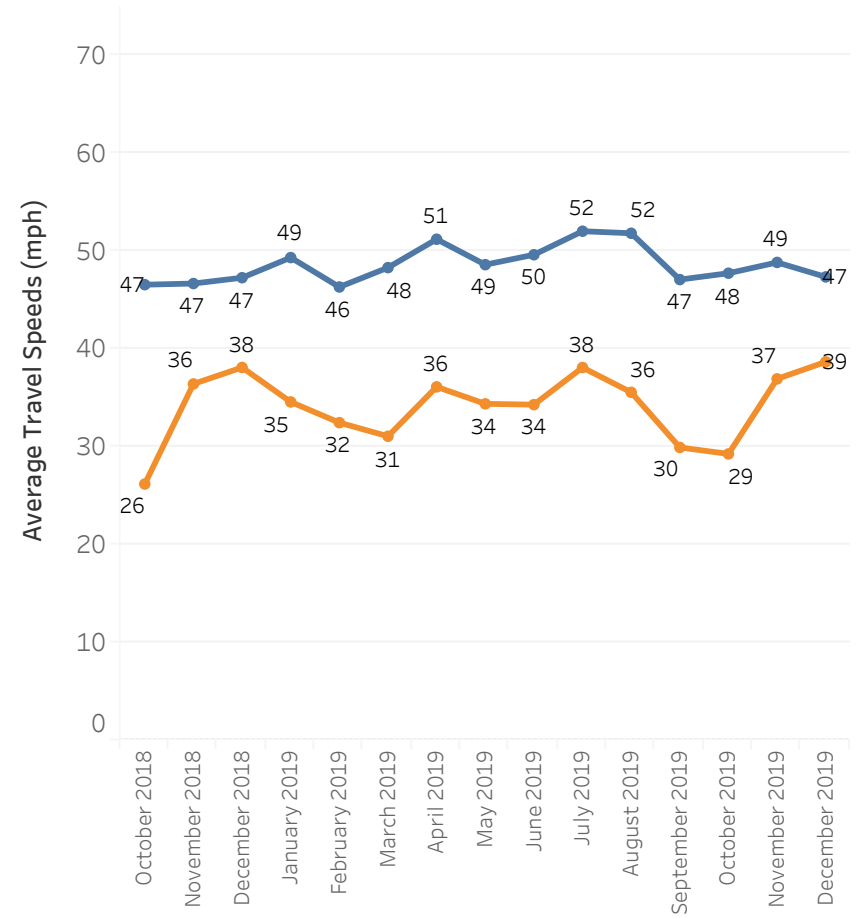
Peak Hour Slow Spot Average Speeds

In the hours of slowest traffic - 5 to 6 p.m. northbound and 8 to 9 a.m. southbound - and at the most congested locations - near El Cerro Blvd. northbound and between Rudgear Rd. and Livorna Rd. southbound - speeds in the express lanes were 6 to 19 miles per hour faster than in the general purpose lanes. These speed differentials were slightly higher northbound and slightly lower southbound compared to Q4 2018. Toll algorithm adjustments were implemented in October 2019 to improve speeds at these locations, especially northbound. More time is needed to see if the adjustments have the intended effect.

Northbound P.M. Peak Hour (5 - 6pm) - Near El Cerro

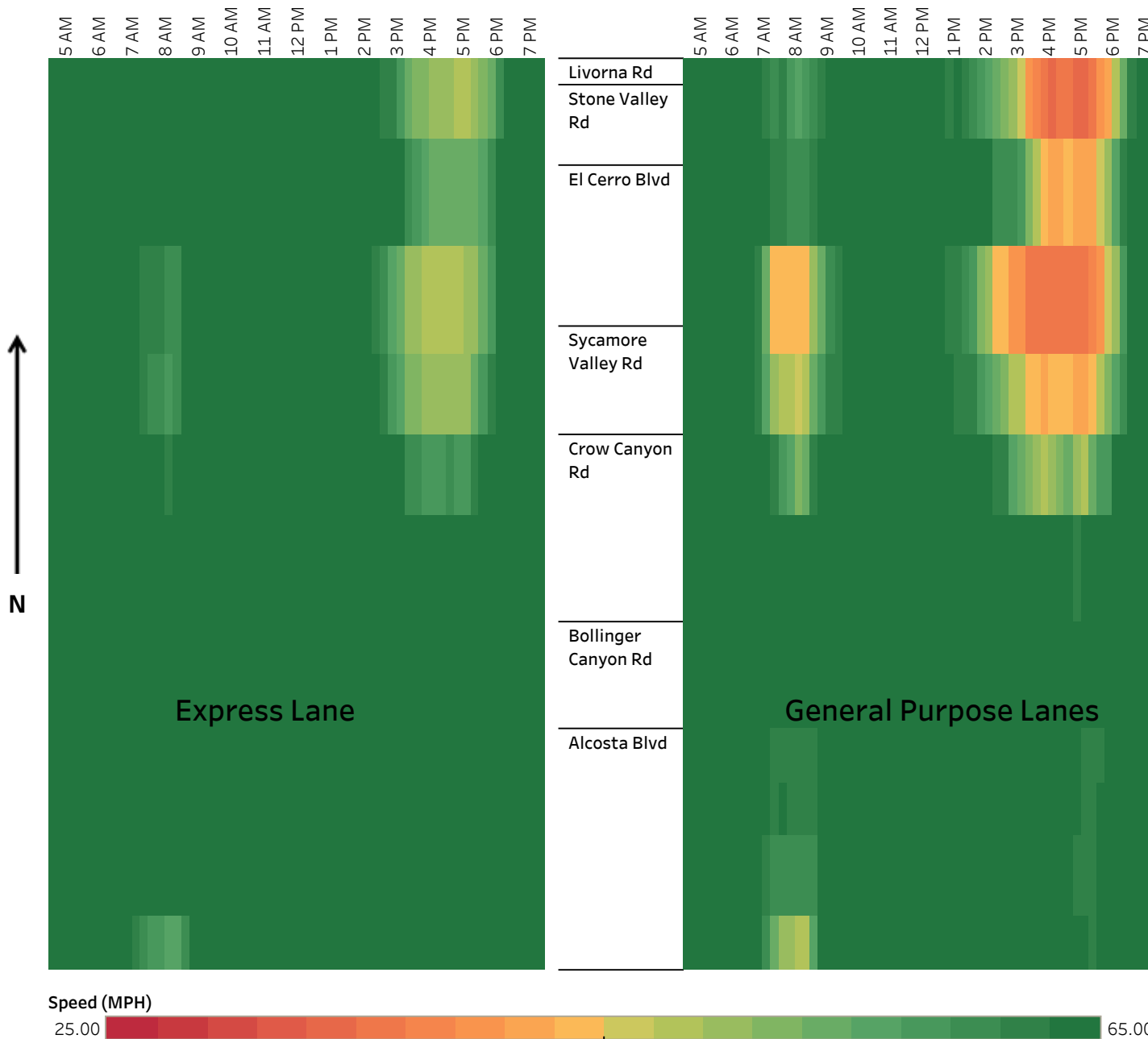


Southbound A.M. Peak Hour (8 - 9am) - Between Rudgear and Livorna



Peak hours are defined as the hours with lowest average corridor speeds across all lanes.

Northbound Speeds by Location & Time



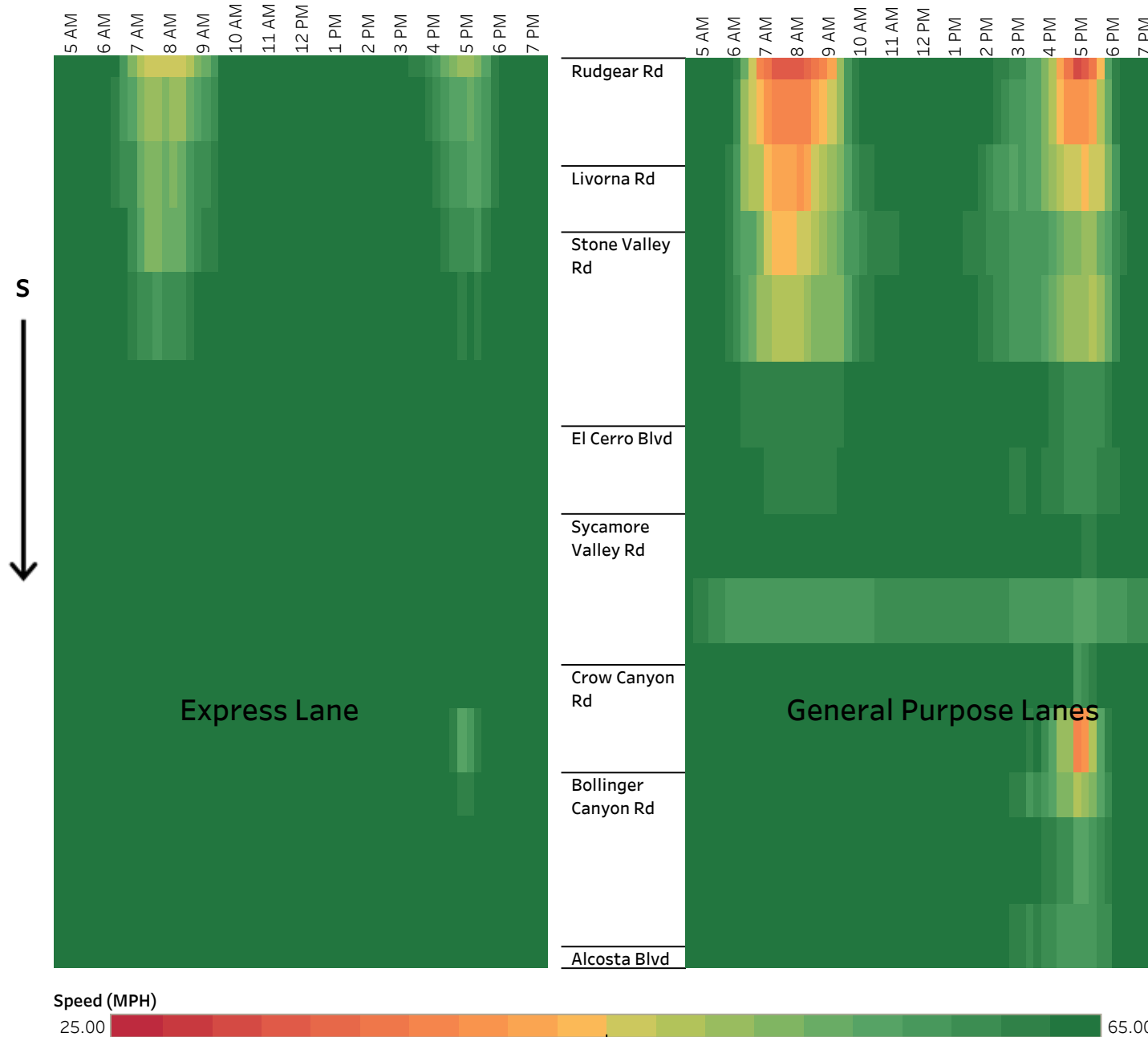
Congestion originating north of the express lane regularly caused slowdowns in the general purpose lanes in the p.m. peak.

In peak hour congestion, express lane users traveled an average 9 to 13 mph faster through the corridor than general purpose lane users in Q4 2019.

In peak hour congestion, express lane users traveled an average 6 to 9 mph faster at the slowest location near El Cerro Blvd. than general purpose lane users in Q4 2019.

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

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 and between Crow Canyon Rd. and Bollinger Canyon Rd. in the p.m. peak.

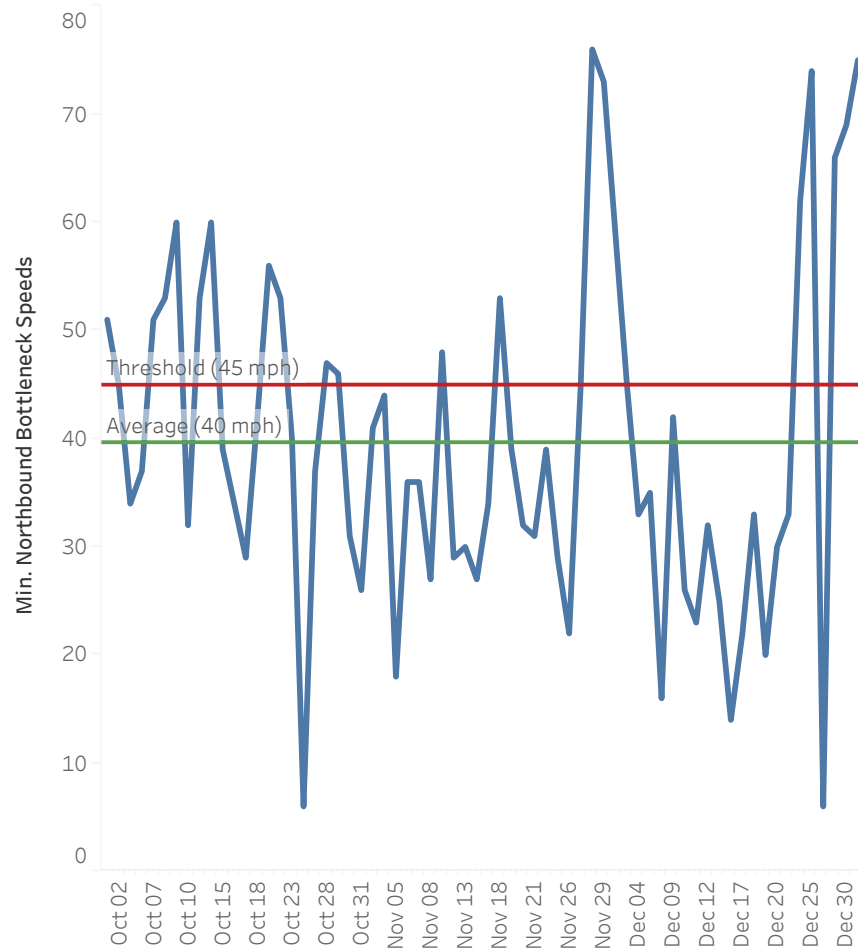
In peak hour congestion, express lane users traveled an average 8 to 13 mph faster through the corridor than general purpose lane users in Q4 2019.

In peak hour congestion, express lane users traveled an average 8 to 19 mph faster at the slowest location between Rudgear Rd. and Livorna Rd. than general purpose lane users in Q4 2019.

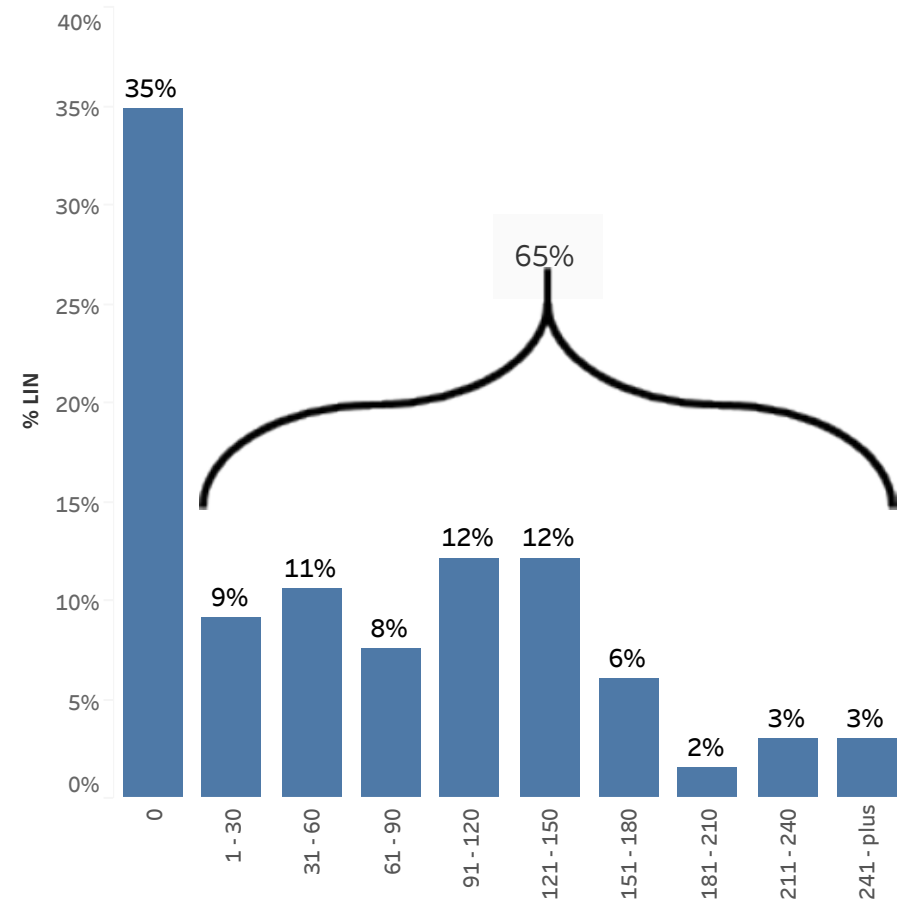
Traffic flowed well in all lanes between 10 a.m. and 4 p.m.

Lowest NB Exp Lane Speed - near El Cerro

While corridor-wide express lane speeds average over 60 mph, speeds often drop below 45 mph northbound between Sycamore Valley Rd. and El Cerro Blvd. The lowest daily speed at this location averaged 40 mph over the quarter and fell below 45 mph on 65% of days in the quarter. On 20% of the days in the quarter, the speed decline lasted 1 to 60 minutes and on 20% of the days the speed decline lasted 61 to 120 minutes. 14% of the days experienced the slow speeds for more than 2 hours. Toll algorithm adjustments were implemented in October 2019 to improve speeds at this location. More time is needed to see if the adjustments have the intended effect.



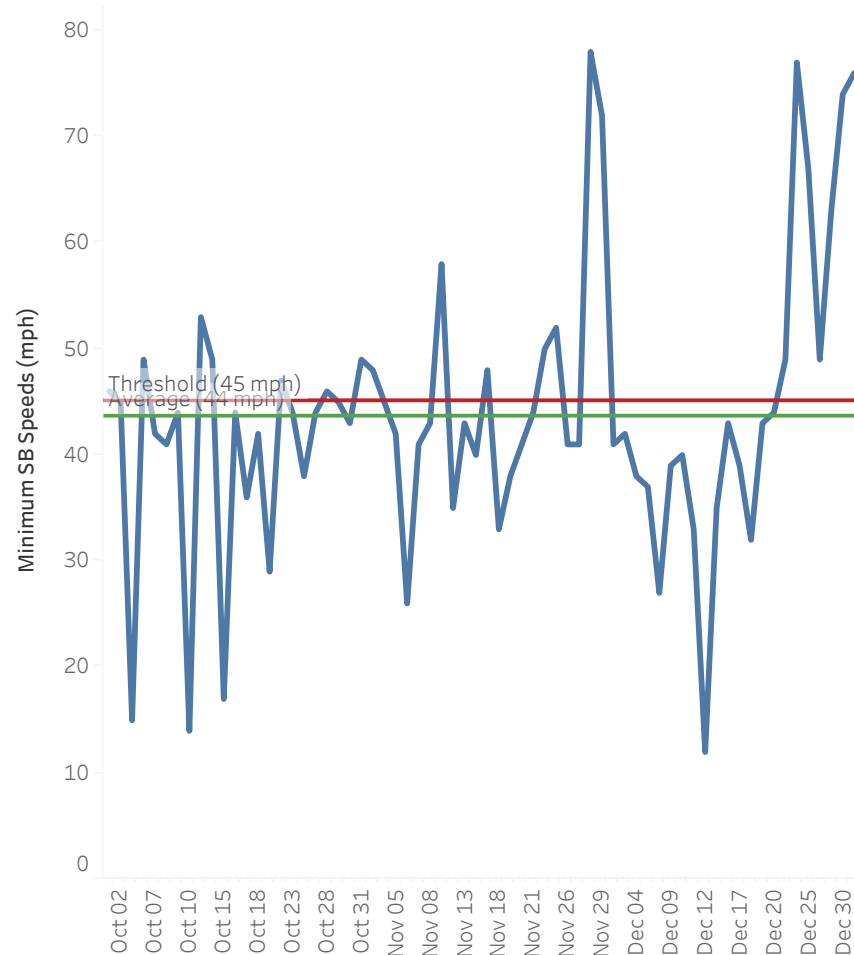
% of days with speeds under 45 mph by duration (minutes per day) between Sycamore Valley Rd. and El Cerro Blvd. NB



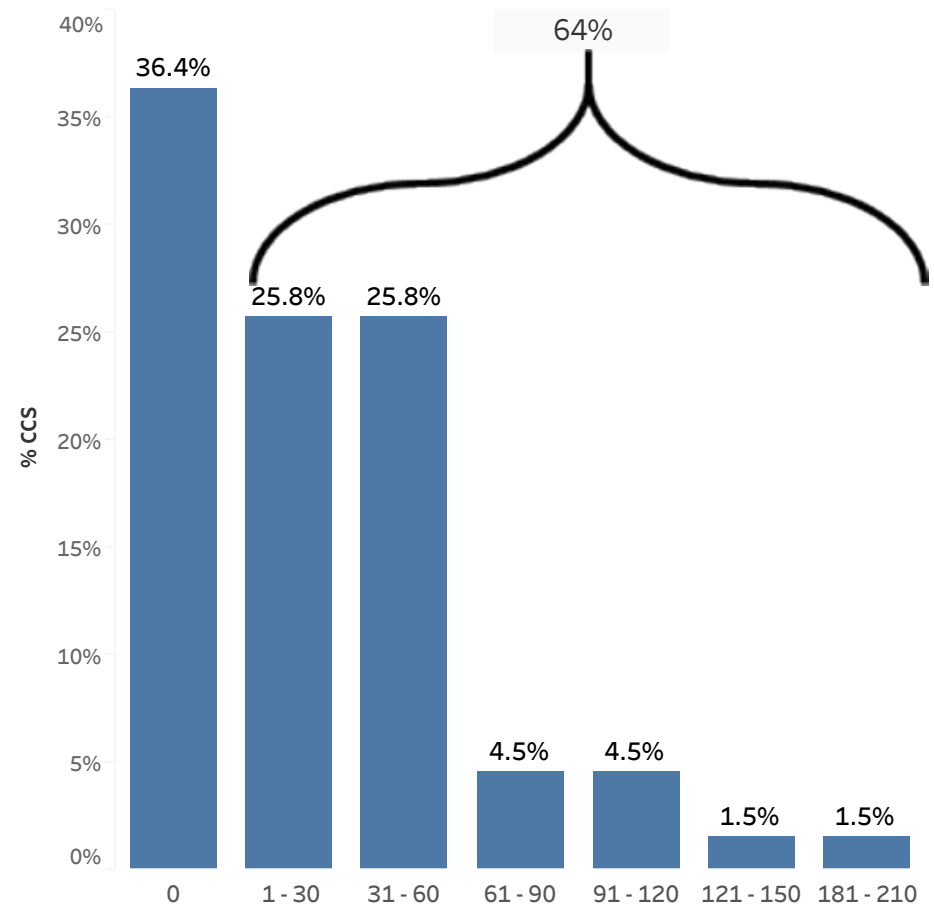
Minutes Per Day

Lowest SB Exp Lane Speed - near Livorna

While corridor-wide express lane speeds average over 60 mph, speeds sometimes drop below 45 mph southbound between Rudgear Rd. and Livorna Rd. The lowest daily speeds at this location averaged 44 mph over the quarter and fell below 45 mph on 64% of the days in the quarter. Speeds fell below 45 mph for 1 to 60 minutes on 51% of the days and for 61 - 120 minutes on 9% of the days. 3% of the days experienced the slow speeds for more than two hours. Toll algorithm adjustments were implemented in October 2019 to improve speeds at this location. More time is needed to see if the adjustments have the intended effect.



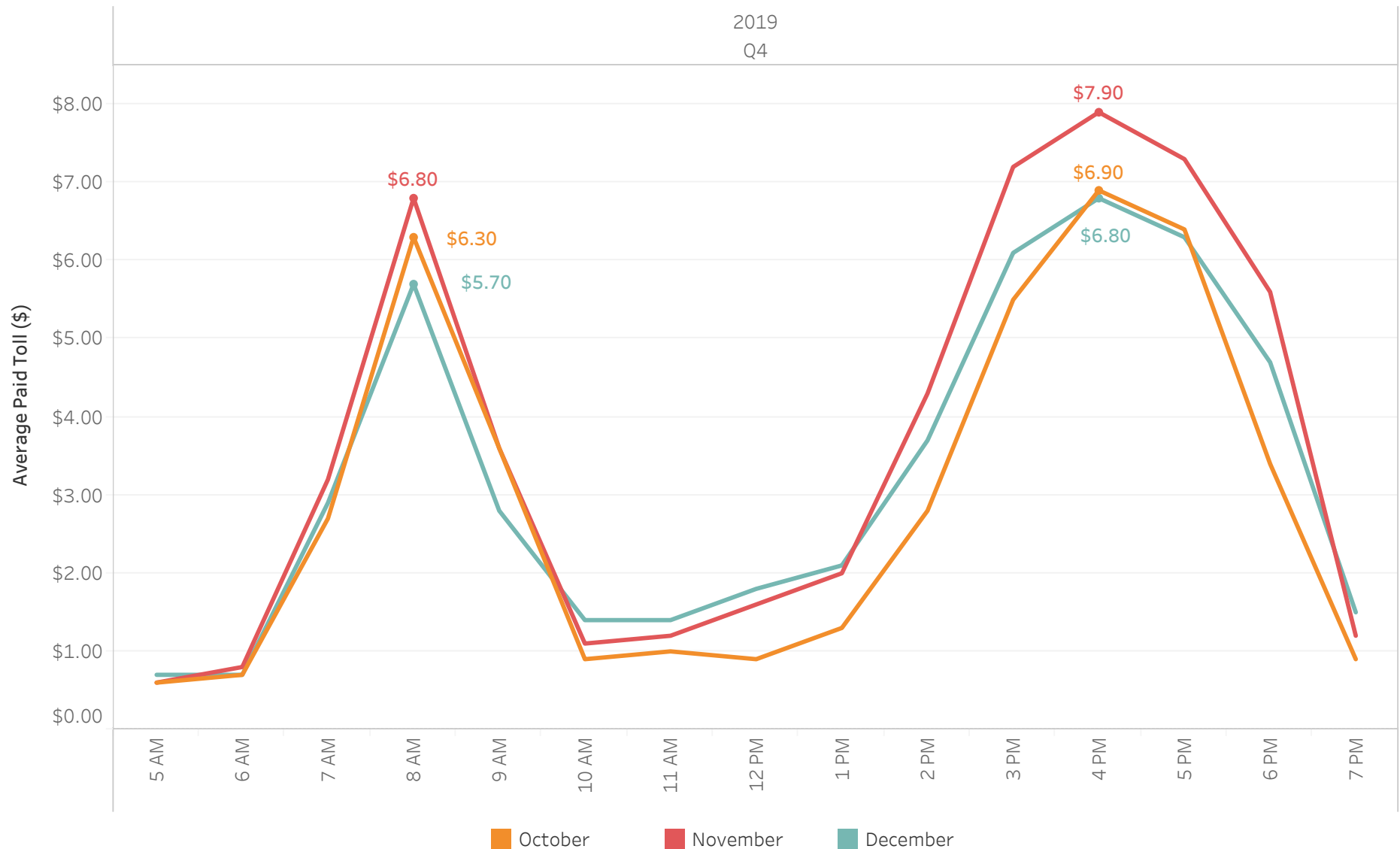
% of days with speeds under 45 mph by duration (minutes per day) between Rudgear Rd. and Livorna Rd. SB



Minutes Per Day

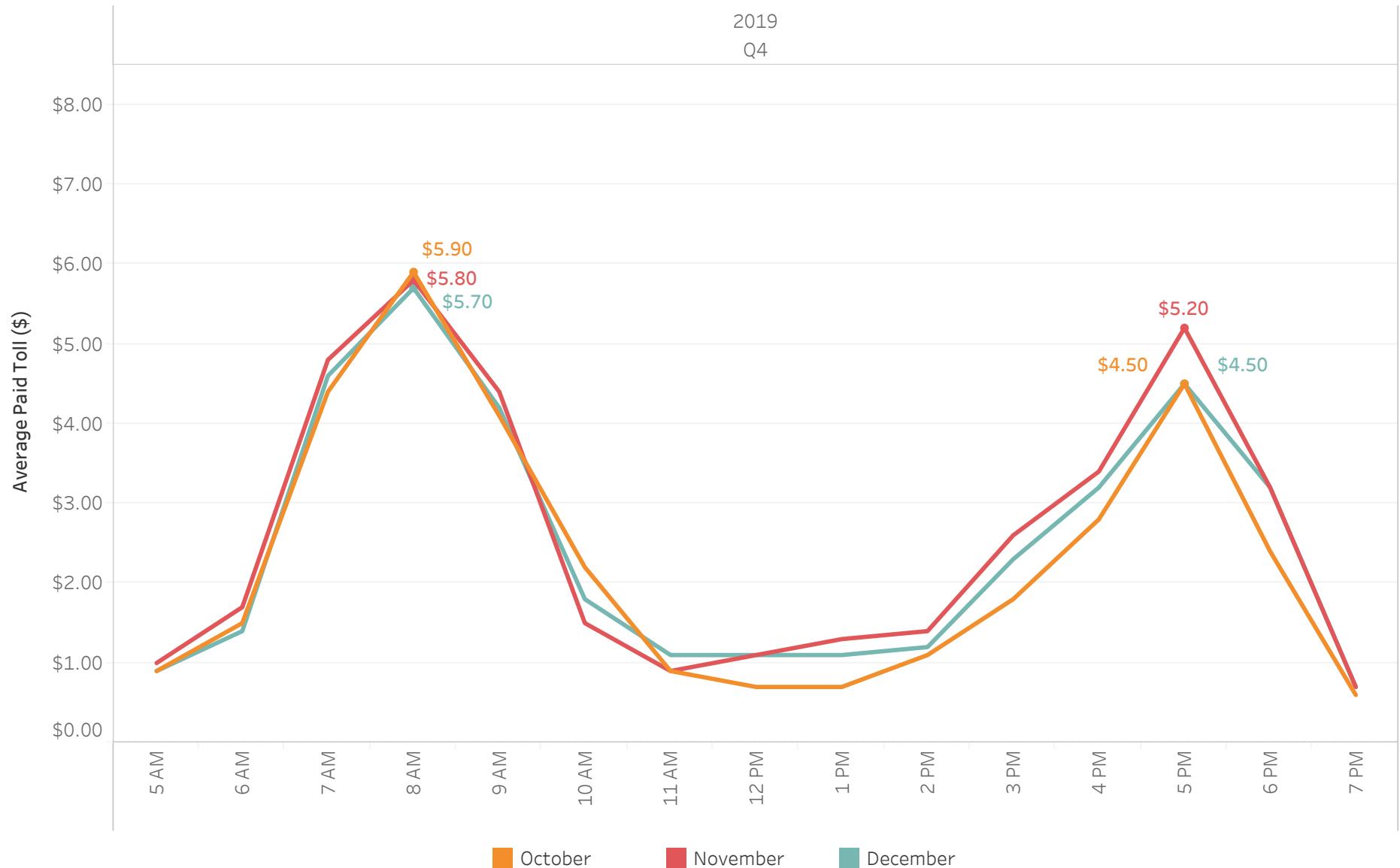
Northbound Tolls

The tolls drivers pay depend on traffic conditions and the distances traveled. In Q4 2019, the average tolls paid northbound peaked at \$7.90 in the 4 to 5 p.m. hour. Mid-day, between 10 a.m. and 2 p.m., when traffic is lighter, northbound drivers paid an average of \$1.80. 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 Q4 2019, the average tolls paid southbound peaked at \$5.90 in the 8 to 9 a.m. hour. Mid-day, between 10 a.m. and 2 p.m., when traffic is lighter, southbound drivers paid an average of \$1.20. The highest posted toll to travel the entire corridor was \$10.

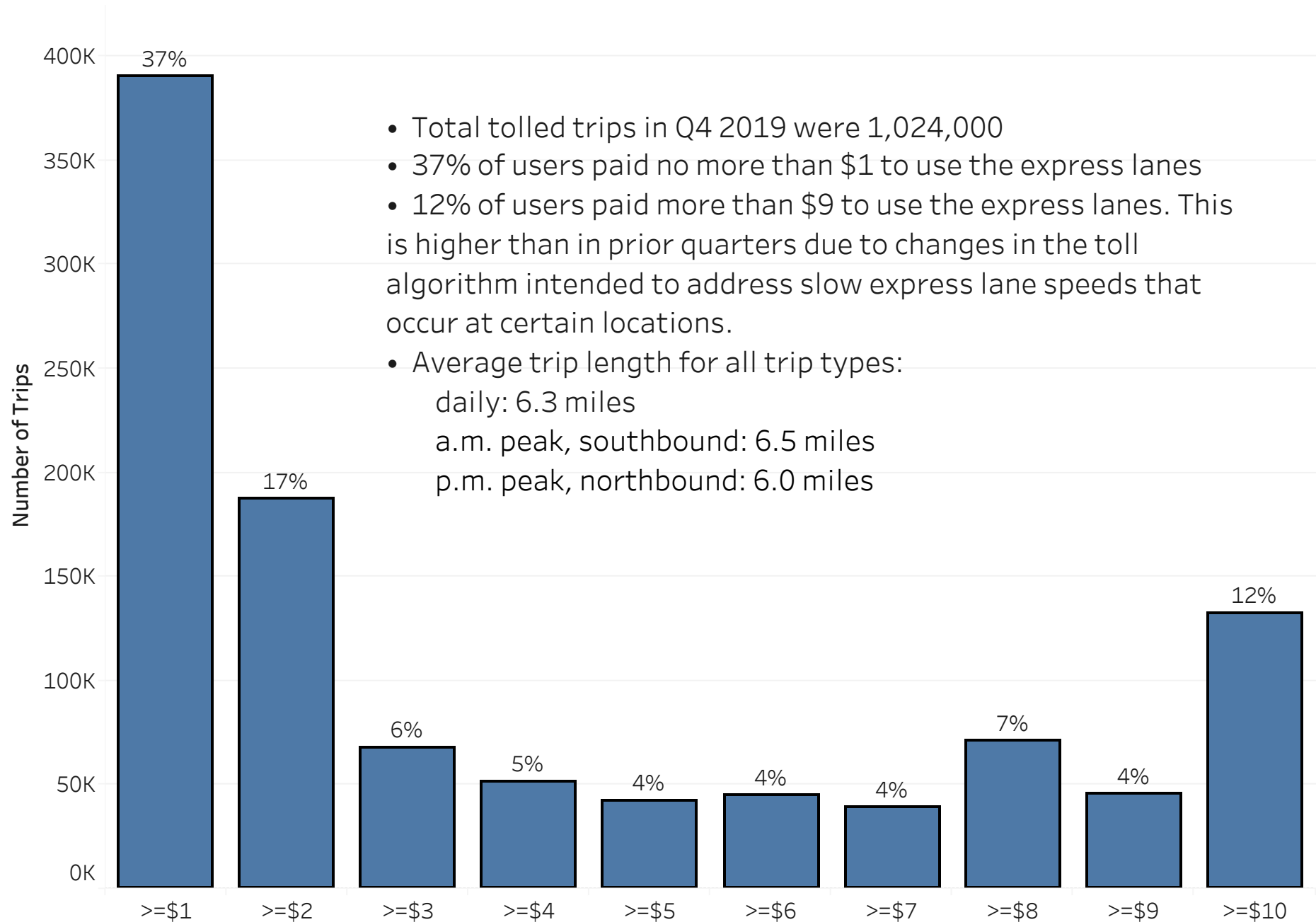


Average Tolls Paid

Northbound, quarterly average tolls paid increased \$2 in the a.m. peak and \$1 in the p.m. peak. Southbound, quarterly average tolls paid increased just \$0.10 in the a.m. peak and \$1.70 in the p.m. peak. The increases were due to changes in the toll algorithm intended to address slowdowns in the express lanes.



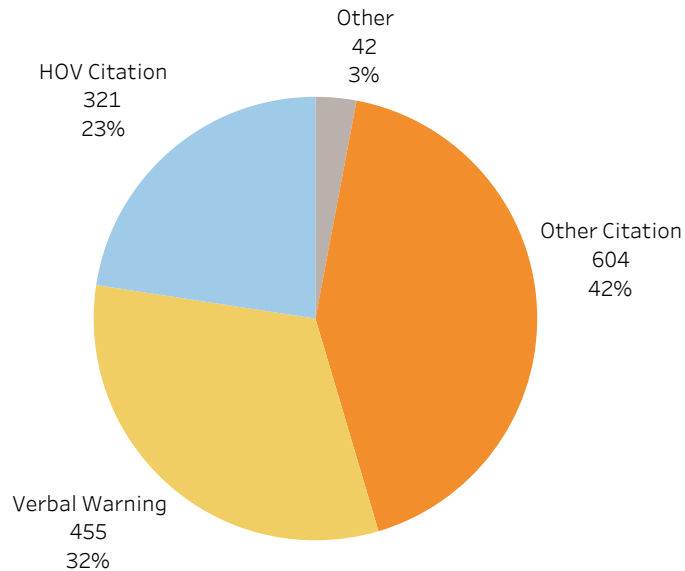
Toll Distribution



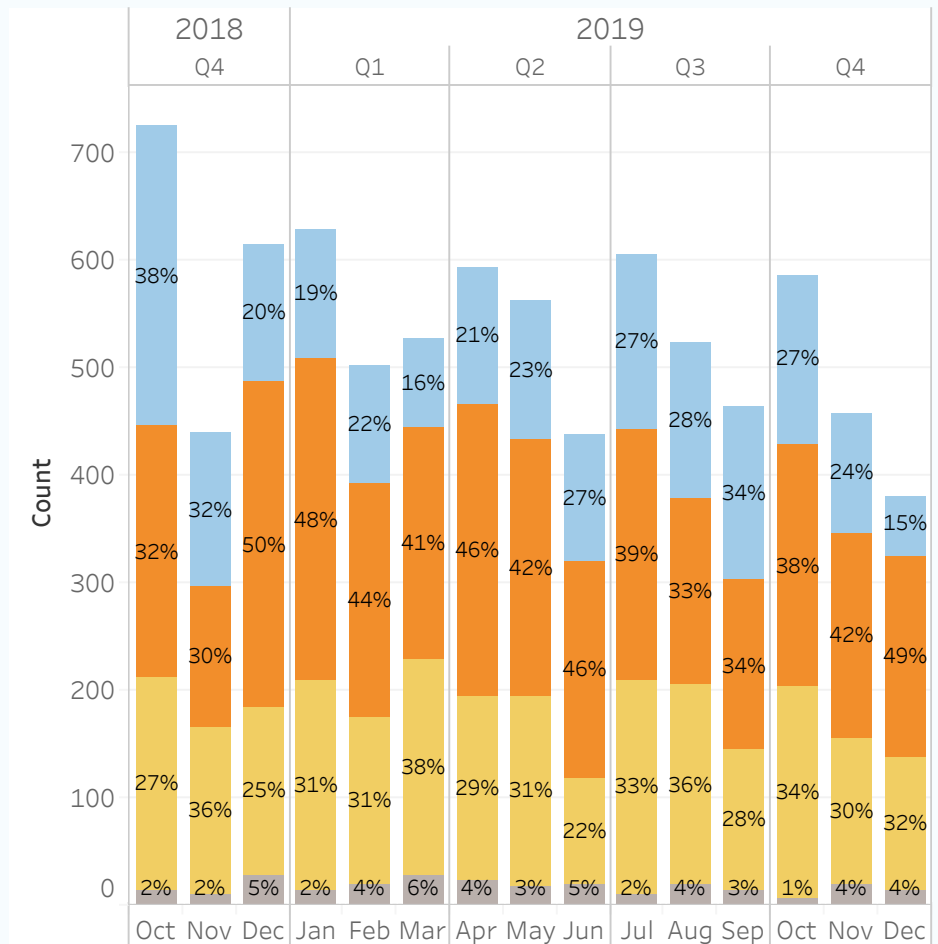
CHP Enforcement

CHP made about 1,400 enforcement contacts in Q4 2019, 23% of which resulted in citations for HOV occupancy violations. CHP enforcement contacts were down 25% compared to Q4 2018 and HOV occupancy citations were down 70%. CHP enforcement hours, however, were only down 4% from Q4 2018 and CHP filled 89% of the enforcement hours requested by BAIFA.

Total Enforcement Contacts
(October - December 2019)



Total Enforcement Contacts



■ HOV Citation
 ■ Other Citation
 ■ Verbal Warning
 ■ Other

For more information, go to: mtc.ca.gov/express-lanes

