



BAY AREA EXPRESS LANES



MTC Express Lanes Quarterly Report 2nd Quarter, April - June, 2019

Submitted: August 2019

BAIFA
BAY AREA INFRASTRUCTURE
FINANCING AUTHORITY



METROPOLITAN
TRANSPORTATION
COMMISSION

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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 second quarter of 2019, April 1 to June 30.

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	2 nd Quarter 2019 Highlights	Current Activities
<p>I-880 Alameda (ALA-880) San Leandro to Milpitas <i>Hegenberger Road/Lewelling Boulevard to Dixon Landing Road</i></p>	<ul style="list-style-type: none"> The toll system integrator continued installation of toll system equipment, electrical and fiber. 	<ul style="list-style-type: none"> Civil construction work is substantially complete as of June 2019. Final pavement striping is planned in spring 2020. 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. Installation is expected to be complete in spring 2020 and will be followed by testing. Staff is ramping up outreach and education activities in advance of lane opening in summer 2020. Monthly construction notices and ramp closure/detour notices continue to be sent. Staff revised the projected opening date from spring 2020 to summer 2020 to reflect delays in toll system installation.
<p>I-680 Contra Costa Southern Segment (CC-680 South) Walnut Creek to San Ramon <i>Livorna Road/Rudgear Road to Alcosta Boulevard</i></p>	<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.
<p>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></p>	<ul style="list-style-type: none"> In May 2019, the backhaul contractor successfully rerouted the backhaul fiber in Walnut Creek to allow for lane widening, which the civil contractor began soon after. In June 2019, the civil contractor completed construction of the new concrete median barrier on I-680 between the Benicia-Martinez Bridge and SR-242. The civil contractor also completed removal of an existing sound wall from S. Main Undercrossing to Crest Avenue. 	<ul style="list-style-type: none"> The civil contractor will continue construction of two retaining walls in Walnut Creek. Also, the civil contractor will begin demolition of the existing concrete barrier between SR-24 and Treat Boulevard. The backhaul contractor will install fiber laterals from the new fiber reroute segment for Caltrans, with anticipated completion by the fourth quarter of 2019. The toll system integrator completed their submittal package for encroachment permits from Caltrans. Caltrans will begin its review of the integrator’s design package and then issue an encroachment permit (expected December 2019).

Project Development & Construction	2 nd Quarter 2019 Highlights	Current Activities
<p>I-80 Solano (SOL-80) Fairfield to Vacaville <i>Red Top Road to I-505</i></p>	<ul style="list-style-type: none"> See 'Current Activities' 	<ul style="list-style-type: none"> In July 2019, Caltrans, MTC and STA staff learned that the project did not receive an INFRA grant. The project is shelf-ready should construction funds become available. MTC and STA staff continue to explore other potential funding sources. MTC staff updated the opening date to 2023 at the earliest given the lack of funding.
<p>Program Management</p>	<ul style="list-style-type: none"> In June 2019, BAIFA approved the FY 2019-20 I-680 Contra Costa Express Lanes operating budget and the FY 2019-20 capital budget for all BAIFA express lanes. In June 2019, BAIFA executed a cooperative agreement with the San Mateo County Express Lanes Joint Powers Authority to implement the toll system and operate the San Mateo 101 Express Lanes. BAIFA approved \$3.0 million to fund toll system design and about six months of initial project management work. 	<ul style="list-style-type: none"> In partnership with other express lane operators, staff is developing a 10-year strategic plan to help prioritize express lanes funding and delivery in the region. This work is being coordinated with upcoming competitive funding opportunities and Plan Bay Area 2050. Staff is implementing the I-880 Stakeholder and Customer Outreach Plan by meeting with stakeholder agencies to discuss project progress and future lane operations and coordinating with partners on messaging and outreach strategies. Staff is drafting proposed changes to BAIFA's Toll Ordinance and planning a process to solicit public comment. The changes mostly focus on tolling for BAIFA's new I-880 Express Lanes, as well as clean air vehicle tolling. BAIFA will be asked to approve the updated Toll Ordinance in early 2020.
<p>Toll System</p>	<ul style="list-style-type: none"> The I-680 Southern Segment Operations Test concluded in April 2019. The Operations & Maintenance (O&M) phase, which includes a one-year warranty period, began in May 2019. 	<ul style="list-style-type: none"> The toll system integrator and the FasTrak[®] back office continue to test an updated regional interface control document to enable the two systems to communicate and share 6C compliant data. The I-680 Southern Segment Operations Test revealed inefficiencies in how the toll system builds tolled trips. The toll system integrator will build an image review enhancement to improve data quality and streamline trip building.

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.

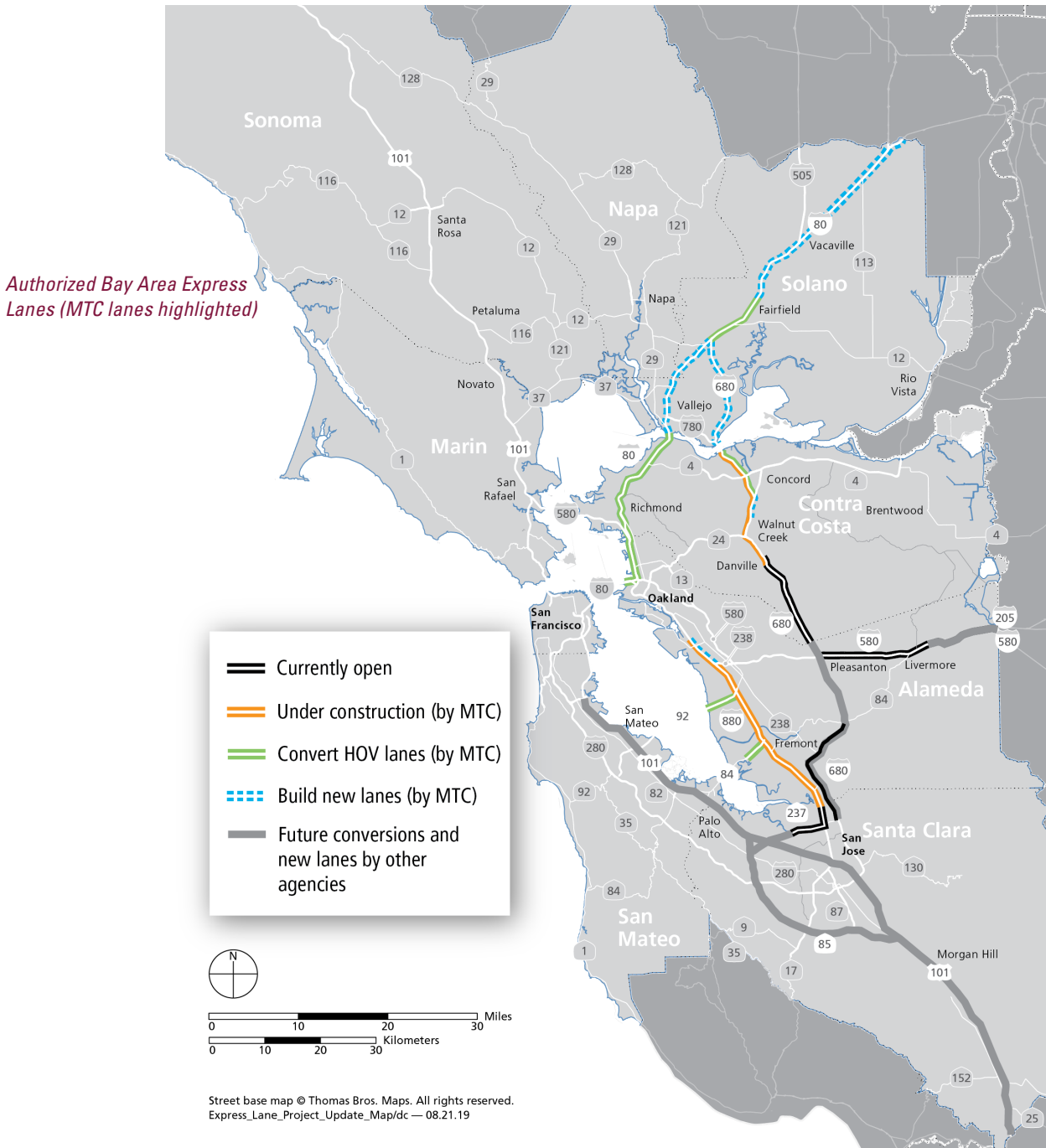


Map of Bay Area Express Lane Network

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	Project completed 2017		
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) programwide 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. The expended-as-of amounts shown represent the amount of BATA Express Lane funds expended through May 31, 2019; June 2019 expended-as-of amounts will be included once the 2019 fiscal year is closed out. 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 5/31/19		
NEAR-TERM CONVERSIONS AND GAP CLOSURE OPPORTUNITY PROJECTS					<i>Costs shown in millions of escalated dollars</i>				
I-880 Alameda	139.1	139.1			135.5	139.1	97.6	80%	●
I-680 Contra Costa Southern Segment	54.0	54.0			55.6	54.0	52.3	99%	●
I-680 Contra Costa Northern Segment Southbound ⁽⁷⁾	127.4	127.4	19.4	54.3	51.3	53.6	8.6	35%	●
I-80 Solano	228.2	33.3	15.2		19.0	18.1	11.6	20%	●
Centralized Toll System	32.4	32.4			33.6	32.4	20.6	85%	●
Program Planning, Coordination & Management	28.4	28.4			28.4	28.4	20.0	70%	●
Program Contingency	6.1	6.1			5.1	2.9			●
Capitalized Start-up O&M	16.0	16.0			16.0	16.0	4.8		●
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	216.2	68%	

⁽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. Two schedule changes are being reported for the second quarter of 2019, although official change notifications have not been completed: the I-880 express lanes are projected to open in summer 2020 instead of spring, and the I-80 Solano express lanes are projected to open at the end of 2023 instead of 2021. The reasons for delay are explained in the respective project summaries. There were no changes to the MTC Express Lanes Program budget in the second 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 June 30, 2019, the risk exposure stands at \$4.9 million, which is lower than the \$6.2 million reported last quarter. This reduction is due to the elimination of risk related to the relocation of backhaul fiber and its potential impact on operations testing for the I-680 Northern Segment as well as the effective management of risk related to the potential relocation of a pricing sign in a restricted access portion of the I-880 express lanes.

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 \$4.9 million were 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 cost risk relating to the I-880 pricing sign was retired as the team decided to update the toll system design to accommodate the sign location. The cost for this change will be covered in contract contingencies and will not impact the program contingency.
- Another risk to cost relates to Caltrans requiring BAIFA and other express lanes operators to change the agreed-upon approach to toll segment pricing, affecting the toll system, pricing signs and public information. MTC Executive staff is working with Caltrans Executive staff to resolve this issue.

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

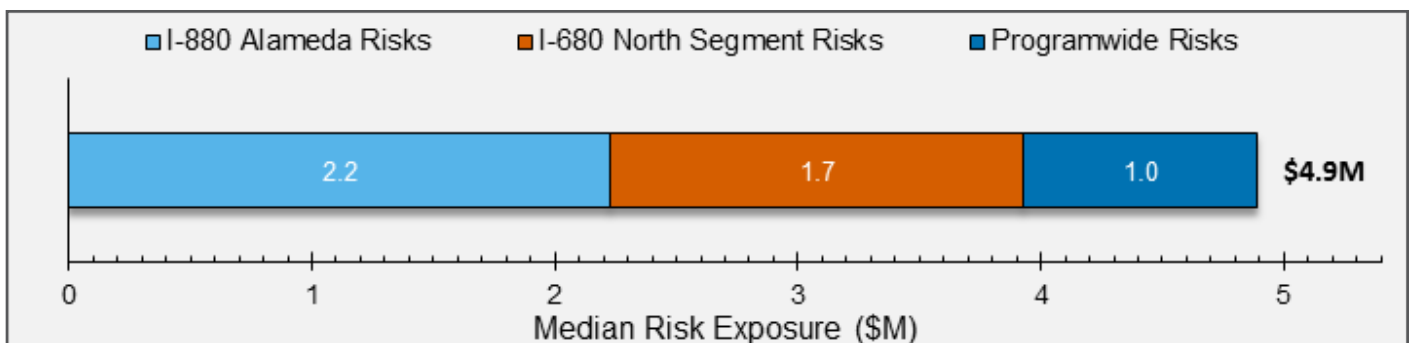


Chart #1 shows the contribution of each project’s risks toward the total program risk exposure. Risk exposure is calculated using Monte Carlo simulation.

- The most significant risk affecting 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. MTC staff continues to work with the toll system integrator to mitigate schedule delays, however, at this time, the likely open-to-traffic date has changed spring 2020 to summer 2020.
- 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.
- Additional schedule risks could result from delays in hook-ups to the AT&T communication network for the backhaul, delays in installation of power drops by PG&E, delays in handoff of backhaul infrastructure affecting completion of network integration, and late availability of lane closures due to a Caltrans paving project and the toll system integrator needing access to the same roadway. Staff is monitoring these risks and tracking schedules to ensure that the toll system integrator is given time to install equipment.

I-680 Contra Costa Northern Segment Southbound

- The most significant risk that could affect schedule relates to a Caltrans-managed safety project in the corridor. Coordination with the project may delay completion of express lanes work and impact the open-to-traffic date. Caltrans has committed to work with MTC when scheduling their work on the safety project. Additional schedule risks are being monitored, including potential delay to civil contract delivery caused by unanticipated field conditions, contract specifications, weather and PG&E utility connections.
- Risks that could affect cost relate to the potential for change in signage requirements by Caltrans that may apply to express lanes, additional work resulting from unanticipated field conditions encountered during construction, and conflicts between express lane or backhaul equipment and new Caltrans projects. MTC staff continues to coordinate with Caltrans to minimize cost impacts as well as coordinate with the Walnut Creek City Engineer to inform City Council members and residents of the necessity of this work.
- Additional schedule and cost risks could arise due to the toll system integrator working in tight sequence on I-880, I-680 North SB and US-101. Any schedule changes to one corridor, whether caused by the integrator or not, could affect the schedules of other corridors. As a result, there is a risk that the toll system integrator may not be available to work on I-680 until the completion of I-880. MTC staff is tracking I-880 delays and creating a contingency plan to reduce impacts.

Programwide Risks

- Los Angeles Metro prevailed in a patent infringement lawsuit brought by a patent holder for a multi-occupant switchable tag and a toll system that reads such tags. While there is a chance the patent holder could appeal and overturn the decision, staff considers it unlikely and no longer plans to track this risk.

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

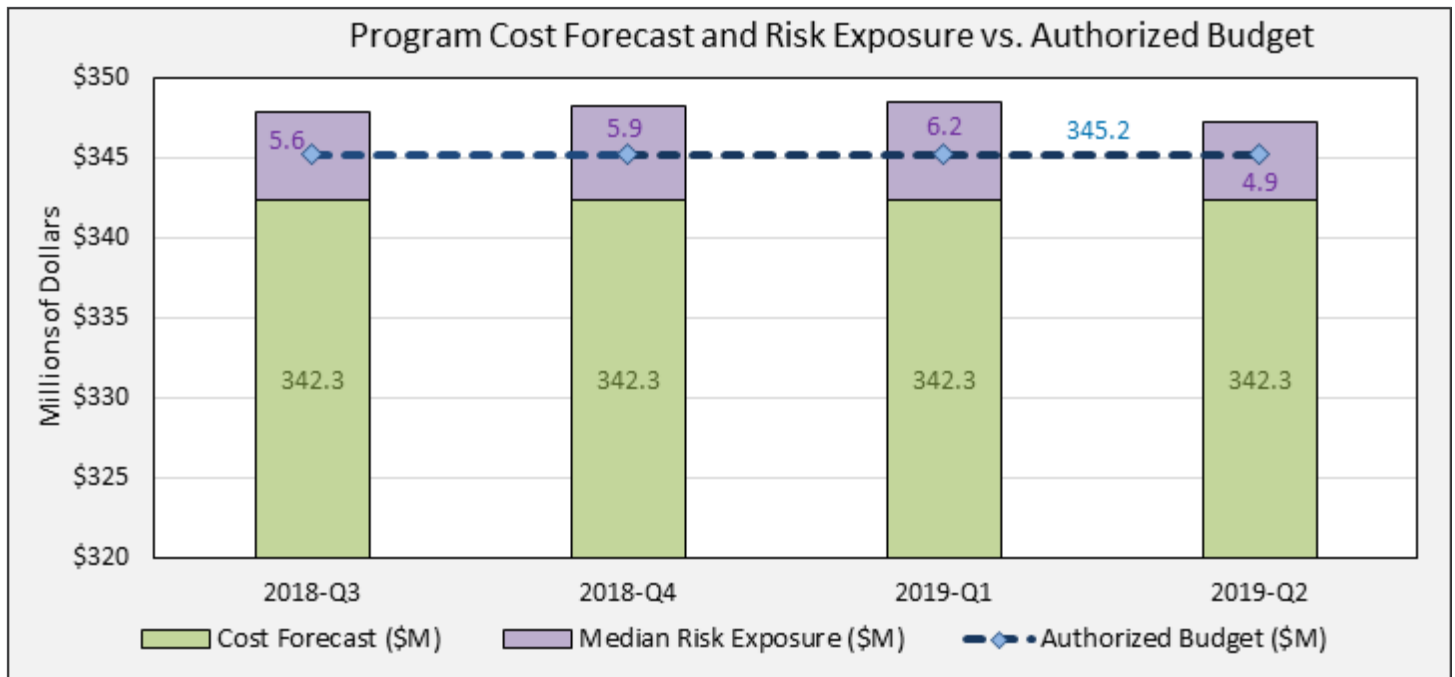


Chart #2 shows the program cost forecast and risk exposure as compared to the authorized program budget.

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 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 June 2019, BAIFA approved the FY 19-20 I-680 Contra Costa Express Lanes operating budget and the FY 19-20 capital budget for all BAIFA express lanes.
- In June 2019, BAIFA executed a cooperative agreement with the San Mateo County Express Lanes Joint Powers Authority to implement the toll system and operate the San Mateo 101 Express Lanes. BAIFA approved \$3.0 million to fund toll system design and about six months of initial project management work.

Current Program Management Activities

- In partnership with other express lane operators, staff is developing a 10-year 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.
- Staff is implementing the I-880 Stakeholder and Customer Outreach Plan by meeting with stakeholder agencies to discuss project progress and future lane operations and coordinating with partners on messaging and outreach strategies.
- Staff is drafting proposed changes to BAIFA's Toll Ordinance and planning a process to solicit public comment. The changes mostly focus on tolling for BAIFA's new I-880 Express Lanes, which open summer 2020, as well as clean air vehicle tolling. BAIFA will be asked to approve the updated Toll Ordinance in early 2020.

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.

Current Toll System Activities

- The toll system integrator and the FasTrak® back office continue to test an updated regional interface control document to enable the two systems to communicate and share 6C compliant data. The goals are for the toll system to read 6C toll tags, create trips and send them to the back office for processing by fall 2019 and to allow for discount tolling of clean air vehicles by the launch of I-880.
- The I-680 Southern Segment Operations Test revealed inefficiencies in how the toll system builds tolled trips. Staff determined these inefficiencies are too costly and risky to not address before I-880 opens. As a result, the toll system integrator will build an image review enhancement before I-880 opens, at no cost to BAIFA, to improve data quality and streamline trip building. There will be a cost per image reviewed, but the cost structure incentivizes less image review. The average cost per image is estimated to be 7 cents.



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

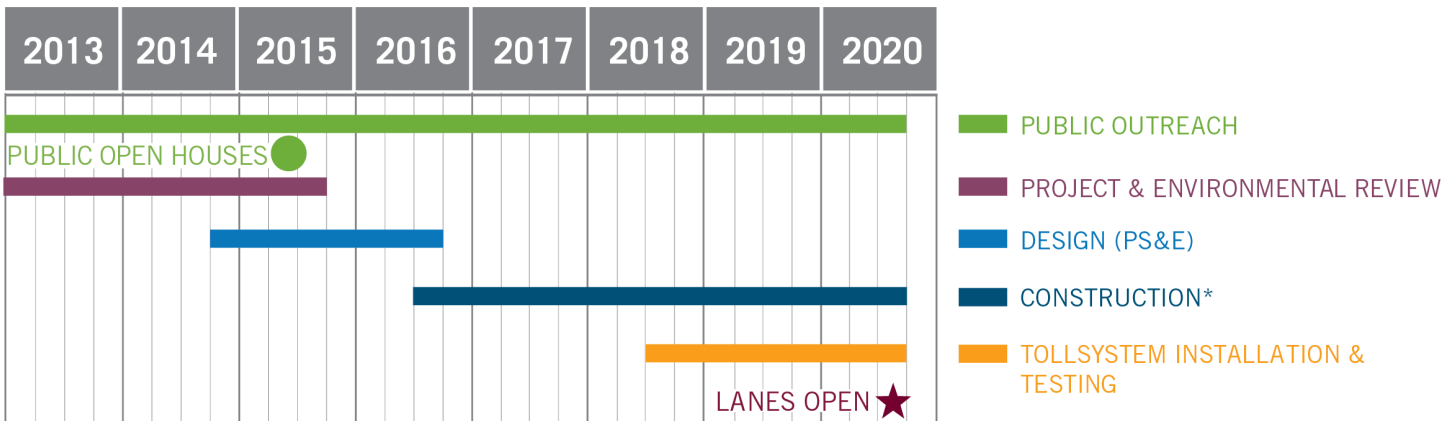
- Public open house was held in March 2015.
- Preliminary engineering report and environmental document were completed in October 2016.
- The express lanes civil contractor began construction in September 2017.
- Caltrans approved the toll system design and issued the encroachment permit for the toll 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.
- In March 2019, the civil contractor successfully removed two existing overhead sign bridge structures at the SR-92 interchange and installed two new ones.
- 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); and corridor elected officials (2017).



Current Project Activities

- Civil construction work is substantially complete as of June 2019. Remaining work includes pavement widening near Hacienda Avenue and staircase construction for a Caltrans Pump House. The civil contractor will also install fiber laterals to connect Caltrans’ freeway management equipment to the communications backhaul from fall 2019 through spring 2020. All PG&E service connections are installed, with the exception of one at Marina Boulevard. Final pavement striping is planned in spring 2020.
- 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 Rd. to SR-84, which is 50% complete, and from SR-84 to Hegenberger Road, which is 10% 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 ramping up outreach and education activities in advance of lane opening in 2020. MTC staff is meeting with city staff in the I-880 corridor to review proposed operating policies. MTC staff is planning a process for BAIFA to amend its toll ordinance to include I-880, including opportunity for public comment. Staff continues to draft customer education materials about how the lanes will work for a public campaign. A separate effort to form 3-person carpools in the corridor will be spearheaded by MTC’s 511 Carpool Program. Monthly construction notices and ramp closure/detour notices continue to be sent.
- Staff revised the projected opening date from spring 2020 to summer 2020 to reflect delays in toll system installation due largely to weather, a shortage of qualified contractor staff, and sequencing of work relative to civil construction activities.

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 5/31/19	
139.1	139.1			135.5	139.1	97.6	80%

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.



Installing toll system equipment including numeric enforcement beacons on I-880 gantries



Fully installed pricing sign on I-880 at Whipple Road



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

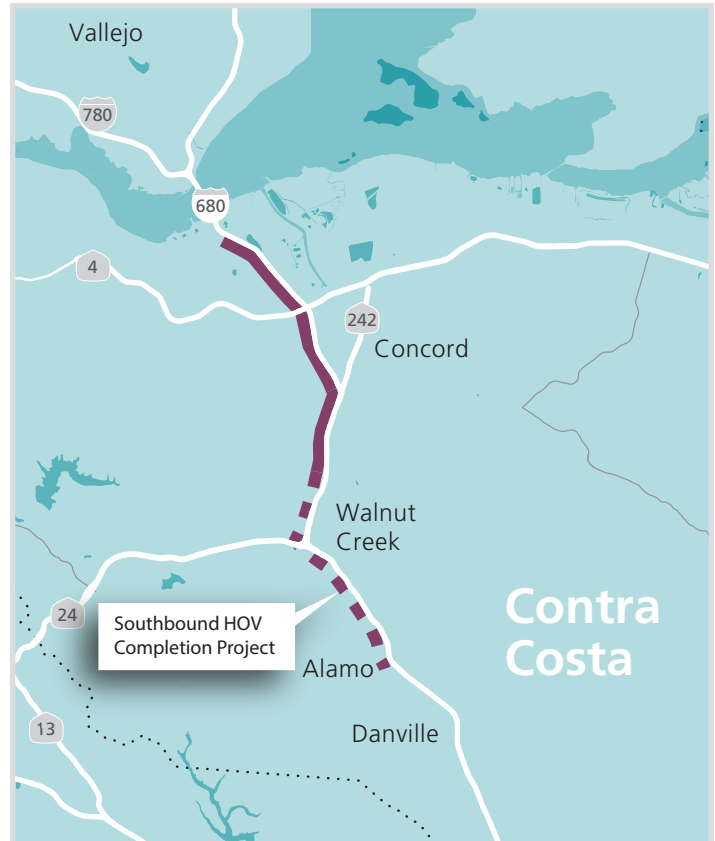
Project Description

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

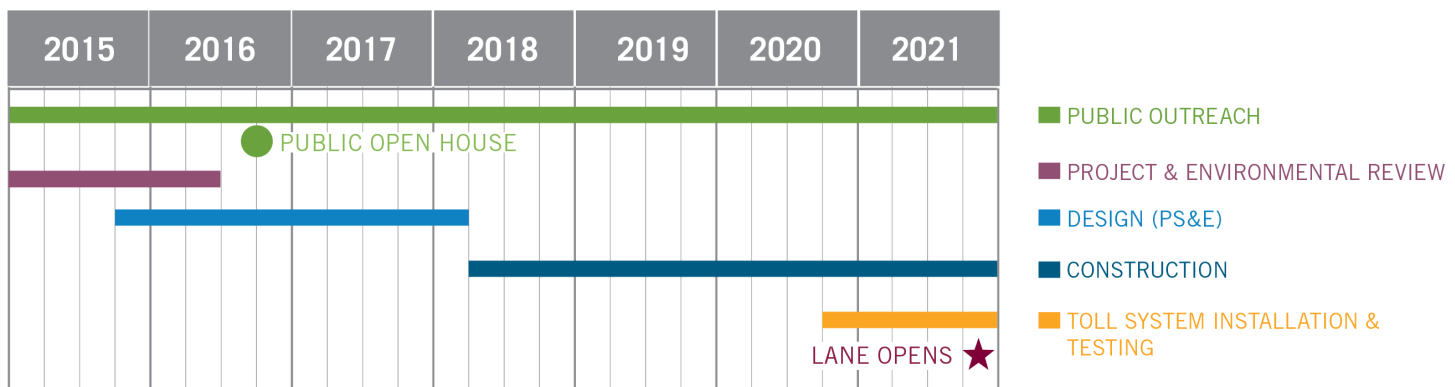
- Caltrans signed the environmental document in December 2016 and approved the Project Report in August 2017. Caltrans completed a revalidation in September 2017.
- A contract to remove trees along southbound I-680 in Walnut Creek between South Main Street and Livorna Road was awarded in October 2017, 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 the I-680 Northern Segment.
- 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. The civil contractor began lane widening soon after.
- In June 2019, the civil contractor completed construction of the new concrete median barrier on I-680 between the Benicia-Martinez Bridge and SR-242. Temporary railing was removed and traffic was returned to its original configuration. The civil contractor also completed removal of an existing sound wall from S. Main Undercrossing to Crest Avenue.
- 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.



Current Project Activities

- The civil contractor will continue construction of a retaining wall from S. Main Undercrossing to Crest Avenue and installation of a foundation for a retaining wall south of Rudgear Road. The civil contractor will continue placing temporary railing in the median between SR-24 and Treat Boulevard, and when in place, begin demolition of the existing concrete barrier.
- The replacement planting design is being updated based on comments received from Caltrans. Final design is expected to be complete in September 2019.
- The backhaul contractor will install fiber laterals from the new fiber reroute segment for Caltrans, with anticipated completion by the fourth quarter of 2019.
- The toll system integrator completed their submittal package for encroachment permits from Caltrans. Caltrans will begin its review of the integrator’s design package and then issue.

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 5/31/19	
127.4	127.4	19.4	54.3	51.3	53.6	8.6	35%

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.



Highway widening on I-680 southbound in Walnut Creek



Concrete median barrier pour on I-680 in Martinez



Retaining wall removal at South Main St. 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.

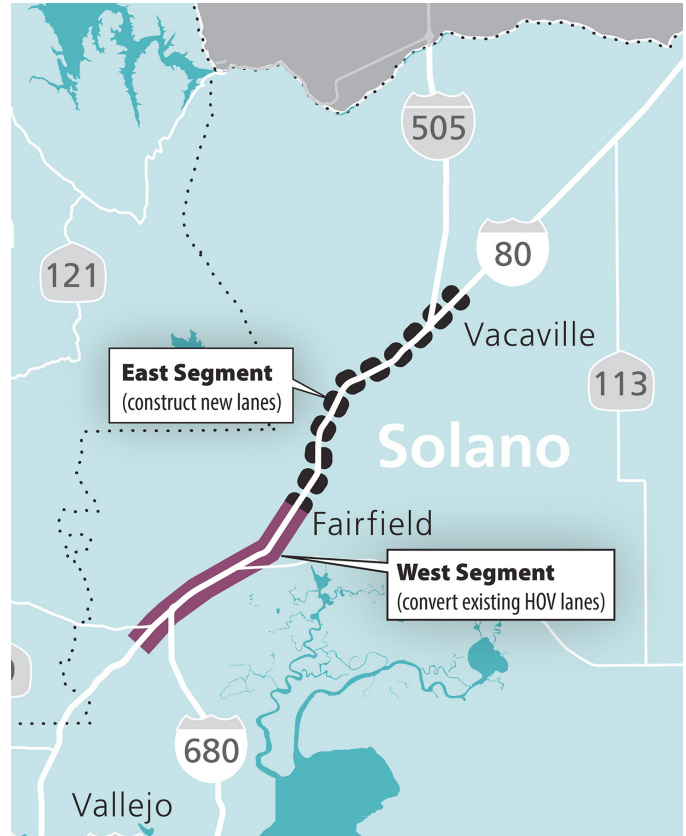
The project will also construct new eastbound and westbound lanes between Air Base Parkway and I-505 in Vacaville. In this section, the highway will be widened along with the installation of express lane striping, signage and equipment. The project will result in 36 miles of express lanes on I-80 in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

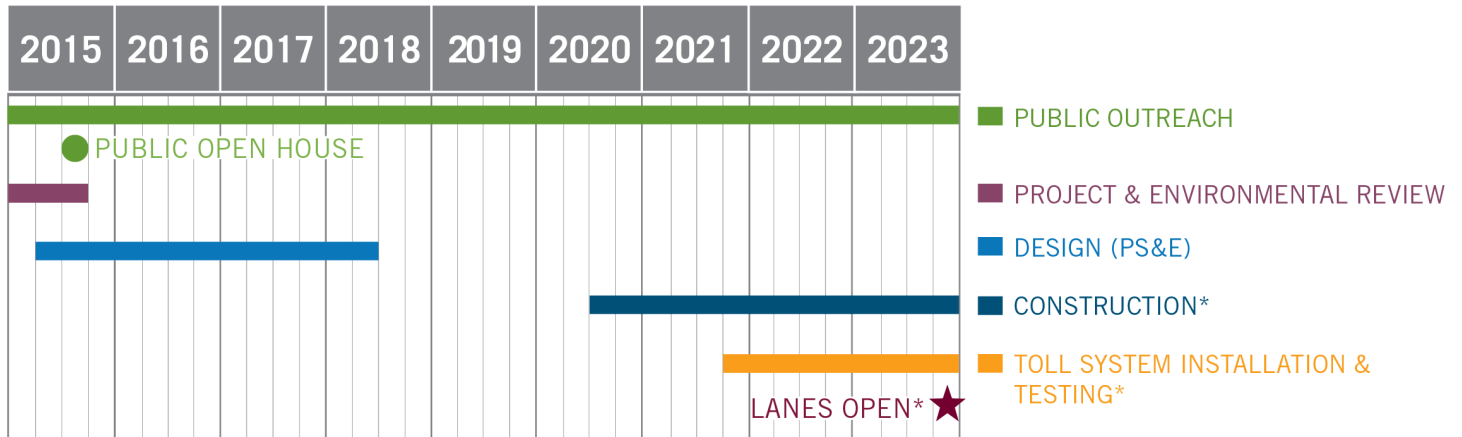
- A public open house was held in August 2015.
- The preliminary engineering report and environmental document were completed in December 2015.
- The final design document was approved by Caltrans in March 2018.
- The project reached the Ready-to-List milestone in April 2018.
- Caltrans submitted this project for a Federal INFRA grant in March 2019.



Current Project Activities

- In July 2019, Caltrans, MTC and STA staff learned that the project did not receive an INFRA grant.
- The project is shelf-ready should construction funds become available.
- MTC and STA staff continue to explore other potential funding sources.
- MTC staff updated the opening date to 2023 at the earliest given the lack of funding.

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 5/31/19	
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.

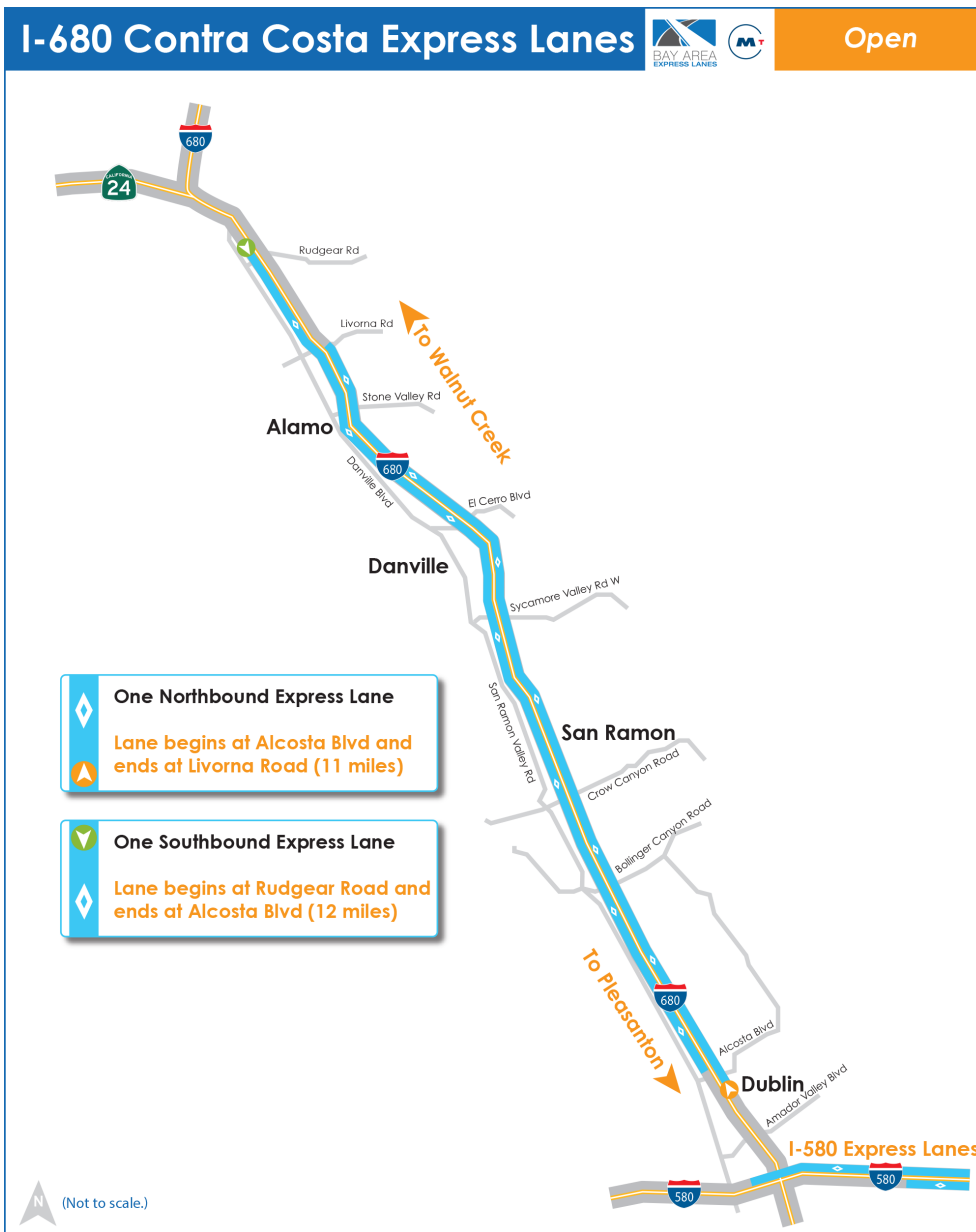
IV. OPERATIONS

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.



expresslanes.511.org • mtc.ca.gov/express-lanes

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

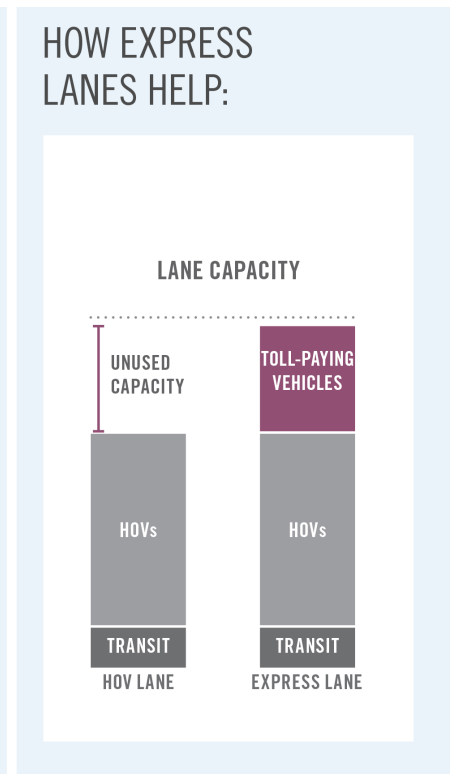
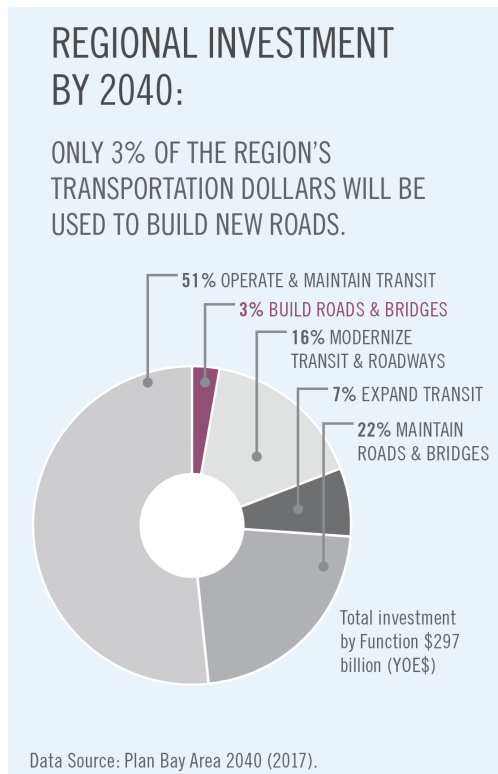
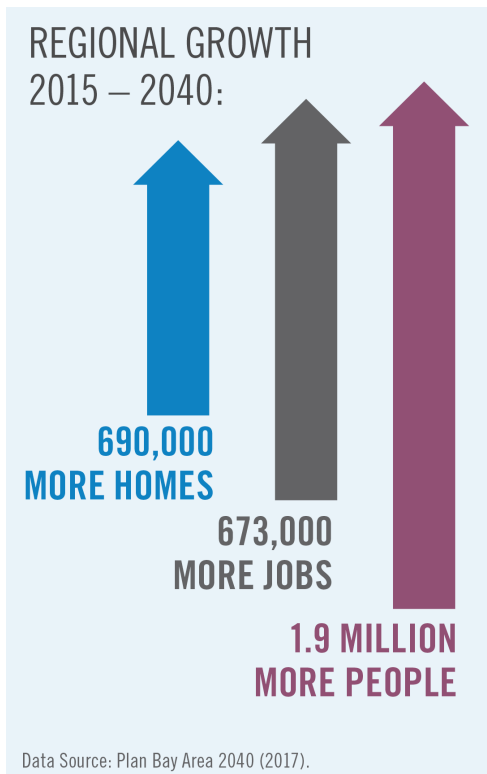
APPENDIX A

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,

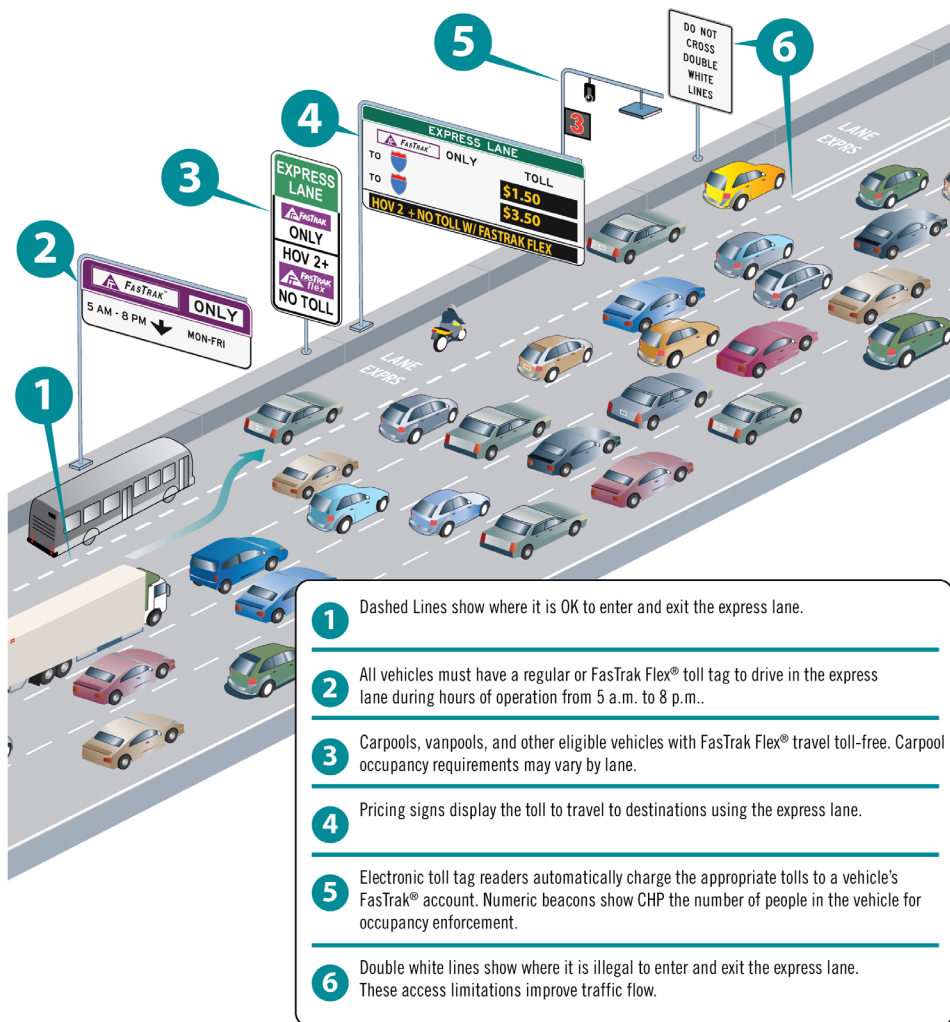
B) improving operations in existing HOV lanes through better carpool enforcement and strategies to prevent lane slowdowns, and C) filling gaps in the HOV lane system to encourage more carpooling.



2. How Express Lanes Work

MTC Express Lanes are free to carpoolers, vanpoolers, motorcycles, eligible clean air vehicles and transit buses. Solo drivers can choose to pay tolls to use the lanes. Tolls for solo drivers are collected electronically via FasTrak®, as on Bay Area toll bridges. Overhead electronic pricing signs display the current toll rates, which increase as traffic congestion increases and decrease as traffic congestion decreases.

Carpools, qualifying clean-air vehicles and other toll-exempt vehicles must use a FasTrak Flex® toll tag set to “2” or “3+” to travel toll-free. Solo drivers pay to use the lanes with either a standard FasTrak® toll tag or a FasTrak Flex® toll tag set to “1.” Drivers should move the switch before driving.



The figure to the left explains how to use Bay Area Express Lanes. MTC Express Lanes will be mostly “open” access, 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

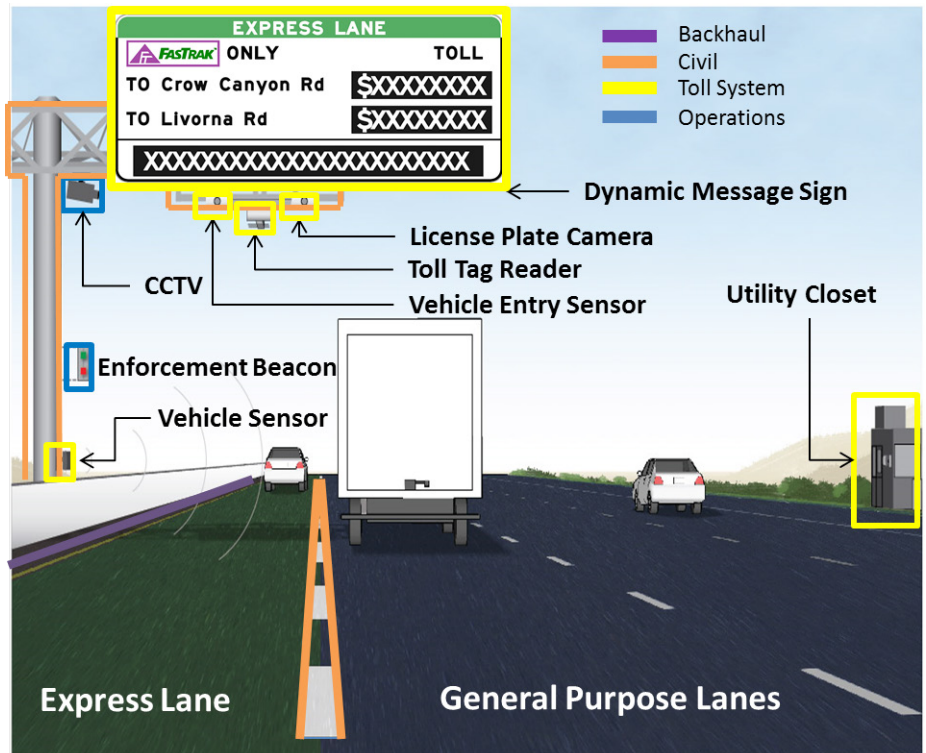
The toll system consists of two components, the in-lane system and the back-end "host" system. The lane system consists of all the equipment on the highway needed to operate the toll system including toll tag readers, cameras and vehicle detection. The host system serves as the brain of the toll system,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

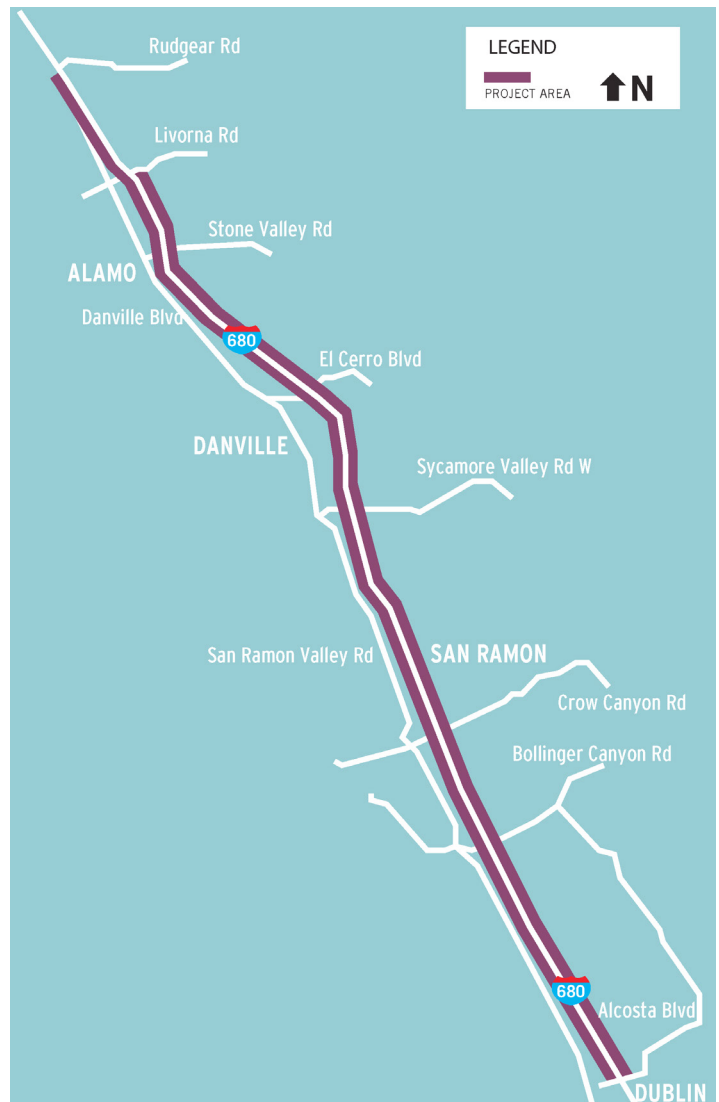
Project Description

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.

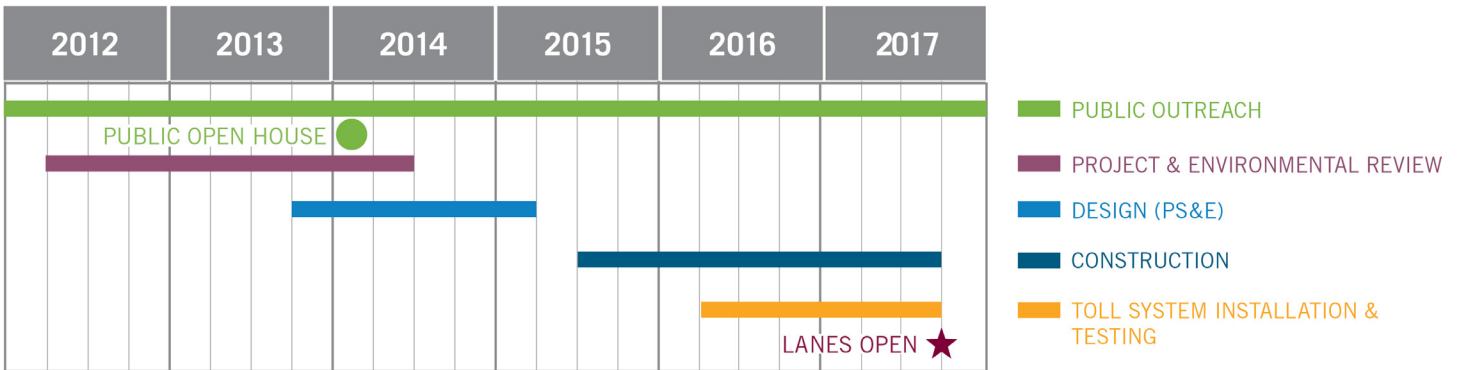


Current Project Activities

- 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.



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%

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

Costs shown in millions of escalated dollars.

(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 2nd Quarter 2019 - April - June



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



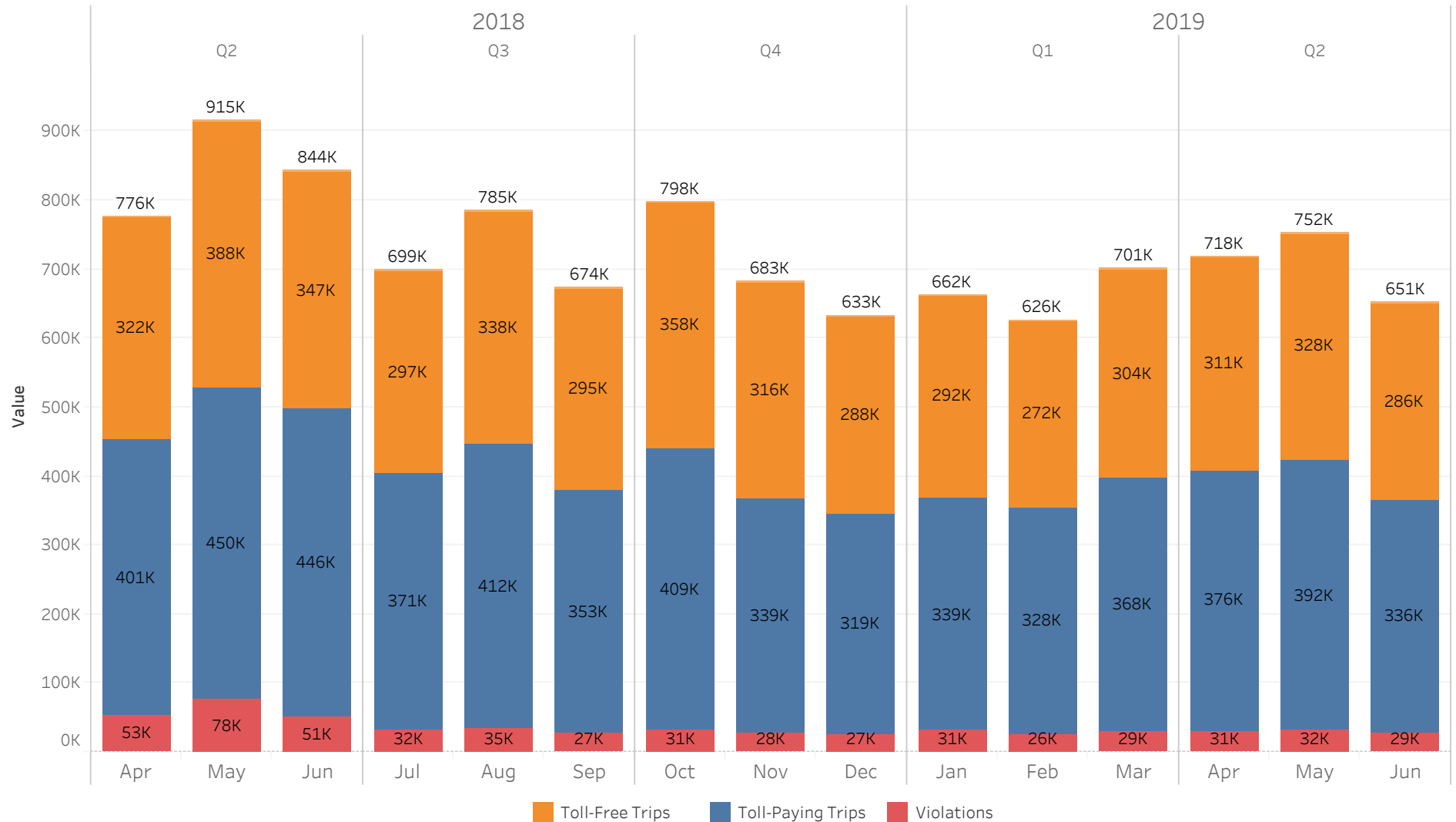
- Drivers made 2 million trips in the express lanes in Q2 2019; a 14% decline from 2.4 million trips in Q2 2018 but a 9% increase over Q1 2019. Average daily express lane trips were 32,000 compared to 36,000 in Q2 2018 and 30,000 in Q1 2019.
- Paid trips followed a similar trend; down 15% from Q2 2018, a slightly larger decrease than the overall year-over-year decline in trips, and up 7% from Q1 2019. The year-over-year decline is likely due to toll algorithm adjustments intended to encourage better express lanes speeds.
- Peak period express lane speeds were 10 to 11 miles per hour faster than the general purpose lanes, and both express lane and general purpose lane speeds were generally higher compared to Q2 2018.
- 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 48% southbound.
- In Q2 2019, 41% of trips were by vehicles declared as toll-free. This percentage has been settling in around the 40% mark. Toll violators, which are vehicles without FasTrak® accounts, represented just 4 to 5% of all trips.
- In the quarter, monthly average tolls paid ranged from \$4.60 to \$5.40 in the southbound a.m. peak hour and \$5.60 to \$6.50 in the northbound p.m. peak hour. Mid-day (between 10 a.m. and 3 p.m.), the average toll paid was \$1.90 northbound and \$0.90 southbound.



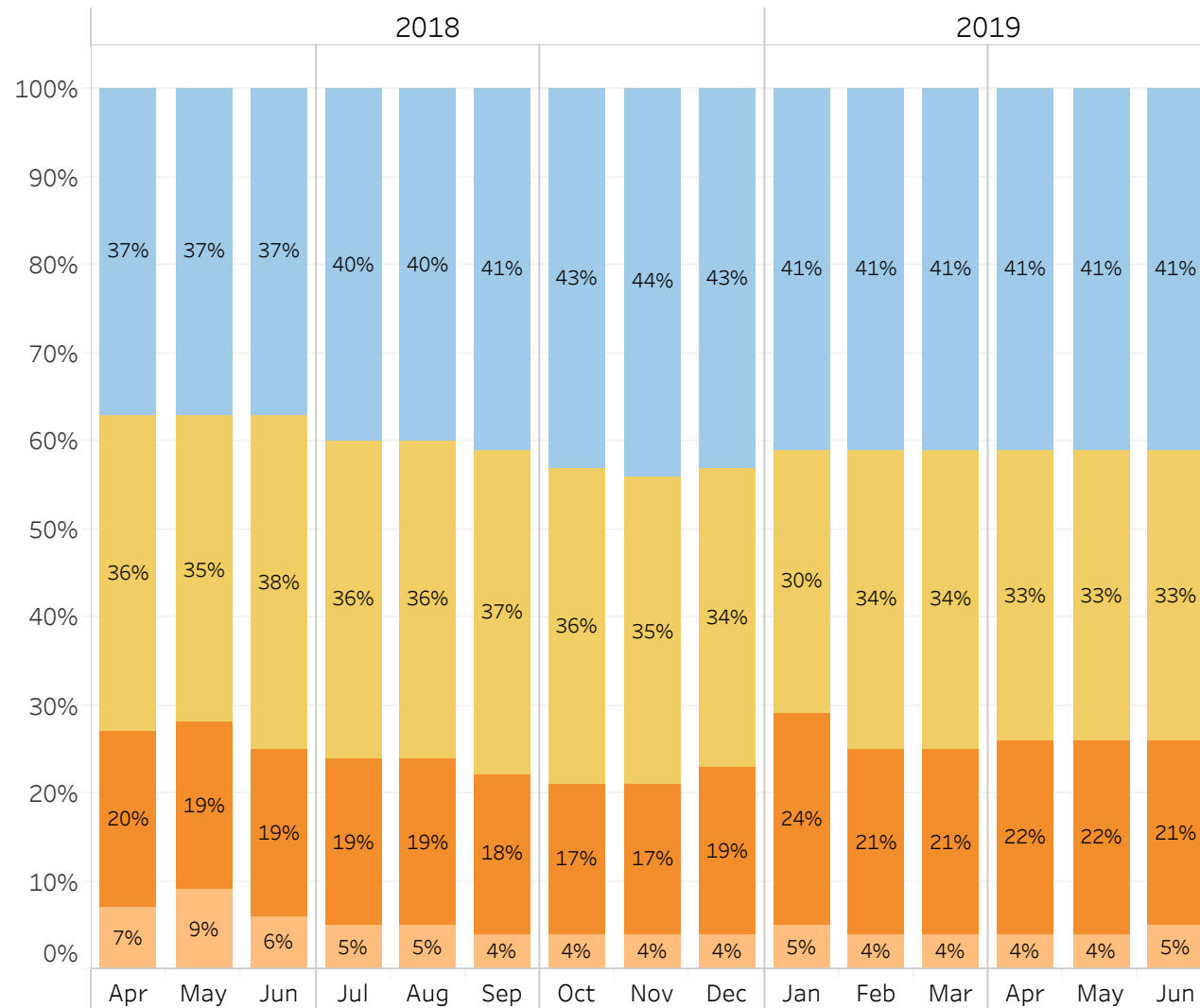
- The highest posted toll to travel the entire corridor during the quarter was the same as last quarter at \$8.50. It was reached in the a.m. and p.m. peak periods in both directions and was paid by only 5% of tolled drivers.
- Average tolls paid in Q2 2019 were similar to Q2 2018 in the northbound direction, but were 11% higher in the southbound a.m. peak and 81% higher in the southbound p.m. peak. This is due to adjustments made to the tolling algorithm to ensure more reliable express lane speeds.
- CHP filled 87% of requested enforcement hours and made about 1,600 enforcement contacts in Q2 2019, down from 96% of requested hours and 1,900 enforcement contacts in Q2 2018.

Express Lane Trips

About 14.5 million express lane trips have been taken since opening. In Q2 2019, 2 million trips were taken, down 14% from 2.4 million in Q2 2018. Toll paying trips fell 15% from 1.3 million to 1.1 million and toll-free trips fell 5% from 875K to 830K. The decline in trips is likely due to changes in the toll algorithm intended to provide more reliable express lane speeds. Average daily trips for the quarter were 32,000 compared to 36,000 in Q2 2018 and 32,000 for all months since opening.



Express Lane Trip Types



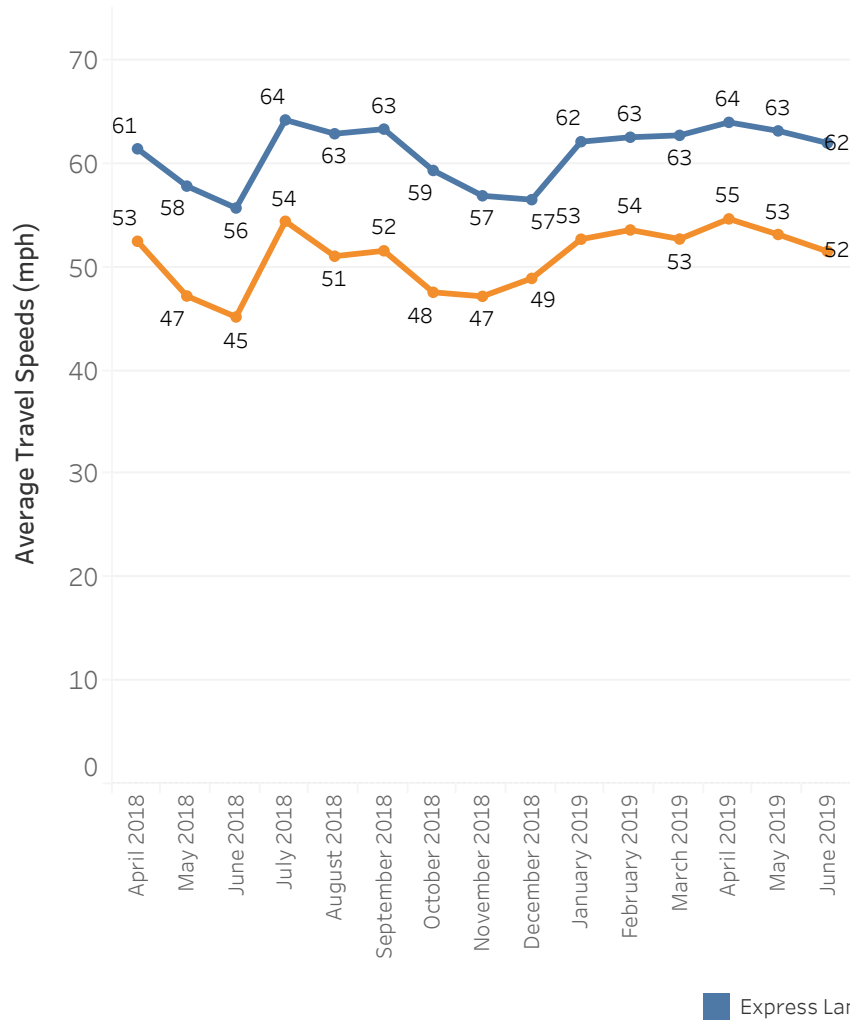
- The share of toll-free trips taken in carpools, clean air vehicles, etc. has held steady at 41% since January 2019. This is a 4% increase from Q2 2018.
- In the last 15 months, the share of tolled trips ranged from 52% to 56% of all trips, and was about 55% in Q2 2019.
- The share of vehicles without a FasTrak® toll tag or account (toll violators) ranged from 4% to 5% in Q2 2019.

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

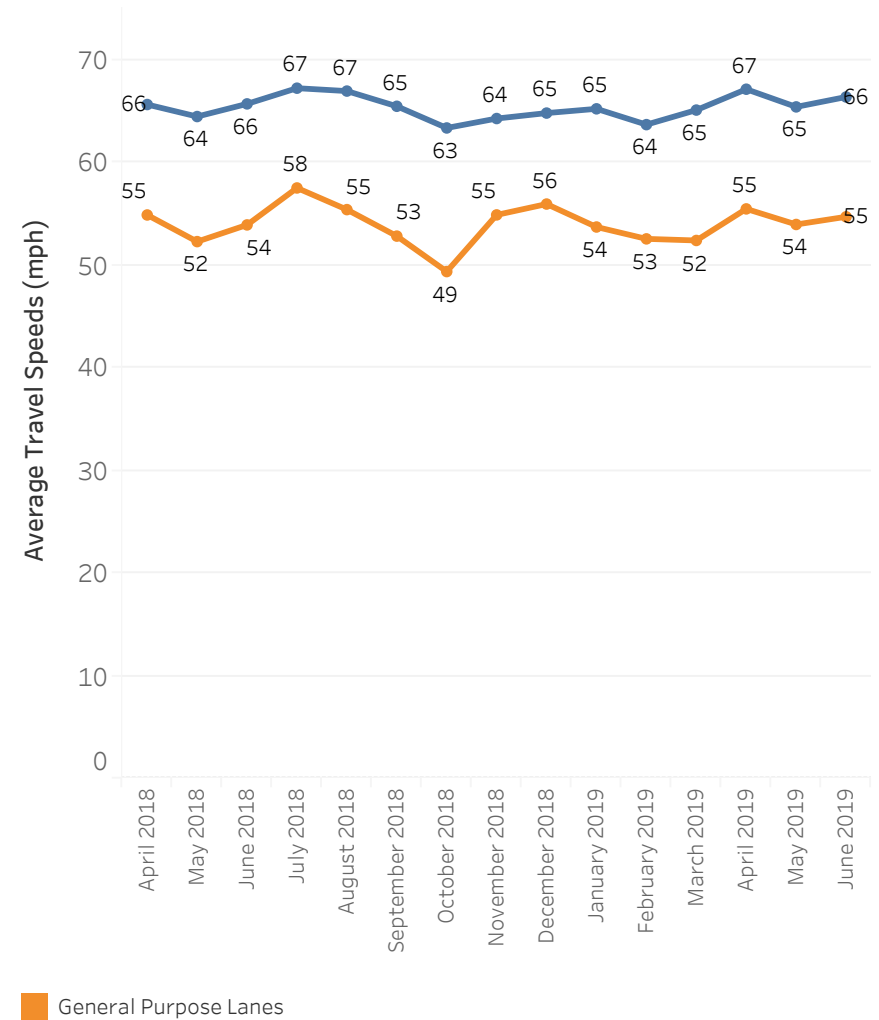
Peak Hour Average Corridor Traffic Speeds

Average corridor speeds in the northbound and southbound express lanes are 10 and 11 miles per hour faster, respectively, than those in the general purpose lanes. Express lane and general purpose lane corridor speed averages were generally higher in Q2 2019 than in Q2 2018, especially in the northbound direction.

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

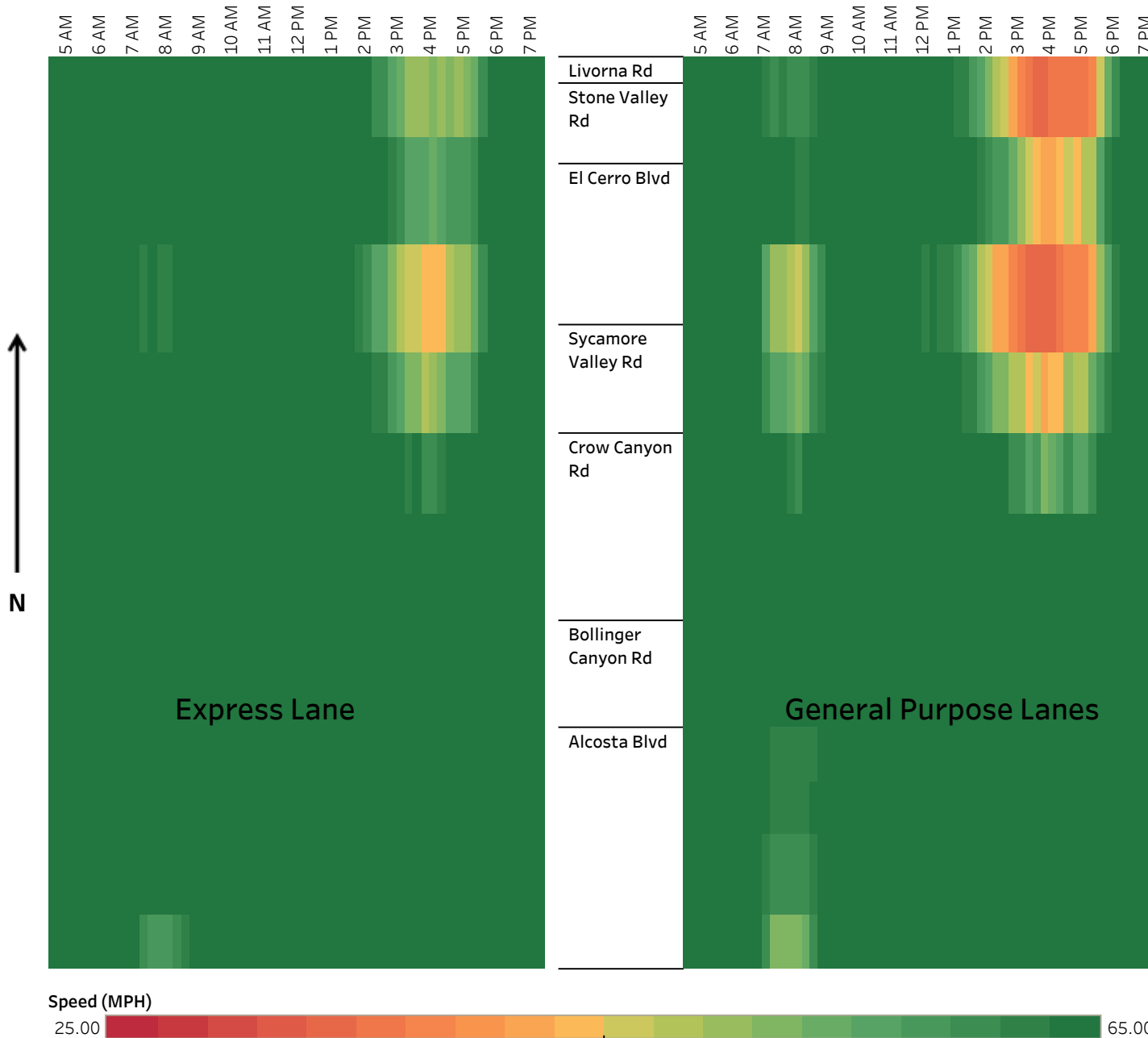


Southbound A.M. Peak Hour (8 - 9am)



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

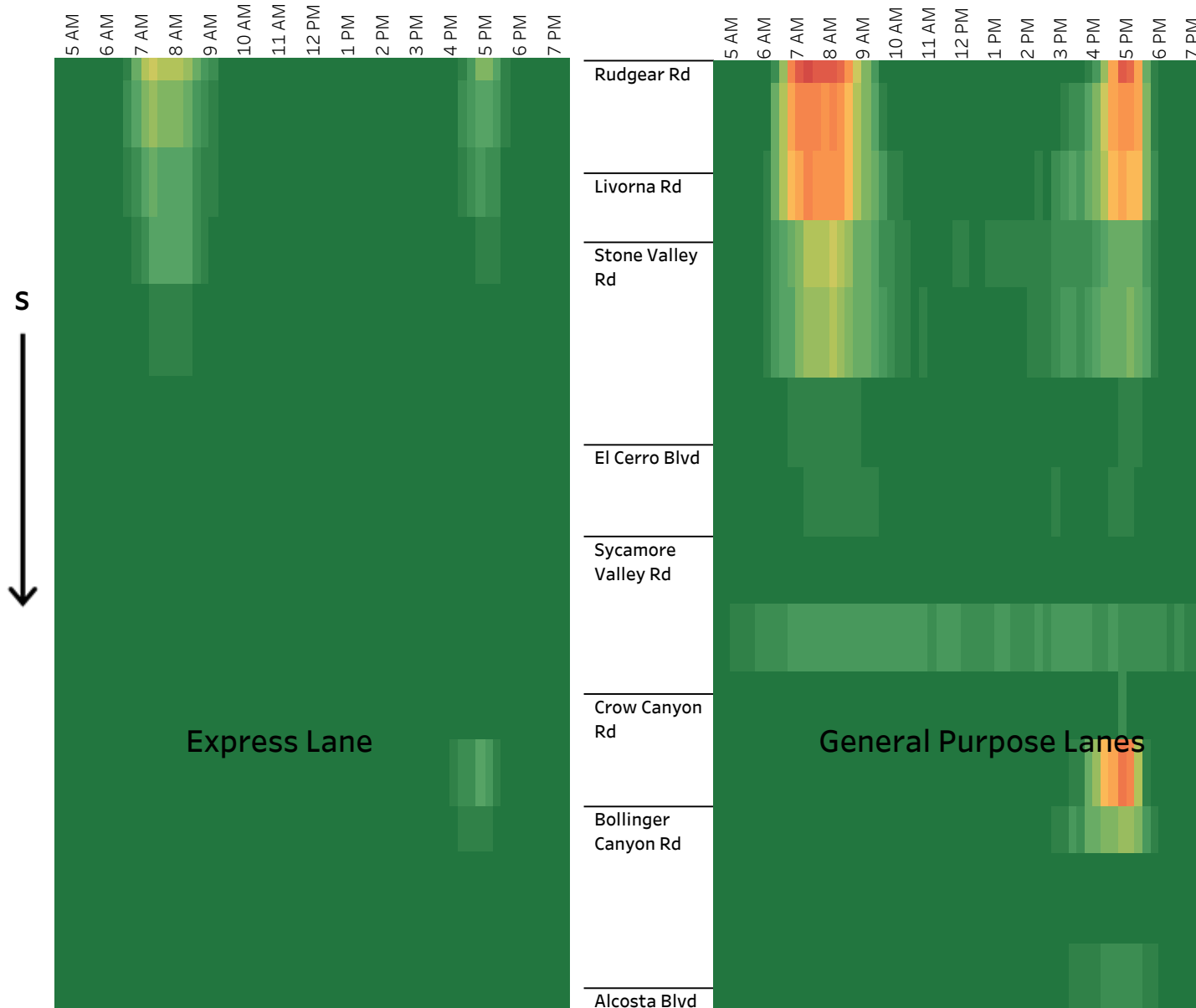


Congestion originating north of the express lane regularly caused slowdowns in the general purpose lanes in the p.m. peak.

In peak hour congestion, express lane users traveled 9 to 10 mph faster than general purpose lanes users in Q2 2019.

Traffic flowed well in all lanes during the middle of the day, 10 a.m. to 1 p.m.

Southbound Speeds by Location & Time



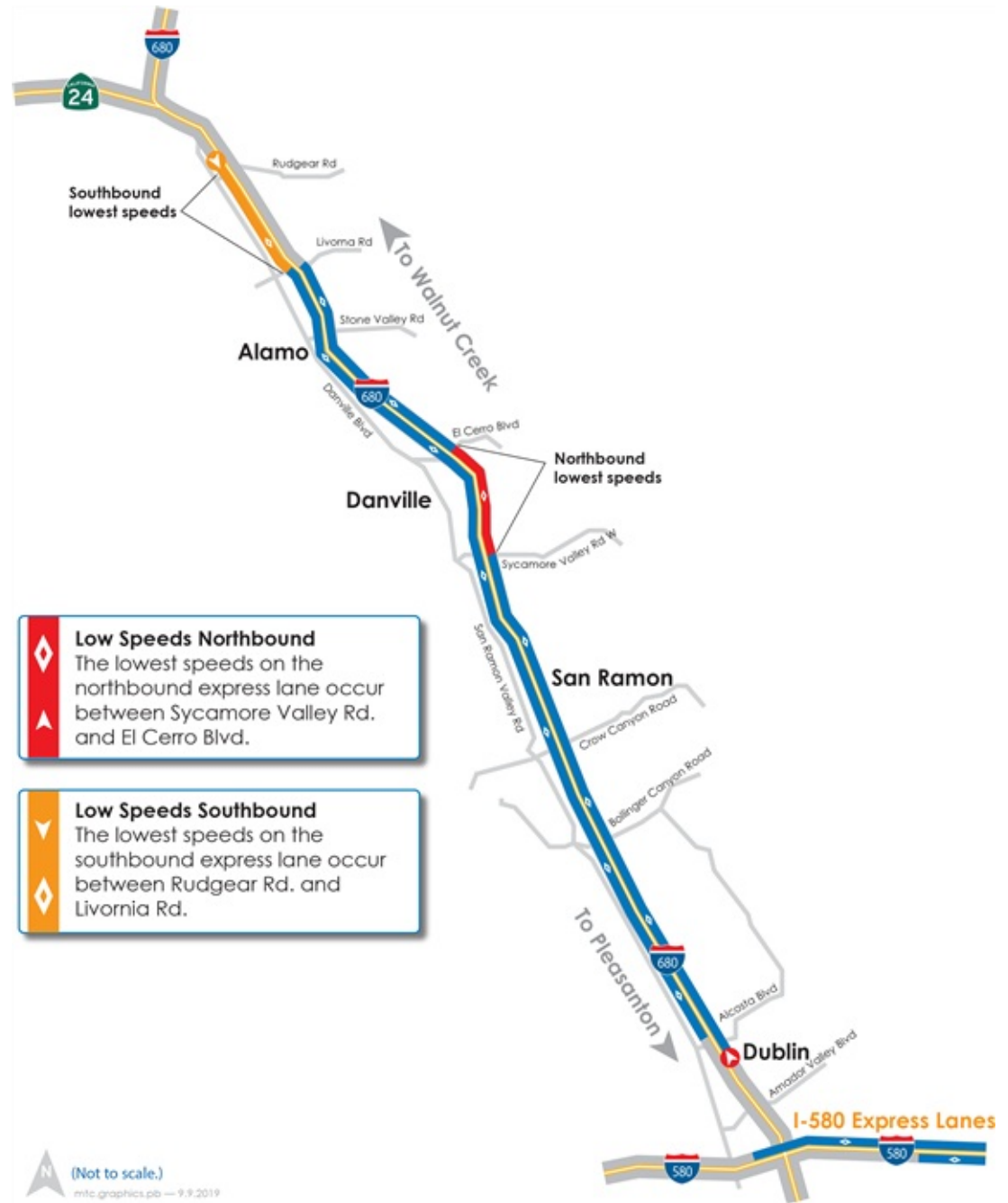
Slowdowns occurred in the general purpose lanes between Rudgear Rd. and El Cerro Blvd. in the a.m. and p.m. peak periods and between Crow Canyon Rd. and Bollinger Canyon Rd. in the p.m. peak. This latter slowdown increased in intensity between Q1 2019 and Q2 2019.

In Q2 2019, express lanes users traveled faster during these slowdowns than general purpose lane users by an average of 11 to 12 mph.

Traffic flowed well in all lanes during the middle of the day, 10 a.m. to 2 p.m.

Low Speed Locations

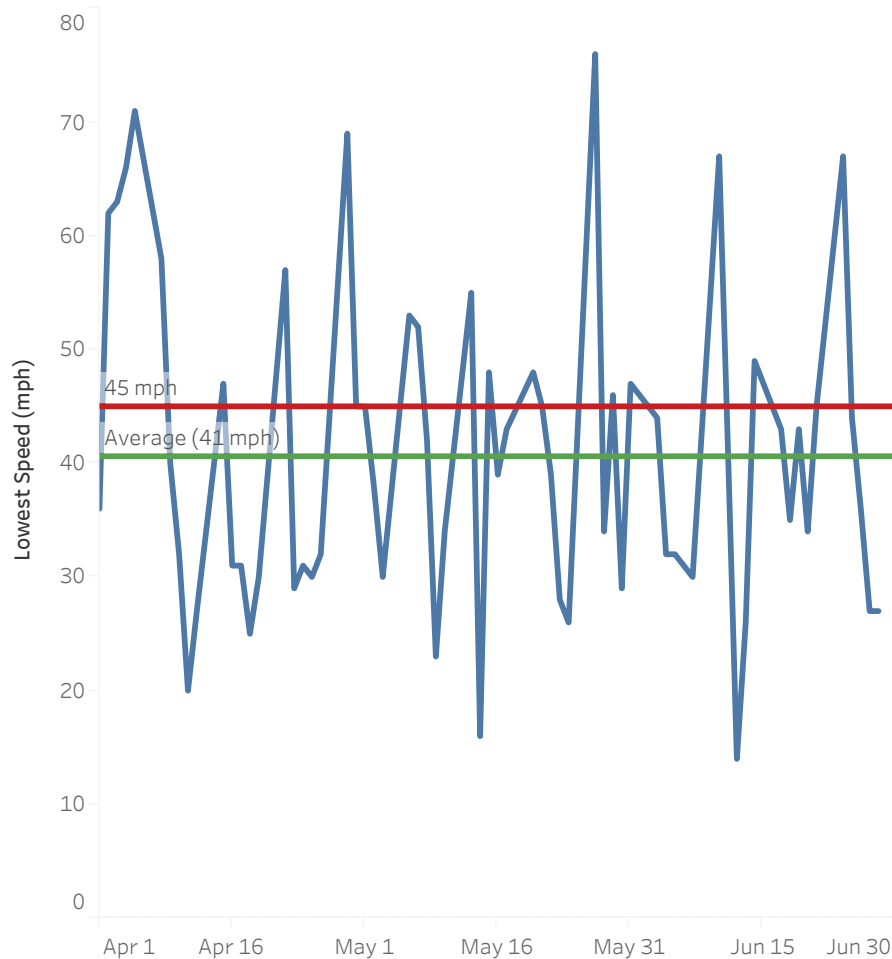
- While corridor-wide express lane speeds average over 60 mph, speeds often drop below 45 mph in some parts of the corridor.
- In the northbound direction, the lowest speeds occur between Sycamore Valley Rd. and El Cerro Blvd.
- In the southbound direction, the lowest speeds occur between Rudgear Rd. and Livorna Rd.



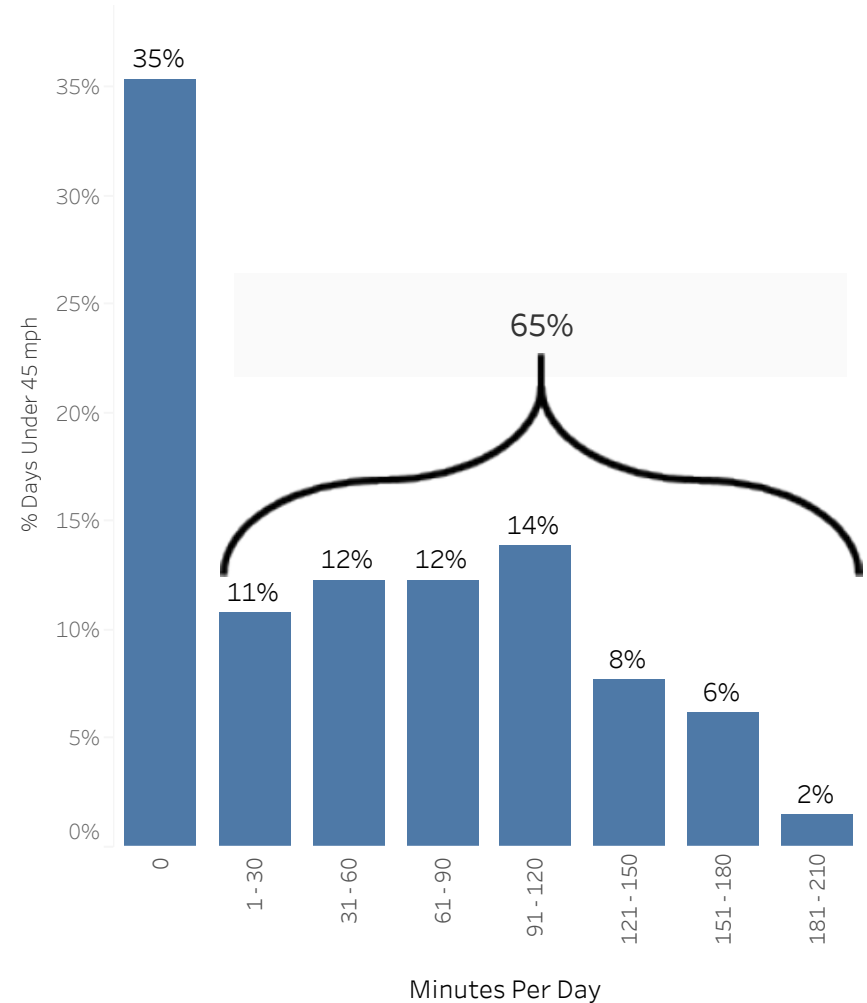
Lowest NB Exp Lane Speed - near El Cerro

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 speeds at this location averaged 41 mph in the quarter. At this location, speeds fell below 45 mph on 65% of days in the quarter; on 23% of the days the speed decline lasted 1 to 60 minutes and on 26% of the days the speed decline lasted 61 to 120 minutes. 16% of the days experienced the slow speeds for more than 2 hours.

Lowest Daily NB Speeds between Sycamore Valley Rd. and El Cerro Blvd. (mph)



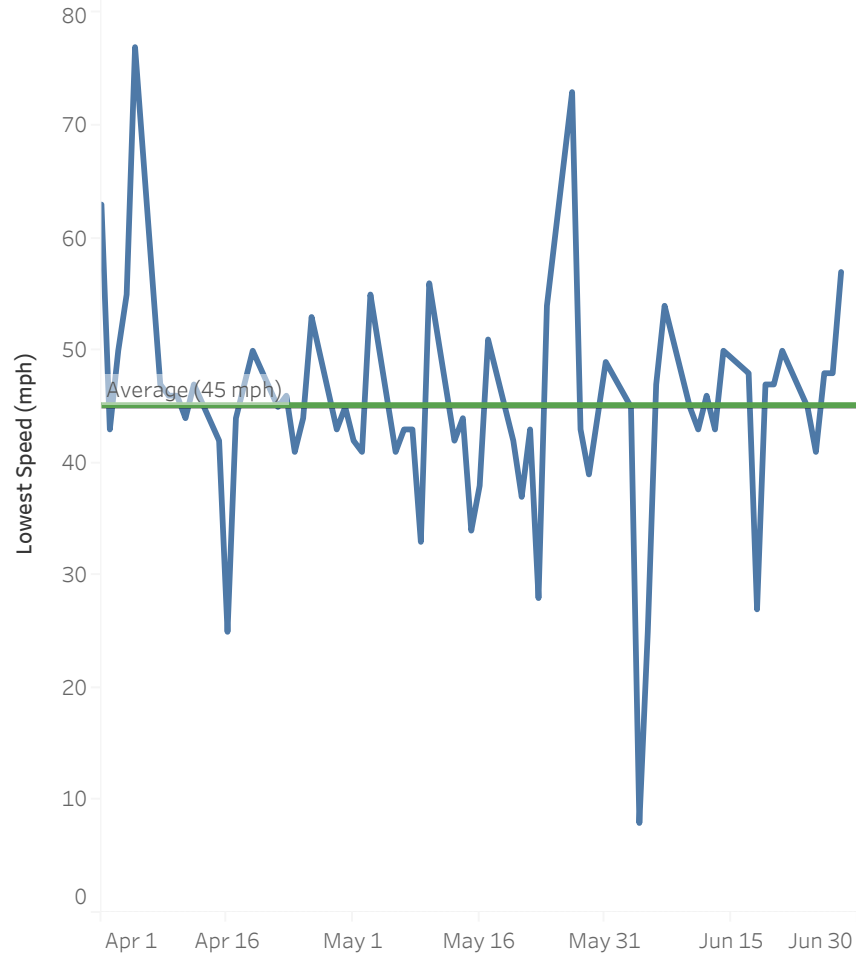
% of Days with Speeds under 45 mph by Duration (minutes per day) between Sycamore Valley Rd. and El Cerro Blvd. NB



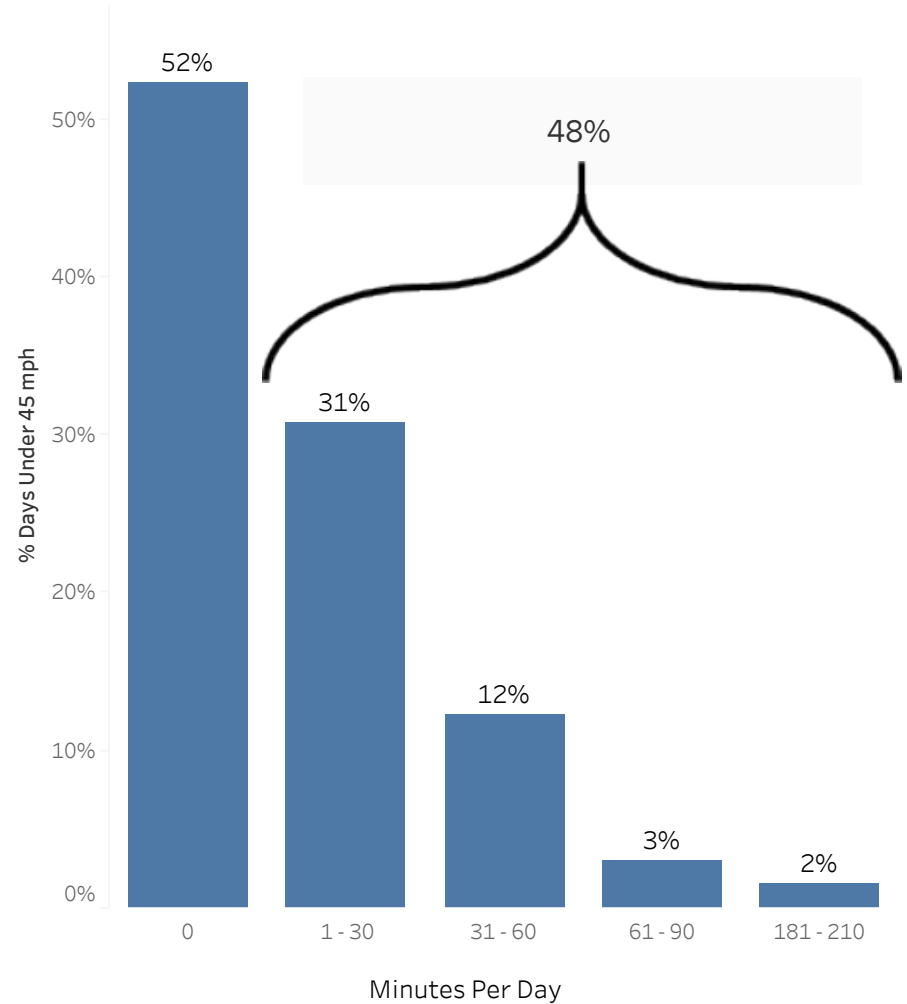
Lowest SB Exp Lane Speed - near Livorna

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 45 mph and fell below 45 mph on 48% of the days in the quarter. Speeds fell below 45 mph for 1 to 30 minutes on 31% of the days and for 31 - 60 minutes on 12% of the days. 5% of the days experienced the slow speeds for more than an hour.

Lowest Daily SB Speeds between Rudgear Rd. and Livorna Rd. (mph)

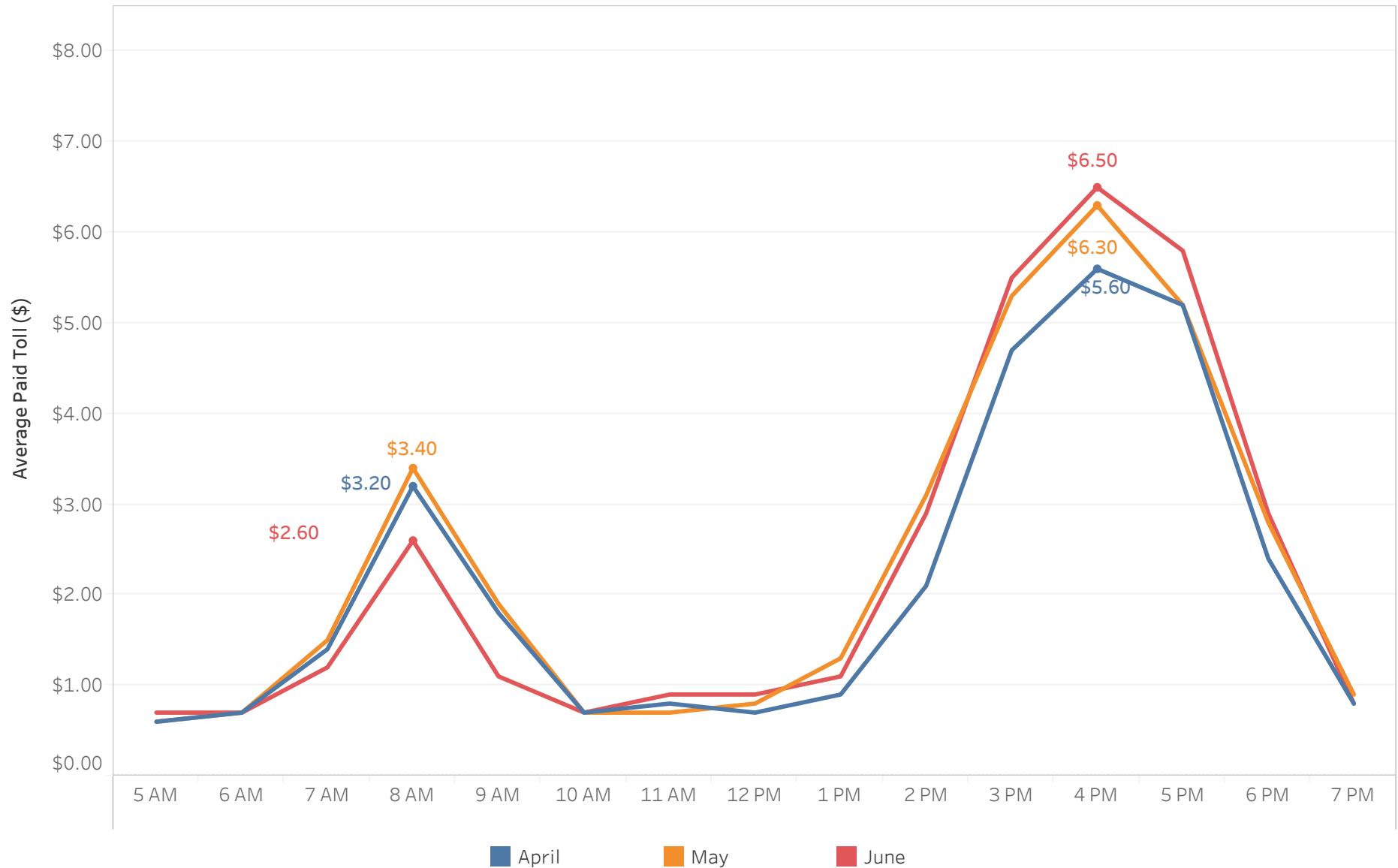


% of Days with Speeds under 45 mph by Duration (minutes per day) between Sycamore Valley Rd. and El Cerro Blvd. NB



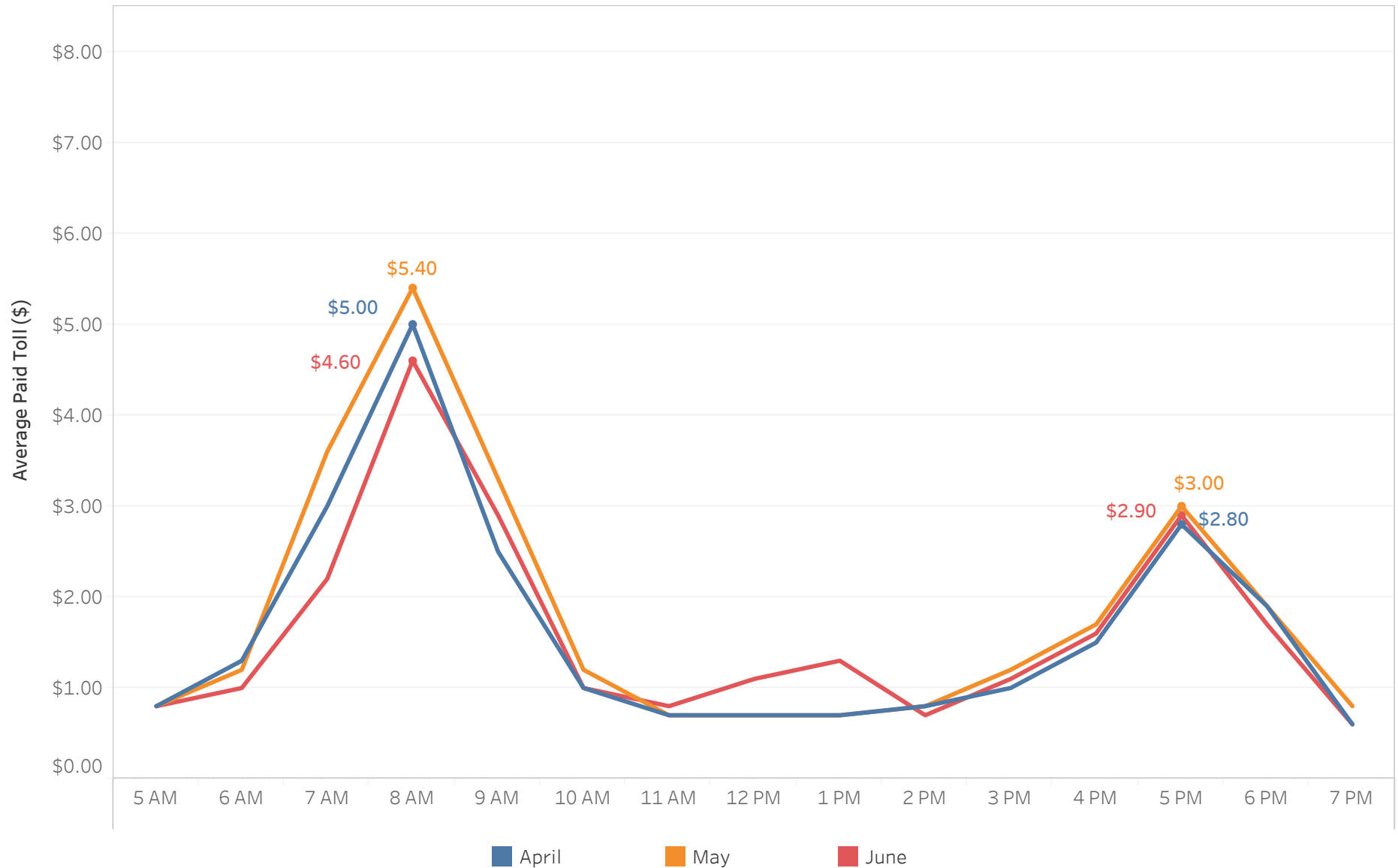
Northbound Tolls

The graph below shows the average toll paid by time of day for the northbound direction. The highest toll posted to travel the entire corridor was \$8.50. Mid-day, between 10 a.m. and 3 p.m., the average northbound toll paid was \$1.90.



Southbound Tolls

The graph below shows the average toll paid by time of day for the southbound direction. The highest toll posted to travel the entire corridor was \$8.50. Mid-day, between 10 a.m. and 3 p.m., the average southbound toll paid was \$0.90.

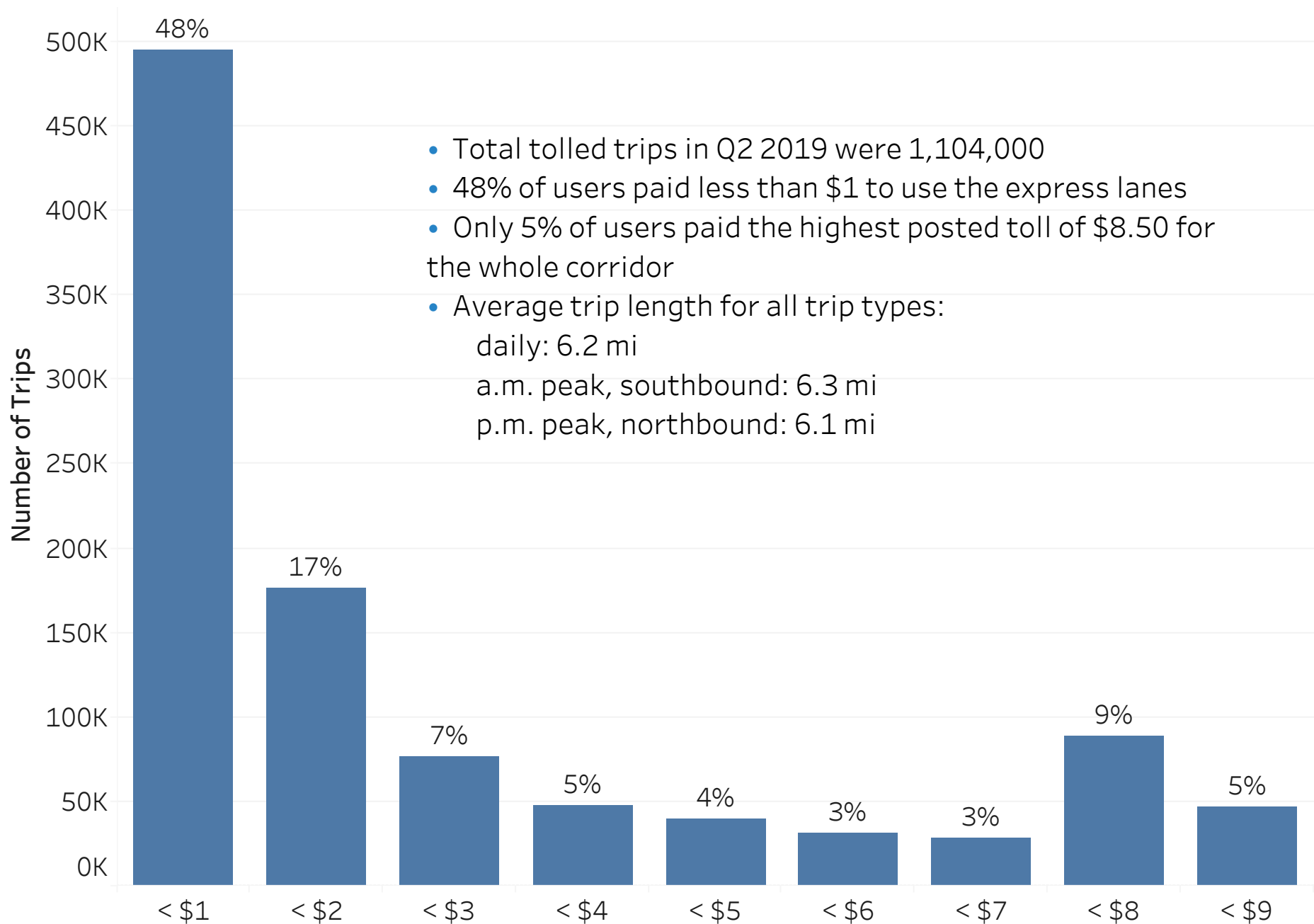


Average Tolls Paid

Average tolls paid were similar between Q2 2018 and Q2 2019 in the northbound lanes. In the southbound lanes after 8 a.m., Q2 2019 average tolls paid were higher than Q2 2018. In the p.m. peak, they were as much as \$1.30 higher. This is due to tolling algorithm adjustments made to ensure more reliable express lane speeds.



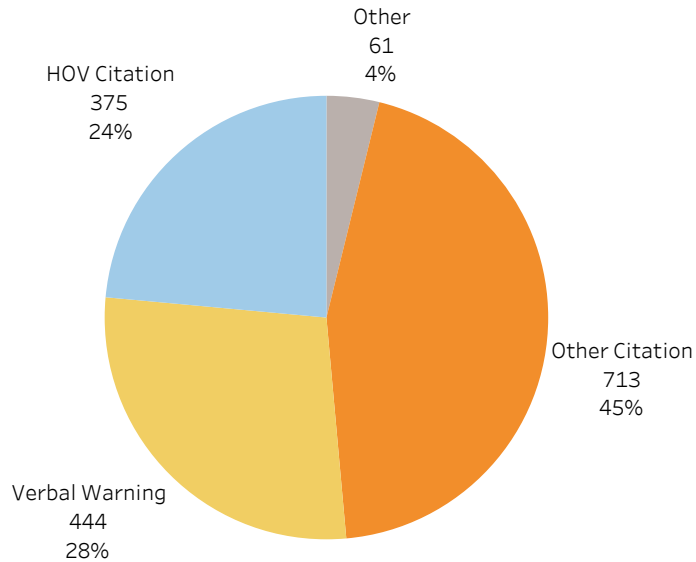
Toll Distribution



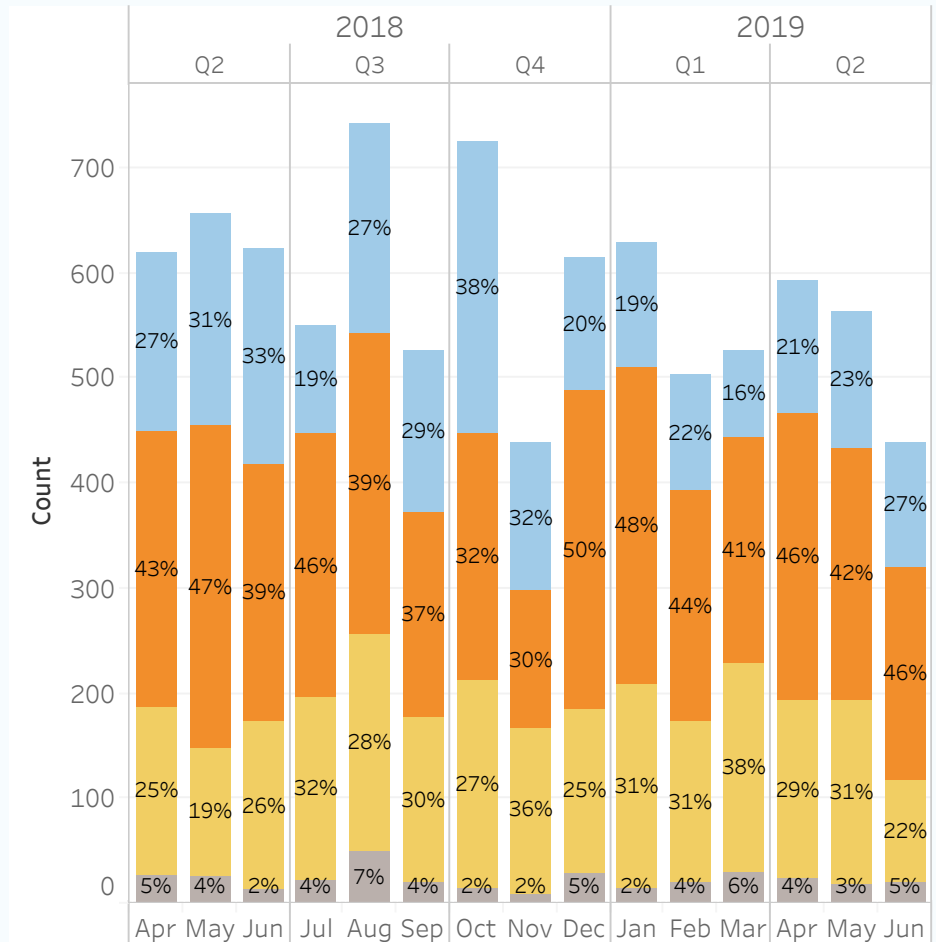
CHP Enforcement

CHP made about 1,600 enforcement contacts in Q2 2019, 24% of which resulted in citations for HOV occupancy violations. CHP filled 87% of requested enforcement hours and made about 1,600 enforcement contacts in Q2 2019, down from 96% of requested hours and 1,900 enforcement contacts in Q2 2018.

Total Enforcement Contacts
(Apr - May 2019)



Total Enforcement Contacts



■ HOV Citation
 ■ Other Citation
 ■ Verbal Warning
 ■ Other

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

