



BAY AREA EXPRESS LANES



MTC Express Lanes Quarterly Report 2nd Quarter, April - June, 2021

Submitted: November 2021

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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 2021, 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 and the second opened in October 2020 on I-880 in Alameda County. Several additional projects are at varying stages of development.

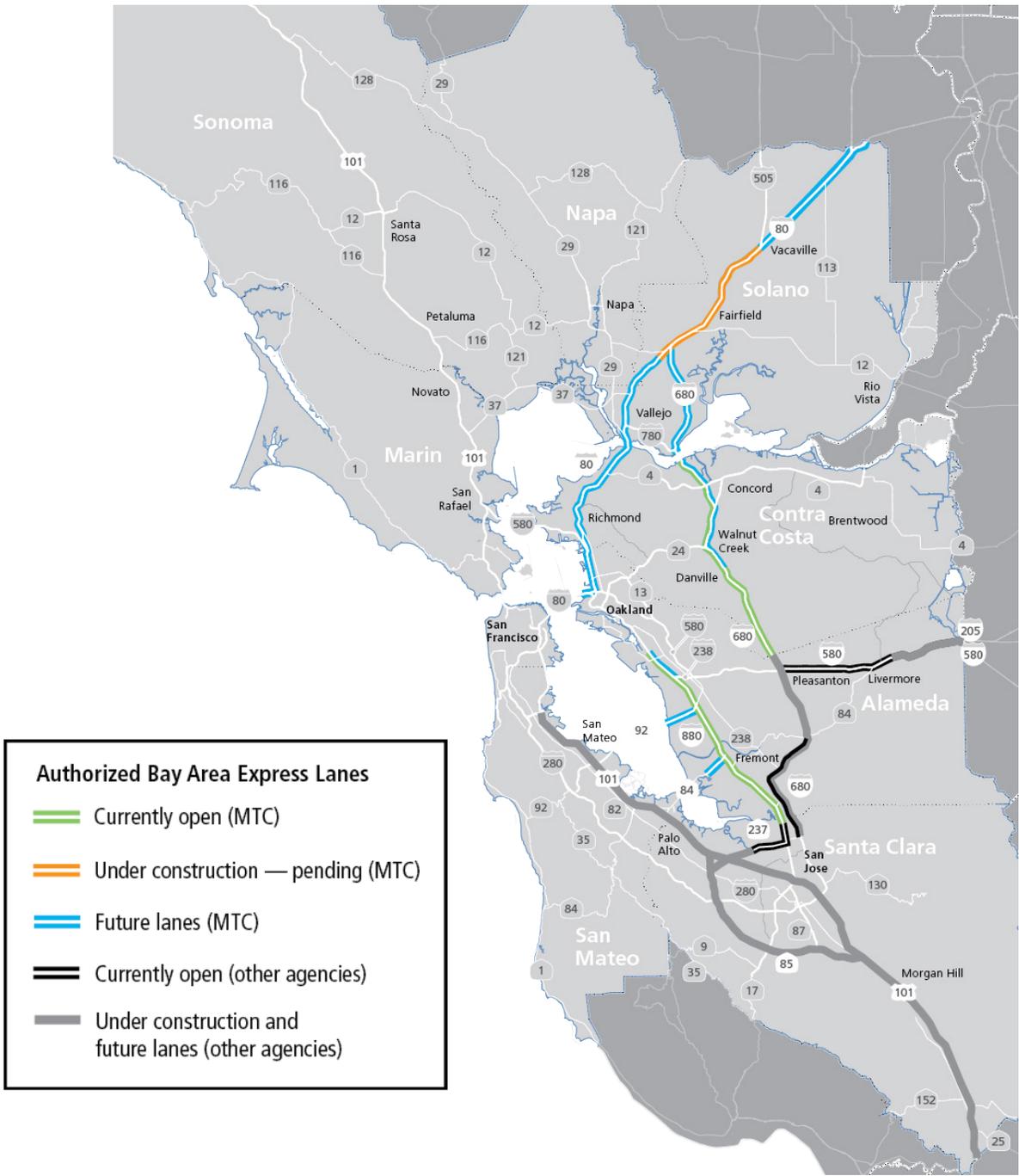
Project Development & Construction	2 nd Quarter CY2021 Highlights	Current Activities
I-880 Alameda (ALA-880) San Leandro to Milpitas <i>Hegenberger Road/Lewelling Boulevard to Dixon Landing Road</i>	<ul style="list-style-type: none"> See Appendix D for performance highlights. 	<ul style="list-style-type: none"> Project complete; see Appendix B for archived summary.
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 performance highlights. 	<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 toll system integrator completed Site Commission Testing in April 2021. 	<ul style="list-style-type: none"> The toll system integrator completed Corridor Testing in July 2021. The toll system integrator began Data Transfer Testing with the FasTrak Customer Service Center in July 2021. The express lanes team is preparing to begin tolling on Friday, August 20th, 2021.
I-80 Solano (SOL-80) Fairfield to Vacaville <i>Red Top Road to I-505</i>	<ul style="list-style-type: none"> MTC programmed federal discretionary funds as a backstop to RM3 funds in April. MTC also approved a Letter of No Prejudice allowing STA to proceed with the project using other funds. The Solano Transportation Authority (STA) completed revalidation of the environmental clearance approval in June 2021. STA updated design documents in June 2021 to support the anticipated construction advertisement. 	<ul style="list-style-type: none"> BAIFA and STA will draft a cooperative agreement for BAIFA to contribute funds to the overall civil construction contract. BAIFA is coordinating with STA and Caltrans on review and approval of system engineering documents. BAIFA continues to negotiate contractual terms with the toll system integrator. Staff continues review with AT&T of the original design for fiber and network equipment at the Backhaul hubs.

Project Development & Construction	2 nd Quarter CY2021 Highlights	Current Activities
Program Management	<ul style="list-style-type: none"> • Staff entered into a contract for customer engagement services for the Toll Discount Pilot on BAIFA's I-880 Express Lanes. • Staff finalized the customer education strategy for the start of tolling on the I-680 North Southbound. 	<ul style="list-style-type: none"> • Staff will conduct focus groups and a telephone town hall with potential pilot customers, and present feedback and the draft Pilot concept to BAIFA in October 2021. • Staff is drafting an amendment to BAIFA's Toll Ordinance to enable the Toll Discount Pilot on its I-880 Express Lanes. • Staff will finalize the customer education strategy for the start of tolling on the I-680 North Southbound.
Toll System	<ul style="list-style-type: none"> • The toll system integrator completed I-880 operational acceptance in May 2021. 	<ul style="list-style-type: none"> • The toll system integrator continues to fine-tune the toll system in preparation for I-680 North Southbound operational acceptance.

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	●	●	●
					<i>Project completed 2020</i>		
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	Fall 2020 Actual	●	A-7
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	Summer 2021	●	12
I-80 Solano (Sol-80) Fairfield to Vacaville <i>Red Top Rd. to I-505</i>	End of 2021	End of 2024	●	14

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. MTC's Finance Section reports financial information to BAIFA about one quarter in arrears, which does not fit with the production timeline for this Quarterly Report. As a result, the expended-as-of amounts shown below represent the unaudited amount of BATA Express Lane funds expended through the previously reported quarter; percent complete amounts are reported through the previously reported quarter for consistency. The confidence level assessment reflects potential risks to each project budget; for more information, see Section III.D Risk Management Plan.

Project ⁽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 as of 3/31/21 ⁽⁵⁾	Confidence Level ⁽⁶⁾
					July 2018 Amendment	Sept. 2018 Amendment	Expended as of 3/31/21		
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	125.6	99%	●
I-680 Contra Costa Southern Segment	54.0	54.0			55.6	54.0	52.5	99%	●
I-680 Contra Costa Northern Segment Southbound ⁽⁷⁾	127.4	127.4	19.4	54.3	51.3	53.6	41.4	95%	●
I-80 Solano	282.6	282.6	14.5	250.0	19.0	18.1	12.2	20%	●
Centralized Toll System		32.4			33.6	32.4	24.4	95%	●
Program Planning, Coordination & Management	28.4	28.4			28.4	28.4	24.6	90%	●
Program Contingency	6.1	6.1			5.1	2.9			●
Capitalized Start-up O&M	16.0	16.0			16.0	16.0	4.9		●
MID-TERM CONVERSIONS AND GAP CLOSURE OPPORTUNITY PROJECTS									
I-80 Alameda/Contra Costa and Westbound approaches to the Bay Bridge (I-80, I-580, I-880, West Grand)	193.0	5.0	5.0						
Dumbarton Bridge Westbound Approach (SR-84)	9.0	0.3			0.3	0.3	0.3	5%	
San Mateo Bridge Westbound Approach (SR-92)	10.0	0.4			0.4	0.4	0.4	5%	
I-680 Contra Costa Northbound Express Lane Completion ⁽⁸⁾	390.0	21.5	1.5	20.0				5%	
Centralized & Program Costs & Start-Up O&M - Gap Closures & Future Conversions	TBD								
TOTALS	1,280.3	713.2	40.4	324.3	345.2	345.2	286.3	88%	

⁽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 changes recorded in the second quarter of CY2021.

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, 2021, the risk exposure stands at \$0.3 million, significantly lower than as reported last quarter. Overall, only one risk associated with the I-880 corridor remains, which is related to a permitting delay for backhaul communications installation. Furthermore, all but one risk remains for the I-680 North corridor, regarding Caltrans cost of oversight and reimbursed work for the civil contract. This quarter, toll system testing started and will continue into the third quarter of CY2021 until just before tolling begins on August 20, 2021; the team will continue to track the remaining scheduling impacts, if any, regarding toll system installation and testing, backhaul communications issues, and the potential for adverse impacts related to COVID-19 or wildfires.

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 Lanes 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 exceeds the current risk exposure of \$0.3 million. While there are no longer any individual risks with major cost impacts, there are a few risks with minor cost impacts remaining. Staff remain 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 only remaining risk, a delay in AT&T communication network connections, is still being tracked. Last quarter, work was slightly delayed while AT&T and BAIFA awaited the Caltrans permit required for the completion of the fiber installation. In April, Caltrans requested additional details for the permit submittal, which required revised documents that have since been submitted. Work is now estimated to be completed in the third quarter of CY2021. MTC is using wireless communications in lieu of a permanent fiber communications line.

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

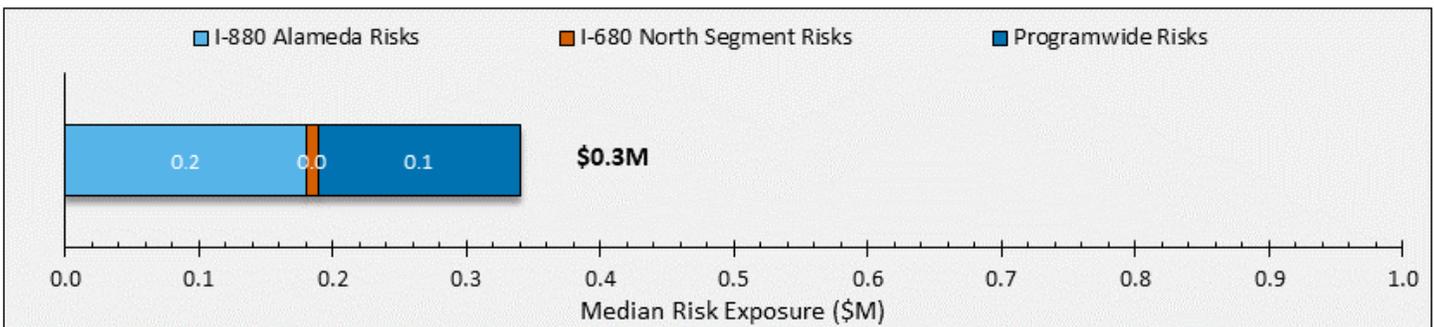


Chart #1 shows the contribution of each project’s risks toward the total program risk exposure. Risk exposure is calculated using Monte Carlo simulation.

I-680 Contra Costa Northern Segment Southbound

- In the first quarter of CY2020, BAIFA found project construction to be an essential government function based on Governor Newsom’s identification of critical infrastructure sectors, allowing construction to continue in compliance with Contra Costa County public health directives. This quarter, with the remaining groundwork having been completed, the project is on schedule and continues to progress. Even with the potential for new COVID variants, it is expected that the project will continue without any significant impacts towards the completion of the I-680 corridor. As such, this risk has been retired.
- This past quarter, a handful of risks have been retired. One of the risks regarding the delivery and installation of LED panels for pricing signs has been closed out after the successful installation and subsequent panel test. In addition, two risks regarding the delayed Toll System Integrator acceptance of civil work and Toll System Integrator staffing levels have also been closed out due to the completion of the remaining civil work on the corridor.

- The only remaining risk is regarding Caltrans cost of oversight of the civil contract exceeding its allotted budget. Throughout the quarter, Caltrans’ invoices have continued to shrink, and are not expected to have any significant cost or schedule impacts. The BAIFA team will continue to monitor and track this risk.

Programwide Risks

- This quarter, a new risk has been added regarding the potential for Manual Image Review (MIR) staffing levels of the Toll System Integrator’s impacting the image review rate. This has the potential to delay the I-680 North toll system implementation process due to increased trip building time, as the image review queue backs up. In May, there were two issues causing concern: high turnover on the MIR team, and a fault in the system that prevented images going to the queue. Most recently, the fault has been addressed and the MIR queue is seeing significant improvements along with hiring efforts. Cost and schedule impacts remain low for this risk, although may need to be readjusted as the start of tolling on I-680 North nears.

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

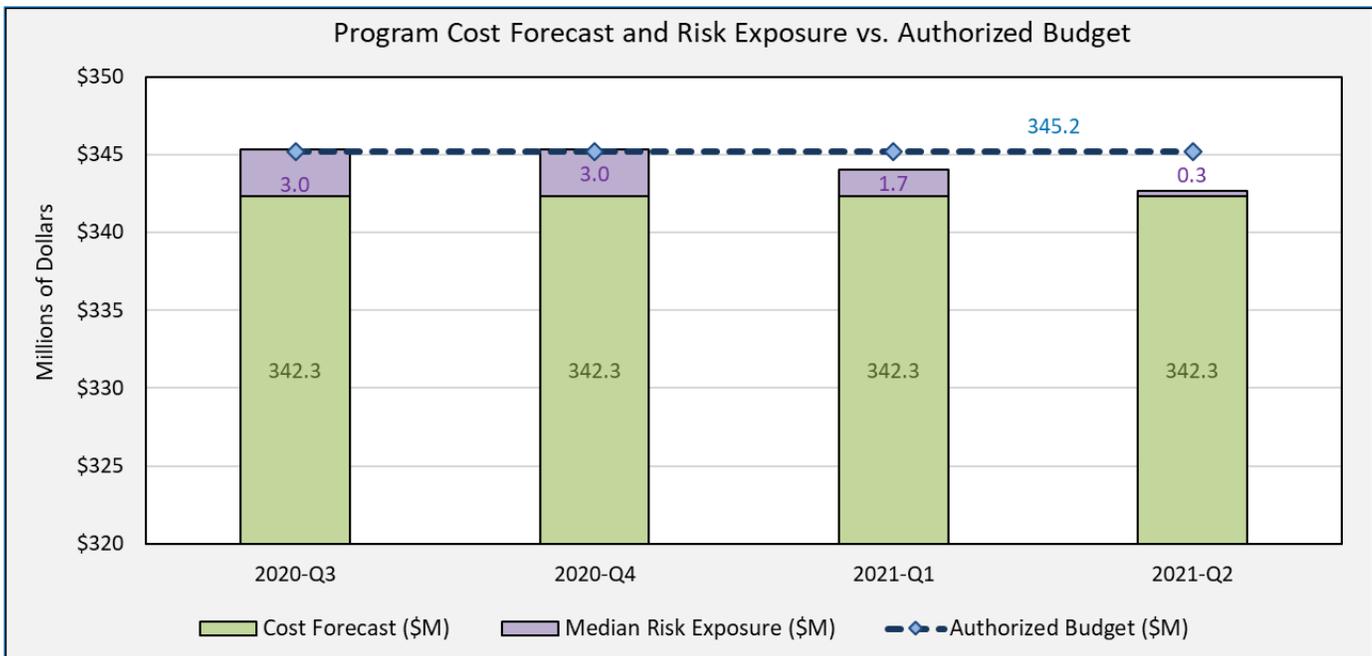


Chart #2 shows the program cost forecast and risk exposure as compared to the authorized program budget.

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; updating express lane business rules and the toll ordinance; conducting customer education and outreach; maintaining 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 entered into a contract for customer engagement services and developed focus group and telephone town hall discussion guides for the Toll Discount Pilot on BAIFA's I-880 Express Lanes.
- Staff finalized the customer education strategy for the start of tolling on the I-680 North Southbound.
- Staff developed strategies to message the need for toll tags on express lanes.

Current Program Management Activities

- Staff will conduct focus groups and a telephone town hall with potential pilot customers in July 2021 and apply feedback to the draft Toll Discount Pilot concept.
- Staff will present customer engagement feedback and the draft Pilot concept to BAIFA in October 2021.
- Staff is drafting an amendment to BAIFA's Toll Ordinance to enable the Toll Discount Pilot on its I-880 Express Lanes.

Toll System Highlights and Progress

- The toll system integrator contract was awarded in June 2014.
- Buildout of the Regional Operations Center was finished in March 2017.
- The toll system went live to the public on October 9, 2017.
- In December 2018, the toll system integrator contract was extended to June 2023 to include the I-680 Northern Segment. The change removed the I-80 Solano express lanes from the contract. It will be added back when construction funding is secured.
- The I-680 Southern Segment Operations Test concluded in April 2019. Operations testing is a system acceptance test. The Operations & Maintenance (O&M) phase, which includes a one-year warranty period, began in May 2019.
- The toll system integrator went live with lane-side equipment software to finalize the 6C enhancements. The system began tolling 6C tags on October 8, 2019.
- In March 2020, the express lane Host system began sharing toll rate information with MTC's 511 Traveler Information System.
- In June 2020, the toll system integrator began manual image review for low-confidence license plate images to improve trip building.
- In July 2020, the toll system integrator launched the trip building software upgrade to improve system efficiencies and the lane-transaction filter to allow for I-880 testing in the live Host system.
- The toll system integrator completed I-880 operational acceptance in May 2021.

Current Toll System Activities

- The toll system integrator continues to fine-tune the toll system in preparation for I-680 North Southbound operational acceptance which will happen in fall 2021.



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-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

Summer 2021

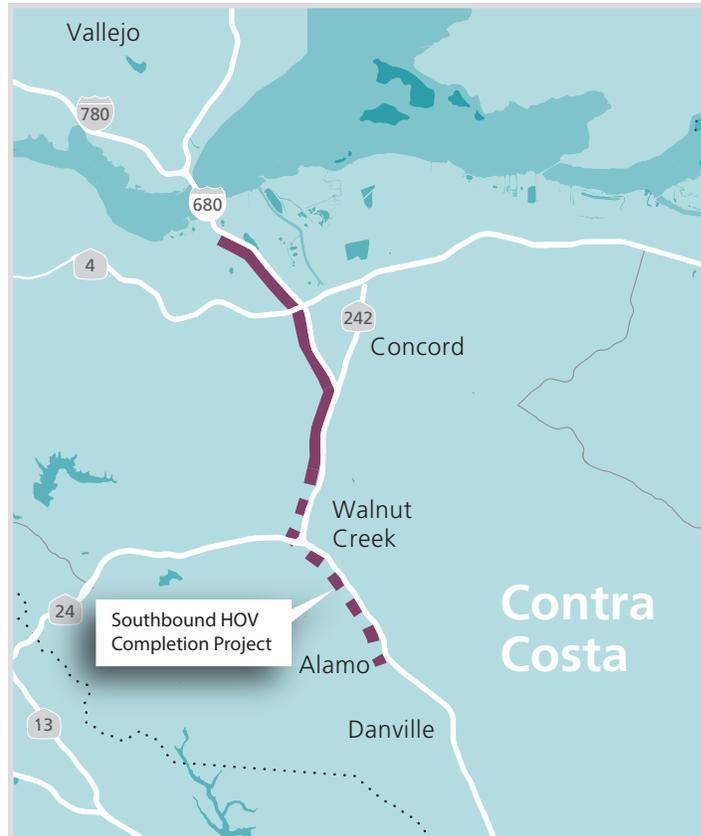
Project Description

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

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

Project Highlights and Progress

- Caltrans signed the environmental document in December 2016 and approved the Project Report in August 2017. Caltrans completed a revalidation in September 2017.
- A contract to remove trees along southbound I-680 in Walnut Creek between South Main Street and Livorna Road was awarded in October 2017, and work was completed in December 2017.
- All utility relocations were completed as of August 2018.
- Construction started October 1, 2018, and a ground-breaking event was held October 3, 2018.
- In December 2018, the toll system integrator contract was extended to June 2023 to include I-680 North SB.
- In May 2019, the backhaul contractor successfully rerouted the backhaul fiber between SR-24 and Livorna Road in Walnut Creek to allow for lane widening, and the toll system integrator participated in switching the live toll equipment from the old to the new fiber.
- In June 2019, CCTA and Caltrans executed an amendment to incorporate Caltrans oversight of landscape work and the first year of plant establishment into their cooperative agreement.
- In September 2019, BAIFA and Caltrans executed a cooperative agreement for Caltrans to review and approve the toll system design package, issue an encroachment permit and review site installation (as needed).
- Caltrans concurred with the replacement planting design in February 2020.
- Caltrans issued the encroachment permit for toll system installation in April 2020.
- In the second quarter of CY2020, the project team developed a strategy to open the new lane capacity between North Main Street and Rudgear Road as an HOV 2+ lane prior to tolling.

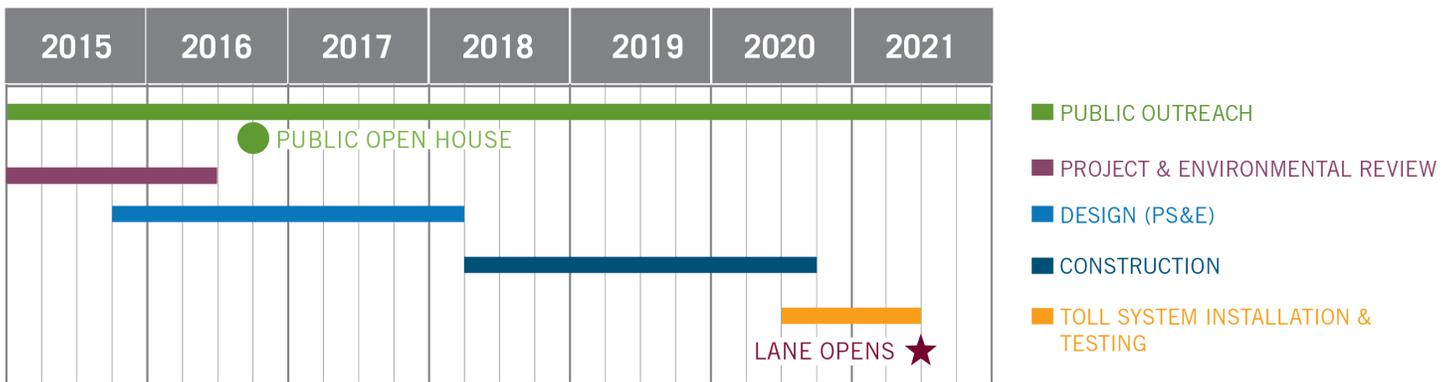


- The civil contractor completed highway widening activities in August and the new southbound lane capacity opened to HOV 2+ traffic on August 24, 2020.
- Civil construction was substantially complete for all stages of contract work as of December 2020.
- The toll system integrator completed Site Commission Testing on I-680 North Southbound in April 2021.

Current Project Activities

- The toll system integrator began Corridor Testing in June 2021 and will complete it in July 2021.
- The toll system integrator will begin Data Transfer Testing with the FasTrak Customer Service Center in July 2021.
- The express lanes team is preparing to begin tolling on Friday, August 20th, 2021, including but not limited to: removal of temporary construction overlays, installation of permanent new zone destination overlays, deployment of operational lane modes for new zones, implementation of dynamic pricing parameters for the toll system algorithm and public outreach.

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⁾ as of 3/31/21 ⁽⁴⁾
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 3/31/21	
127.4	127.4	19.4	54.3	51.3	53.6	41.4	95%

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.

I-80 Solano (SOL-80)

Fairfield to Vacaville

Red Top Road to I-505

Total Cost Estimate

\$282.6 million

Scheduled Open Date

End of 2024

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.

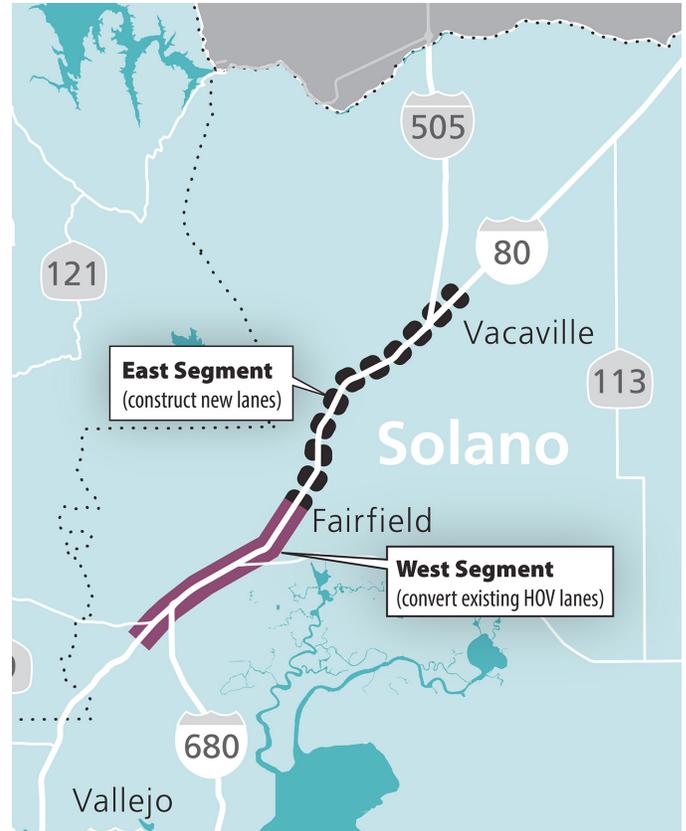
The project will also construct new eastbound and westbound lanes between Air Base Parkway and I-505 in Vacaville. In this section, the highway will be widened along with the installation of express lane striping, signage and equipment. The project will result in 36 miles of express lanes on I-80 in 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.
- The California Transportation Commission awarded \$123 million of Senate Bill 1 competitive funds to the project in November 2020. The project funding plan is now complete, subject to the availability of \$85 million of Regional Measure 3 Express Lane Program funds pending litigation.



- MTC programmed federal discretionary funds as a backstop to RM3 funds in April. MTC also approved a Letter of No Prejudice allowing STA to proceed with the project using other funds.
- The STA completed revalidation of the environmental clearance approval in June 2021 to support the anticipated construction advertisement.
- STA updated design documents in June 2021 to reflect current standards for design elements and specifications for the toll collection system to support the anticipated construction advertisement.

Current Project Activities

- BAIFA and STA will draft a cooperative agreement, which will serve as a mechanism for BAIFA to contribute funds to the overall civil construction contract.
- BAIFA is coordinating with STA and Caltrans on the review and approval of system engineering documents for the project.
- BAIFA continues to negotiate contractual terms with the toll system integrator for design, implementation, and operations & maintenance, and will take a change order to BAIFA for approval in July 2021.
- Staff continues review with AT&T of the original design for fiber and network equipment at the Backhaul hubs in Fairfield and Vacaville.

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 as of 3/31/21 ⁽⁴⁾
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 3/31/21	
282.6	282.6	14.5	250.0	19.0	18.1	12.2	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.

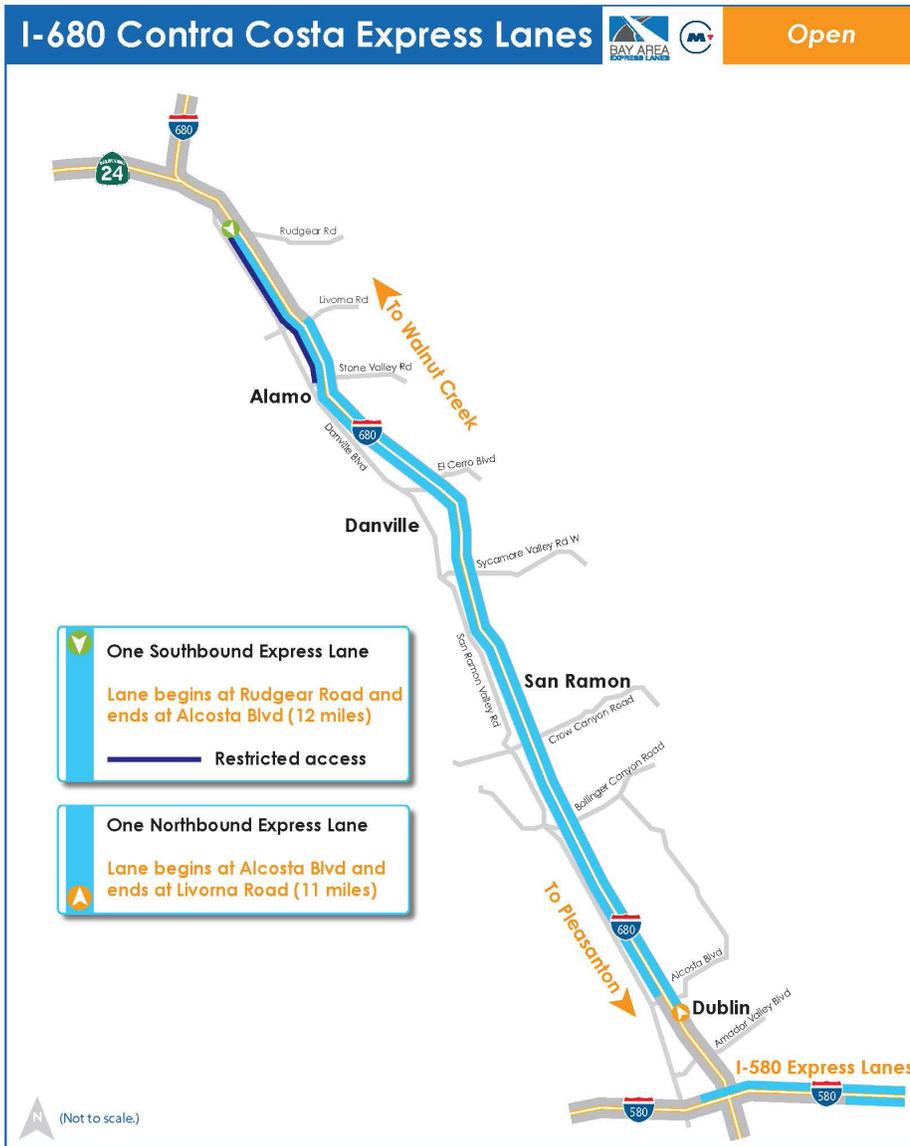
IV. OPERATIONS

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

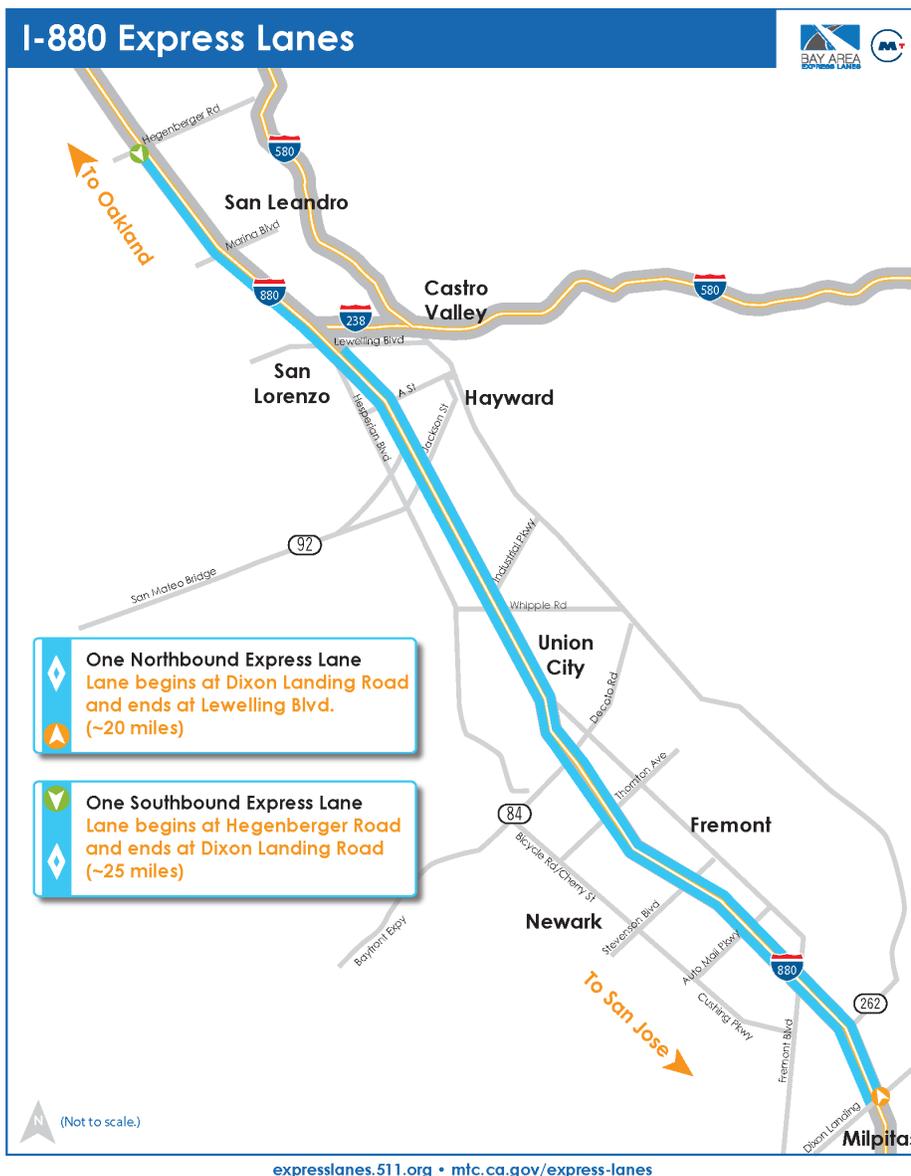
- Hours are Monday through Friday, 5 a.m. – 8 p.m.
- Tolls change based on traffic congestion; there is no maximum toll
- All vehicles in the express lane must use a FasTrak® or FasTrak Flex® toll tag
- Carpools of 2 or more people, eligible clean air vehicles, motorcycles and transit buses travel toll-free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

I-880 Alameda Express Lanes

The I-880 Alameda Express Lanes opened October 2, 2020. The lanes run 20 miles northbound from Dixon Landing Road to Lewelling Boulevard and 25 miles southbound from Hegenberger Road to Dixon Landing Road. 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 D** 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 3 or more people, motorcycles and transit buses travel toll-free with a properly set FasTrak Flex toll tag
- 2-person carpools and eligible clean air vehicles (CAVs) pay a half-price toll with a properly set FasTrak Flex or FasTrak CAV toll tag, respectively
- Learn more at expresslanes.511.org

APPENDICES

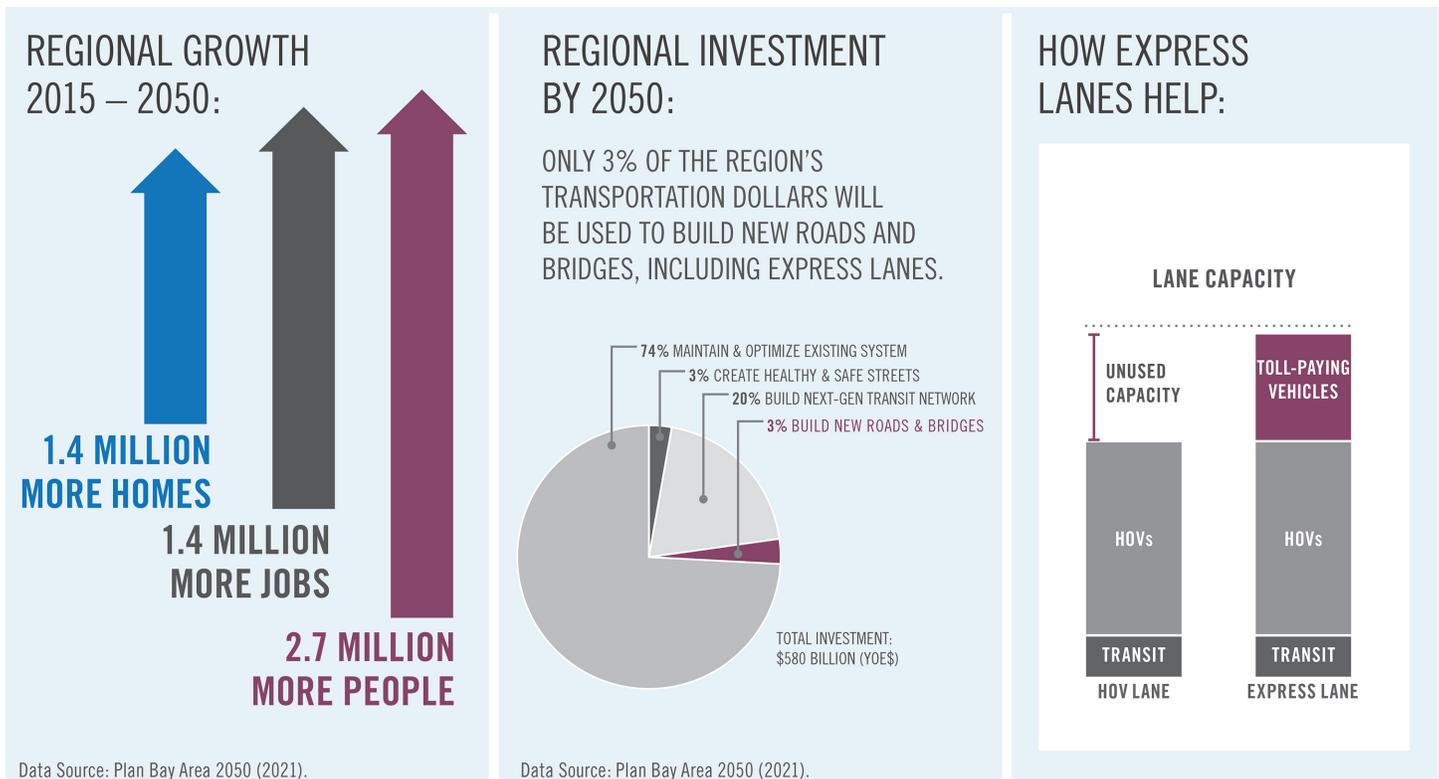
APPENDIX A

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 aim to 1) manage congestion and bring reliability to the traveling public, 2) increase person throughput by creating a seamless express lanes network that incentivizes the use of public transit, vanpools and carpools, and 3) minimize greenhouse

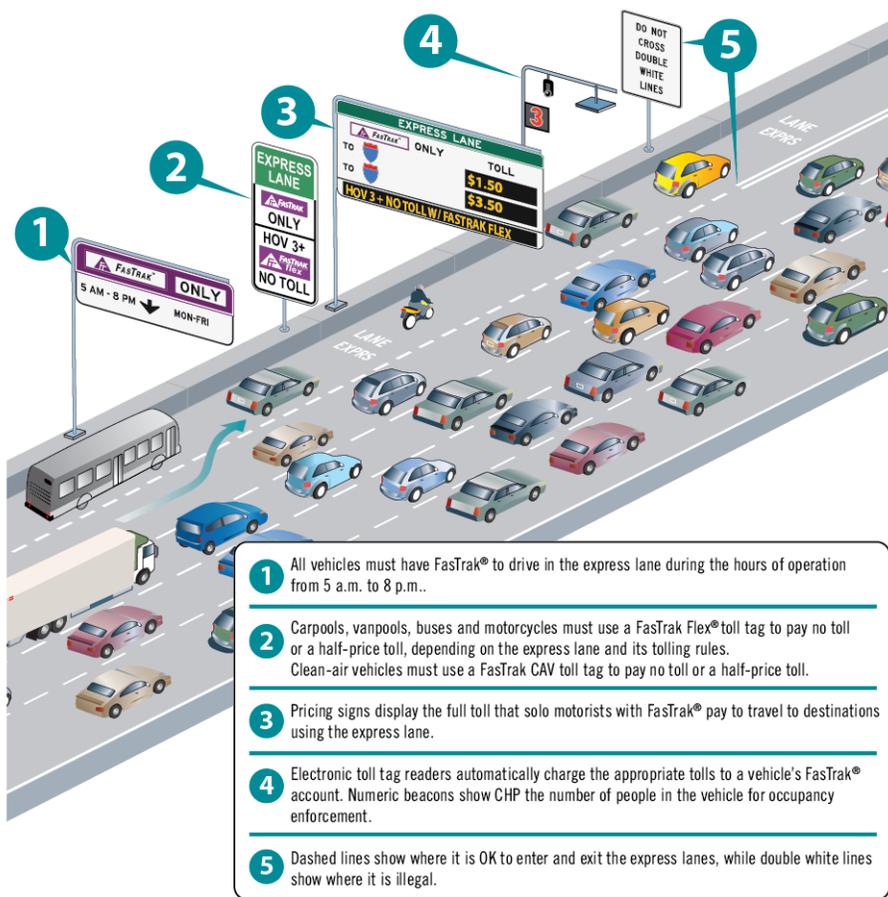
gas emissions. To meet these goals, Bay Area Express Lanes maximize use of our highways by A) filling any empty space in existing HOV lanes, B) improving operations in existing HOV lanes through better carpool enforcement and strategies to prevent lane slowdowns, and C) filling gaps in the HOV lane system to encourage more public transit and carpooling.



2. How Express Lanes Work

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

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



The figure to the left explains how to use Bay Area Express Lanes. MTC Express Lanes will be “open” access to the extent possible, meaning drivers will enter and exit the express lanes similar to how they enter and exit HOV lanes today. Areas prone to 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

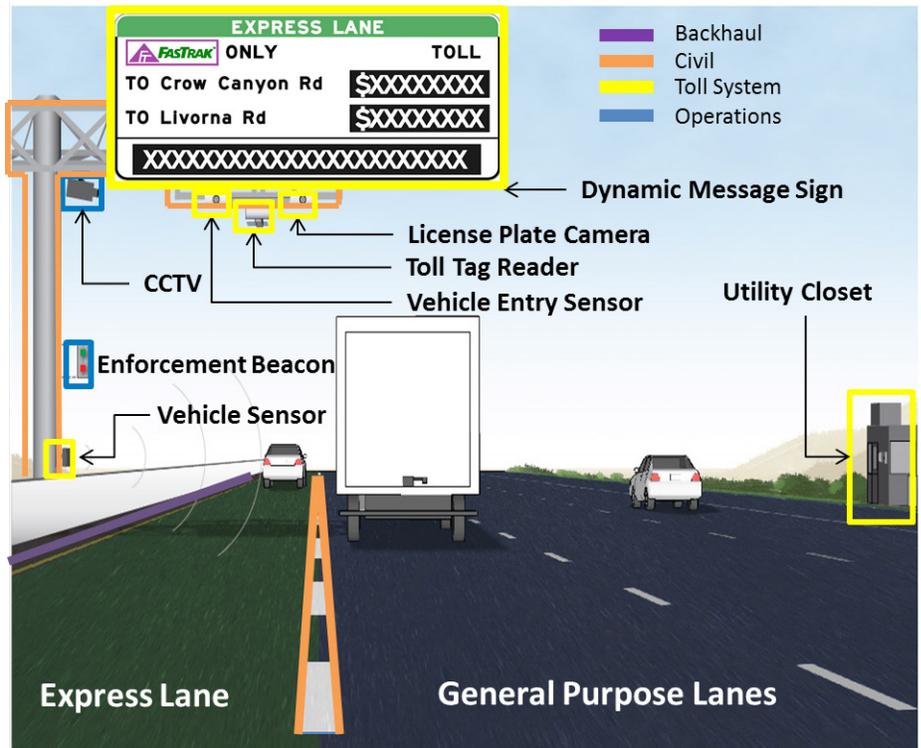
The toll system consists of two components, the in-lane system and the back-end "host" system. The lane system consists of all the equipment on the highway needed to operate the toll system including toll tag readers, cameras and vehicle detection. The host system serves as the brain of the toll system,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

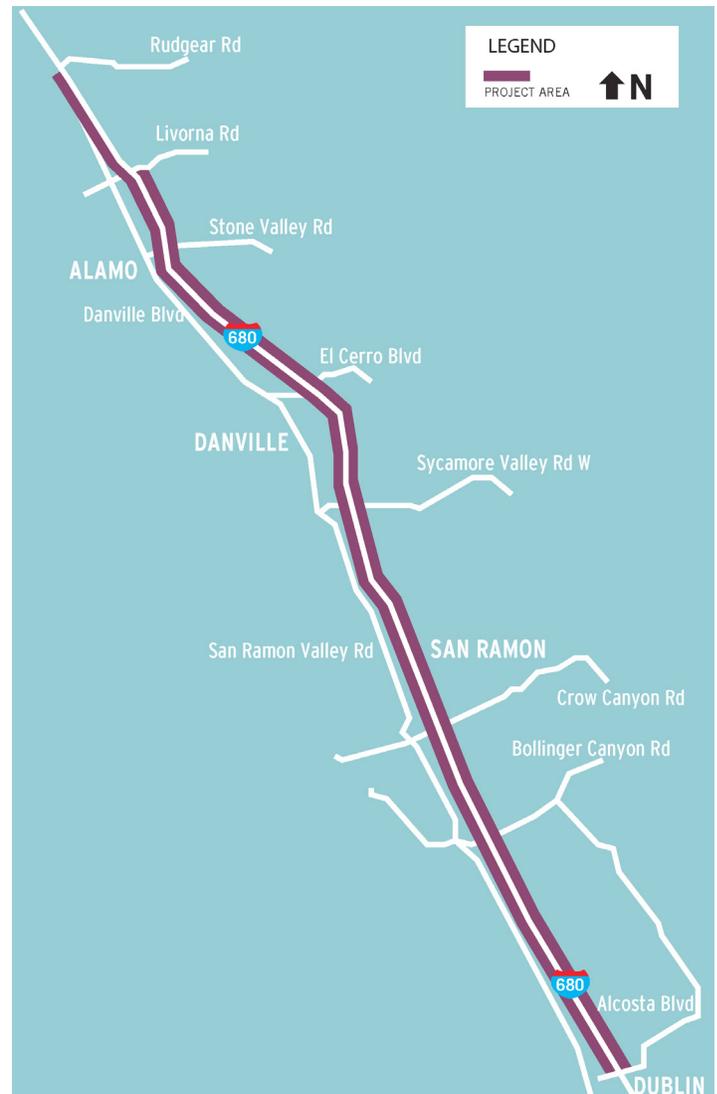
Project Description

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.

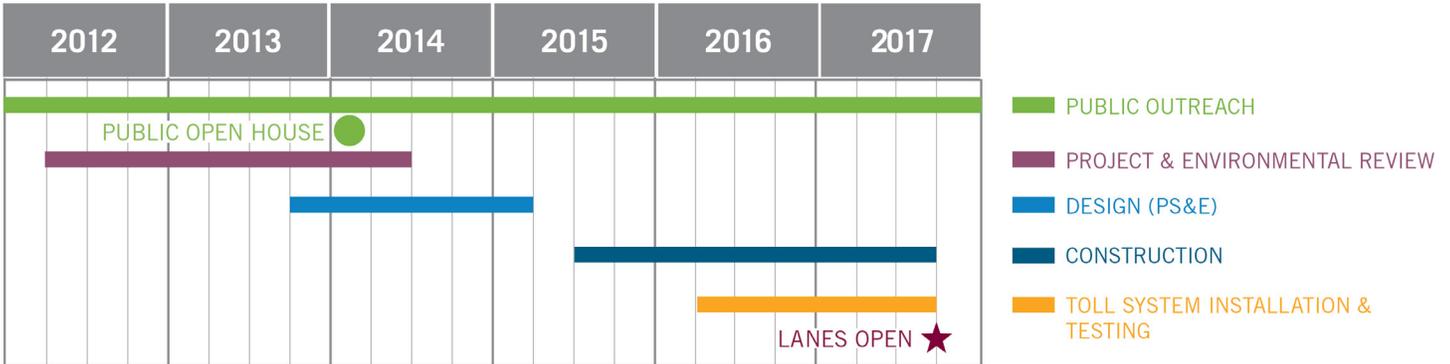


Current Project Activities

- 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.

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

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

Project Highlights and Progress

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



- All PG&E service connections are complete.
- In June 2020, the civil contractor completed new restricted access striping on the corridor and installed some signage. A public information campaign explained the changes.
- Final signing and pavement marking civil work to transition the HOV lanes to express lanes was completed in August and September. Until tolling begins, the lanes will function as HOV 2+ only lanes.
- The toll system integrator finished equipment installation in August 2020 and toll system testing in September 2020.
- 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 & 2020).

Current Project Activities

- On October 2, 2020, BAIFA began tolling on the I-880 Express Lanes.
- Beginning the fourth quarter of 2020, 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



*Includes I-880 median barrier improvements.

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 as of 9/30/20 ⁽⁴⁾
				July 2018 Amendment	Sept. 2018 Amendment	Expended as of 9/30/20	
139.1	139.1			135.5	139.1	119.0	99%

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.

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

APPENDIX C

I-680 Contra Costa Express Lanes Operations Report

I-680 Contra Costa Express Lanes Performance Report

2nd Quarter 2021: April – June

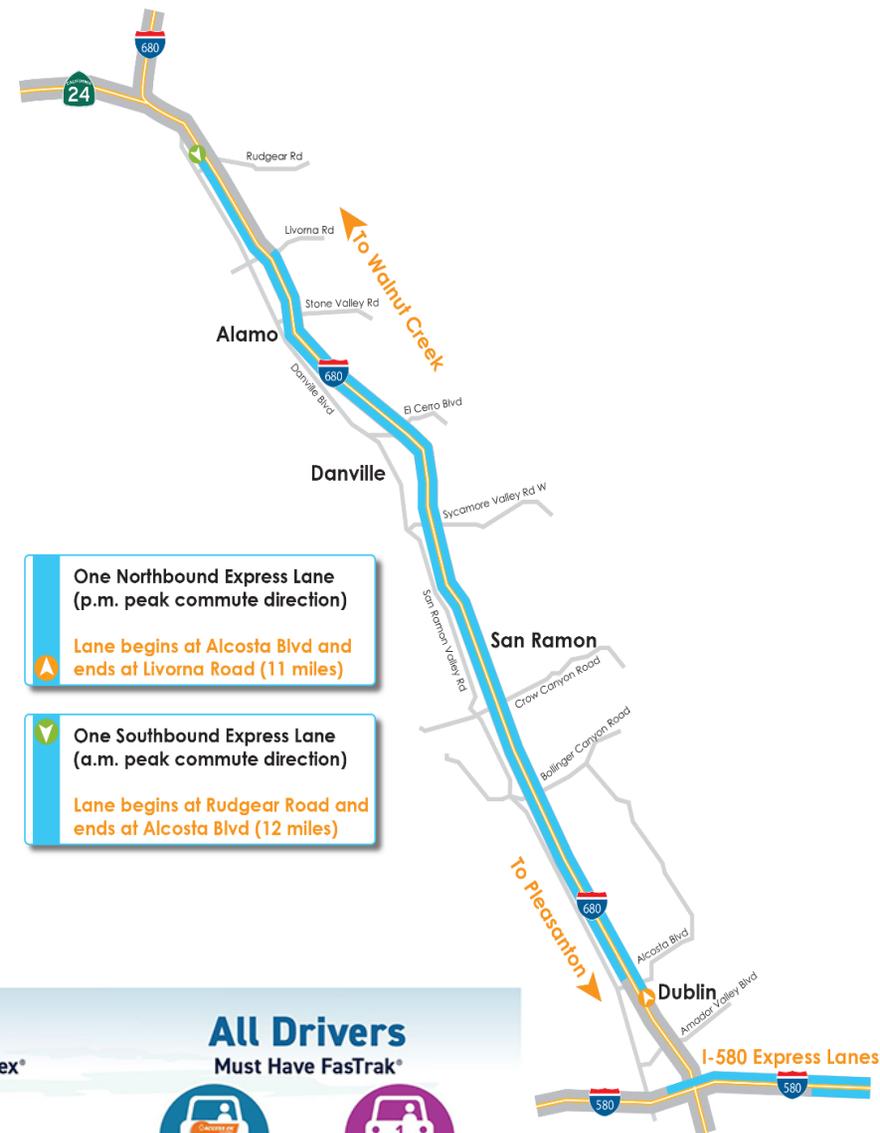


Bay Area Infrastructure Financing Authority
Submitted November 2021

I-680 Contra Costa Express Lanes Policies

- Tolling Hours are 5 a.m. to 8 p.m. Monday – Friday.
- All drivers must have a FasTrak® account to avoid fines.
 - Solo drivers can carry a standard FasTrak tag* or a FasTrak Flex tag set to 1 or pay tolls via license plate.
 - Carpools (2+) travel toll-free with FasTrak Flex toll tags set to 2 or 3+.
 - Motorcycles travel toll-free with FasTrak Flex toll tags set to 3+.
 - Solo-drivers in eligible clean-air vehicles (CAV) pay half-price tolls with FasTrak CAV toll tags set to 1.

*Standard FasTrak tags do not have a switch and were issued prior to January 2020.



Carpools	All Drivers	
Must Have FasTrak Flex®	Must Have FasTrak®	
<p>FREE</p>	<p>HALF TOLL</p>	<p>FULL TOLL</p>
<p>Motorcycles are FREE with FasTrak Flex toll tag set to 3+.</p>	<p>Clean Air Vehicles pay half-price tolls with FasTrak CAV toll tag.</p>	

Q2 2021 Performance Highlights

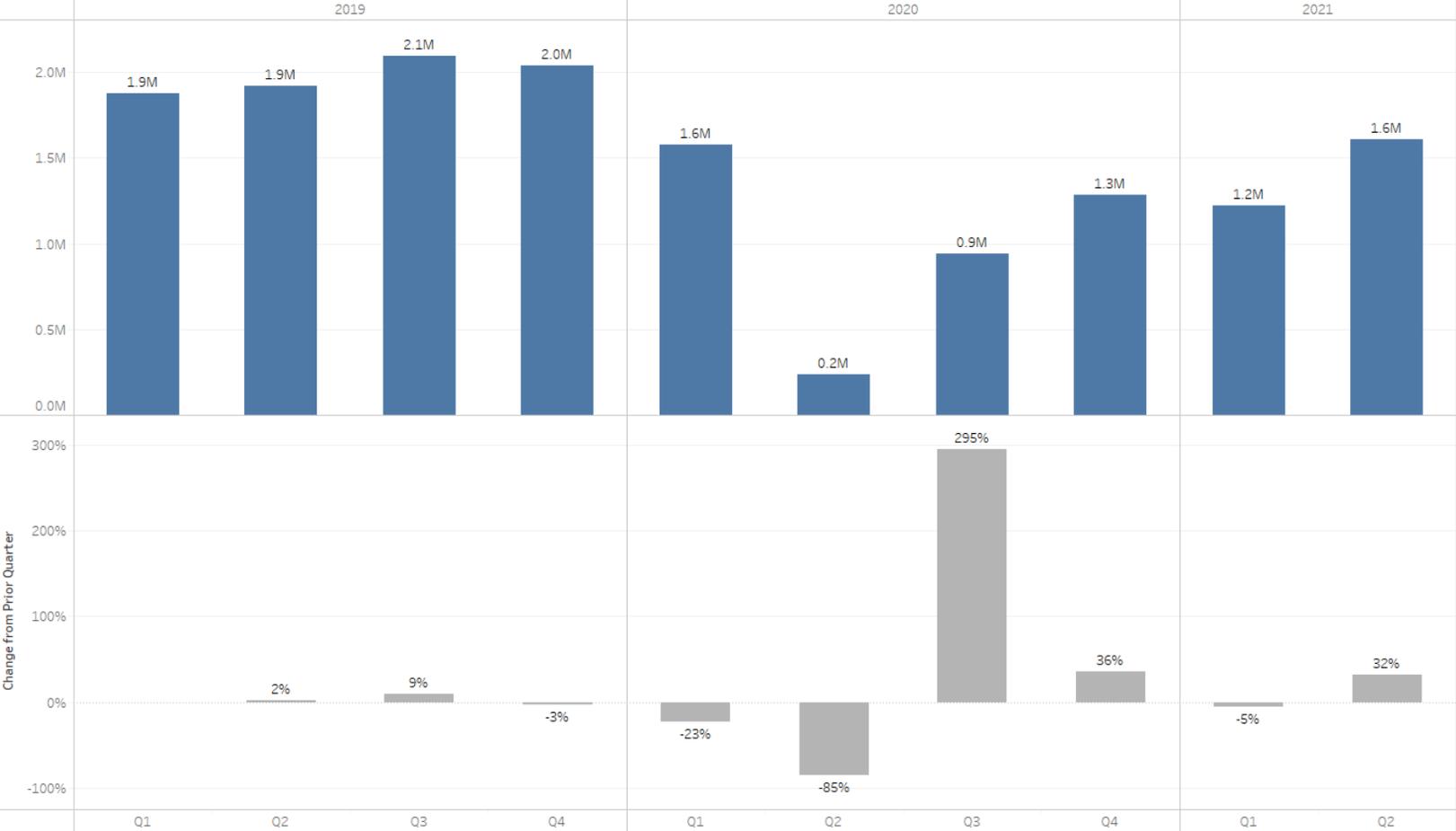
- Express lane use continues to rebound from the COVID-19 lows of a year ago. Trips were up 32% from the prior quarter. Still, they were down 16% from Q2 2019*. The decline is greater southbound than northbound.
- The share of toll-free trips was down 4% from Q2 2019 suggesting that COVID-19 has negatively impacted carpool trips.
- 11% of express lane trips were violations - express lane trips made with neither a FasTrak account nor a toll tag. The rate is higher than the pre-COVID average of 5%.
- Quarterly toll revenue was up 100% over Q1 2021, but down 31% from Q2 2019 since paid trips were down 20% and the average toll paid was down 21%.
- Corridor-length travel was slowest between 5 and 6 p.m. northbound and between 8 and 9 a.m. southbound. At these times, the northbound express lane corridor-length speed averaged 10 mph faster than the general purpose lanes, while southbound it averaged 11 mph faster. The highest average express lane tolls were assessed in these hours at \$4.60 northbound and \$0.70 southbound.
- Corridor traffic peaked northbound at El Cerro Blvd. between 4 and 5 p.m., where and when the express lane speed averaged 54 mph and the general purpose lane speed averaged 40 mph.
- Toll, traffic volume, and speed data show less traffic and lower express lane demand in the morning, suggesting that the afternoon traffic resurgence was driven by more than commute trips.
- CHP made 727 enforcement contacts, of which 35% resulted in carpool occupancy citations.
- About half of express lane drivers carried toll tags and made an average of 1.5 trips per month. Drivers without FasTrak tags in their vehicles used the express lanes less than once per month, on average.

**Year-over-year comparisons identify trends without the influence of seasonality, but because Q2 2020 was heavily impacted by COVID-19, this report compares Q2 2021 data to Q2 2019, the most recent second quarter not impacted by COVID-19.*

The goal of express lanes is to maximize available lane capacity while keeping traffic moving, thus encouraging carpooling and transit ridership.

Express Lane Trips

Vehicle Trips Made in the Express Lanes Each Quarter

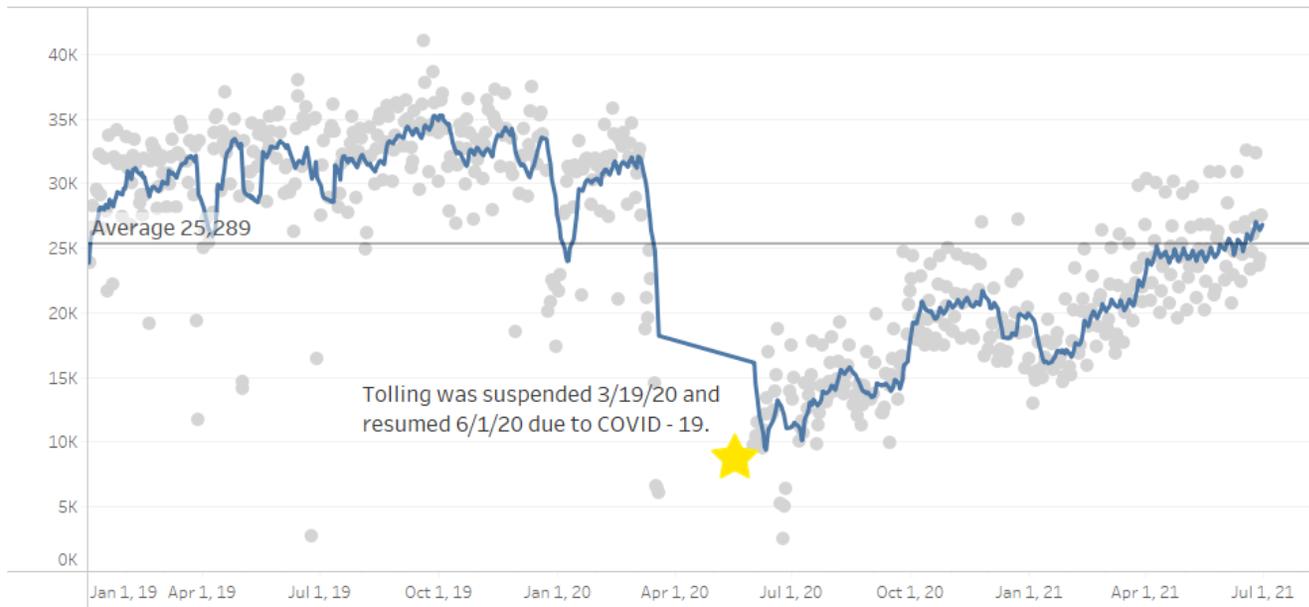


1.6 million express lane trips were made in Q2 2021, up 32% from Q1 2021, but down 16% from Q2 2019.

Average Daily Express Lane Trips

The number of tolling days varies per quarter, so Average Daily Trips (ADT) is best for seeing trends.

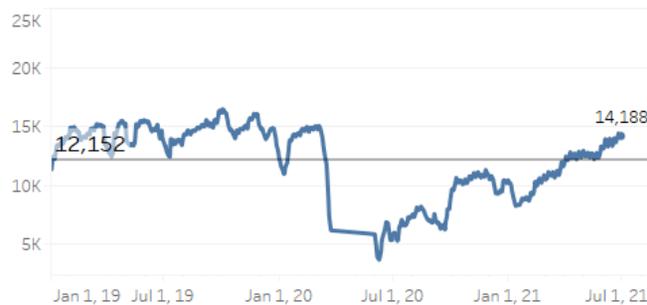
Average Daily Trips (ADT) with 10-day Moving Average



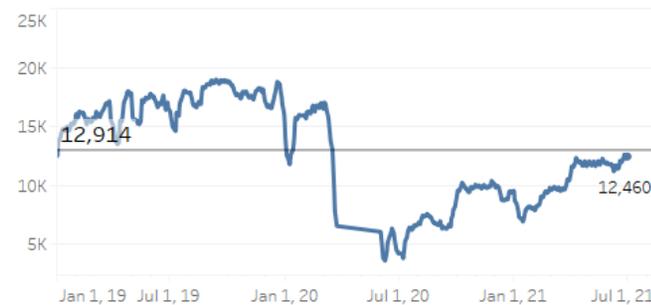
ADT since January 2019 is about 25,300. Northbound ADT has rebounded more than southbound ADT.

Grey dots: Daily trips
Blue line: Moving average
Top graph: Northbound and southbound

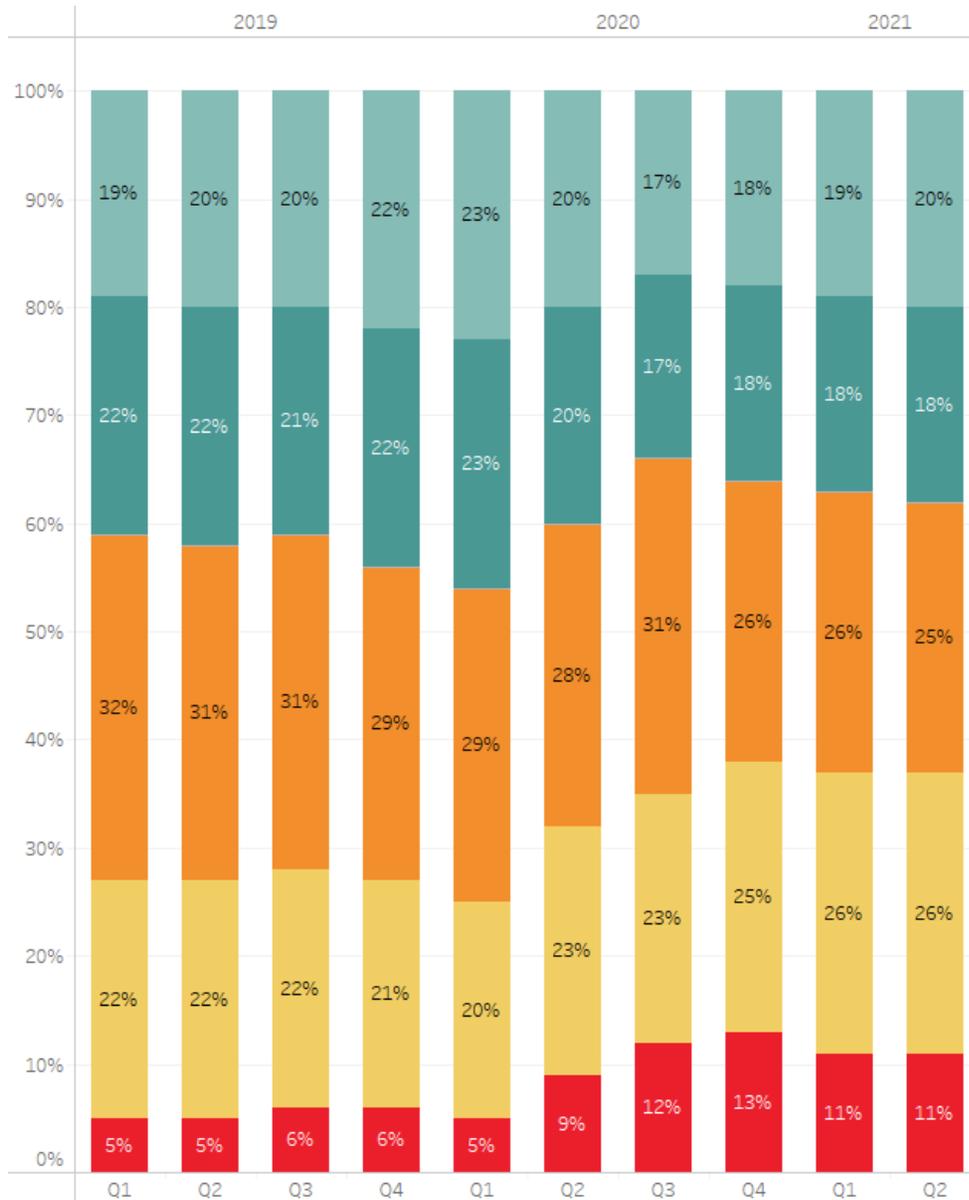
Northbound (10-day Moving Average)



Southbound (10-day Moving Average)



Trip Type



Toll-free trips = 38%

- Down 4% from Q2 2019
- 20% HOV3+
- 18% HOV2

Paid trips = 52%

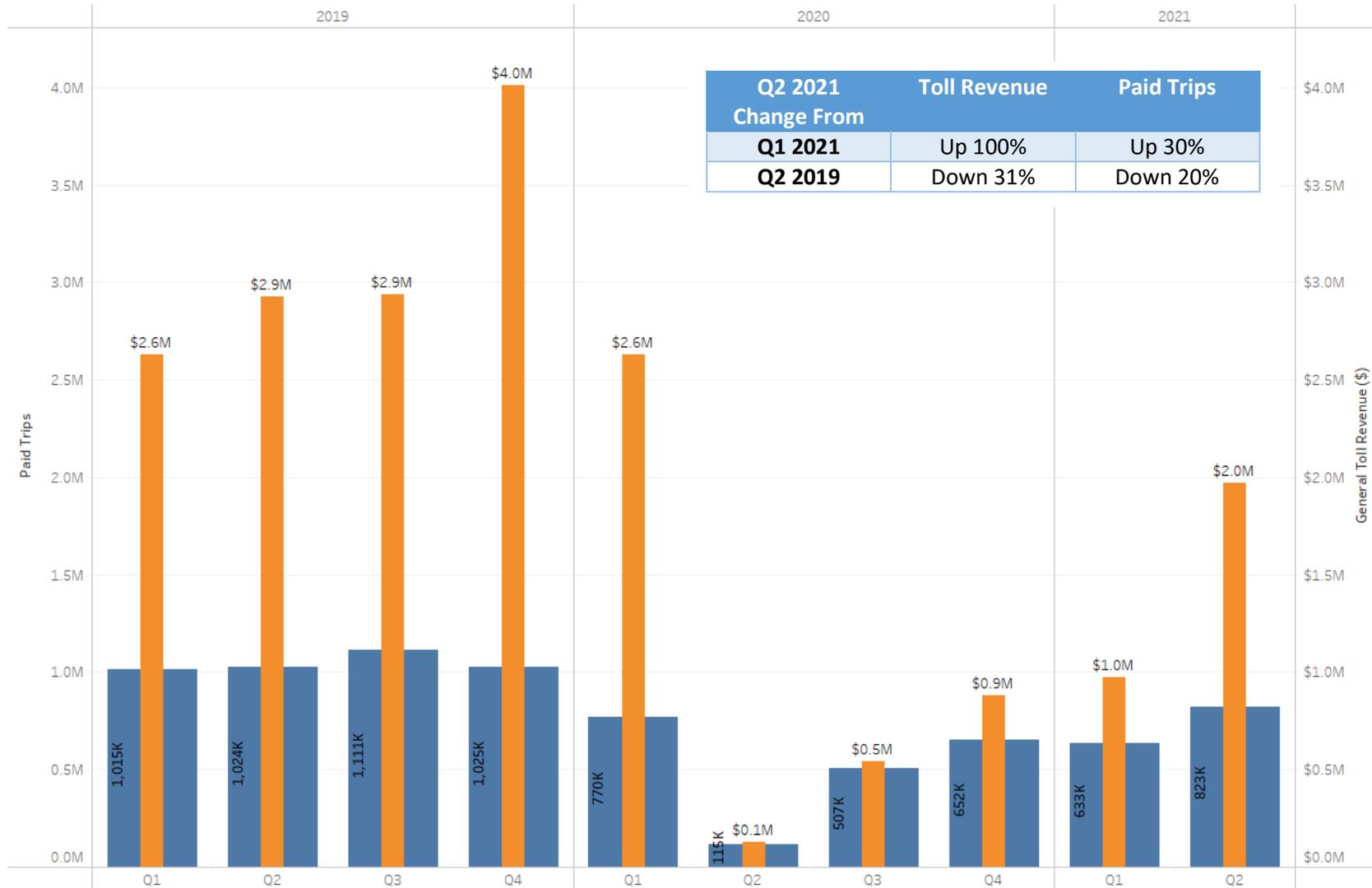
- 1% half toll (single occupant Clean Air Vehicles (CAV))
- 51% full toll
 - 25% made with toll tags
 - 26% made with license plates (LP) matched to FasTrak accounts

Violation trips = 11%

- No toll tag, and license plate was not matched to a FasTrak account

Toll Revenue* and Paid Trips

*Revenue from general tolls. Does not include revenue from violation fees.



Q2 2021 Change From	Toll Revenue	Paid Trips
Q1 2021	Up 100%	Up 30%
Q2 2019	Down 31%	Down 20%

■ Paid Trips
■ Toll Revenue

Speed by Location and Time: Quarter Average



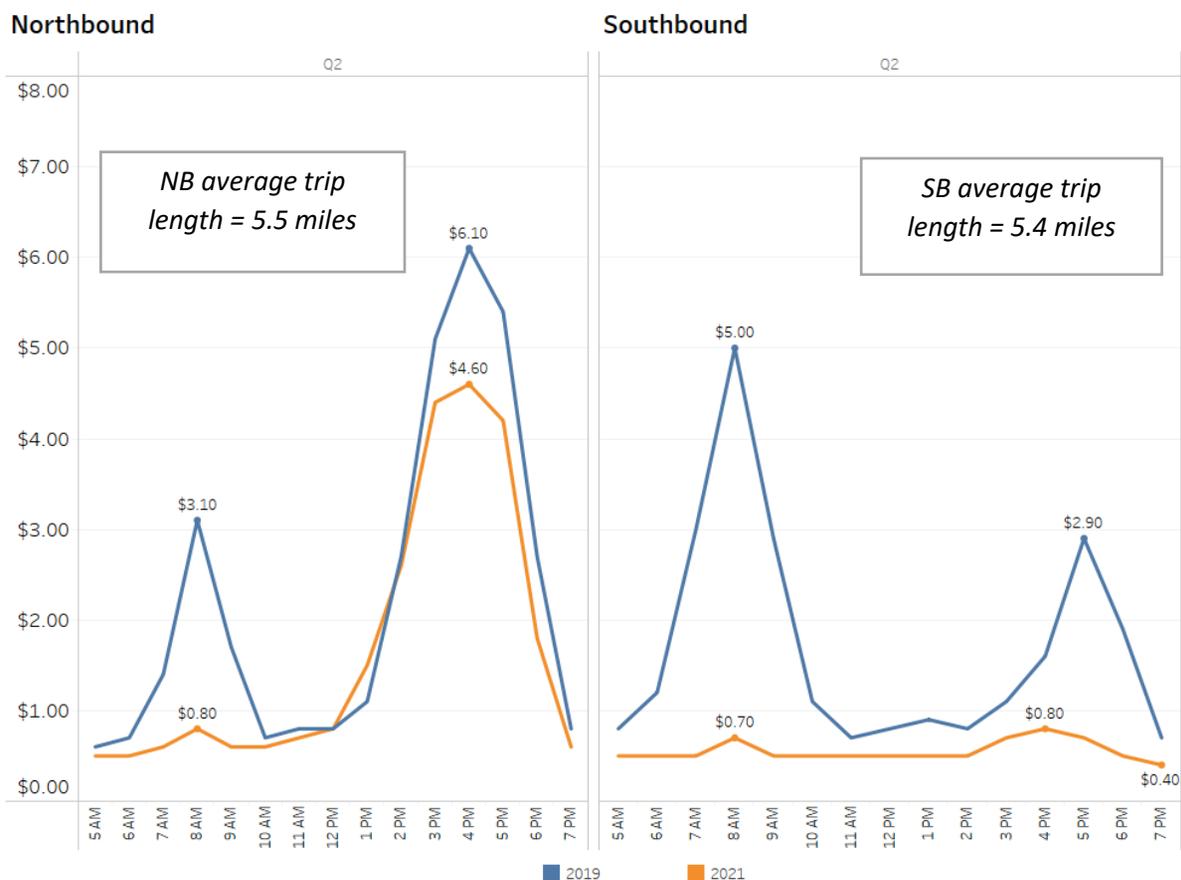
Q2 2021 northbound and southbound average express lane speeds stayed at 65 mph or higher. Northbound general purpose lane speeds slowed below 45 mph in the afternoon at the north end of the corridor.

Peak Traffic	
	4 p.m. – 5 p.m. Northbound at El Cerro
Express Lane	Speed: 54 mph Volume: 1130 vehicles
GP Lane (average)	Speed: 40 mph Volume: 1040 vehicles

Corridor-length Slowest Travel	
Northbound	5 p.m. – 6 p.m.
Express Lane	69 mph
GP Lane (average)	59 mph
Difference	10 mph
Southbound	8 a.m. – 9 a.m.
Express Lane	79 mph
GP Lane (average)	68 mph
Difference	11 mph

Average Toll Paid by Time of Day

Q2 Comparison - 2019 to 2021

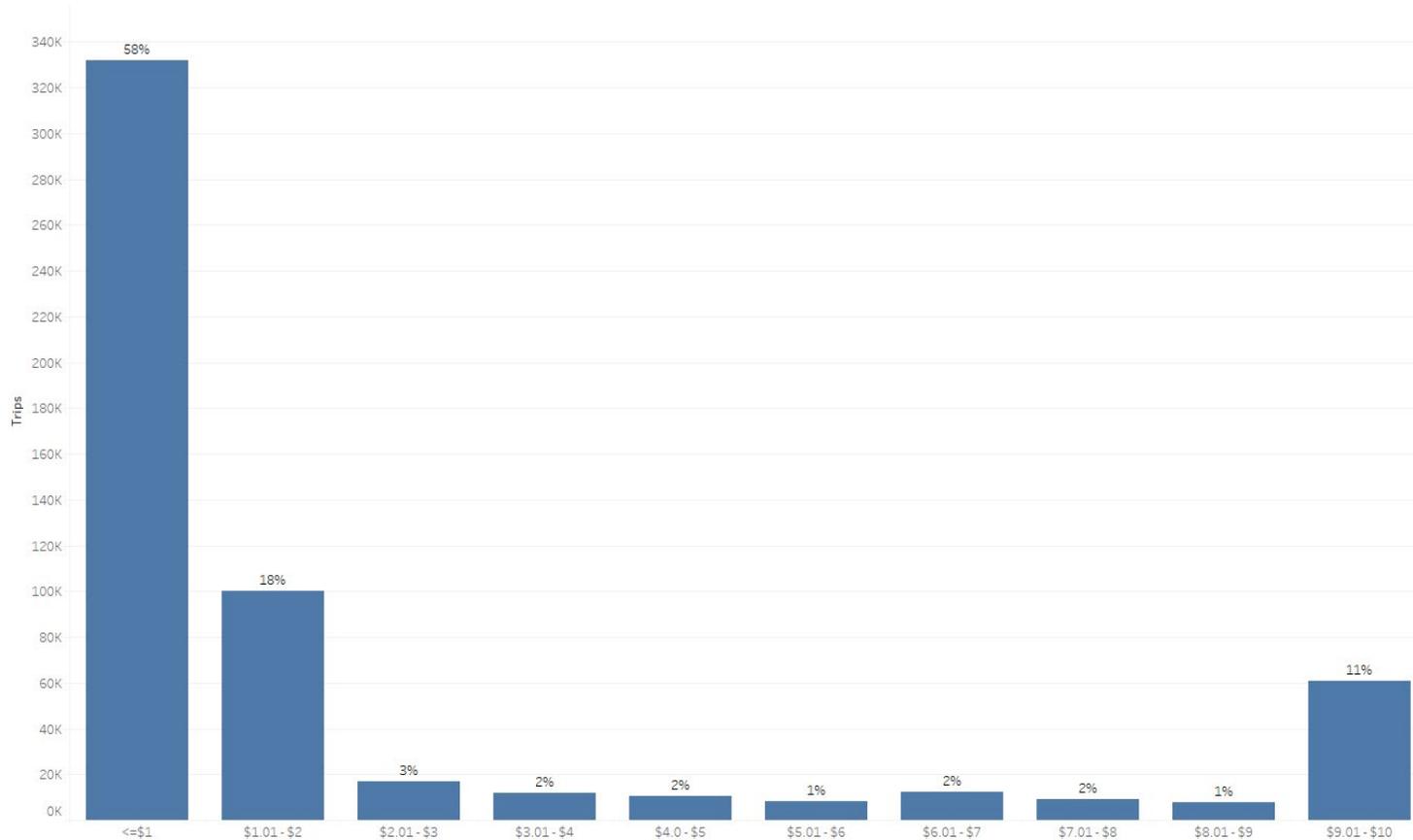


Northbound, Q2 2021 average tolls paid peaked at \$4.60 between 4 and 5 p.m., \$1.50 less than the Q2 2019 peak. Continuing a trend observed since Q3 2020, tolls do not peak in the morning in either direction, nor do they peak southbound in either the morning or afternoon. The Q2 2021 southbound a.m. toll reached \$0.70 compared to \$5.00 in Q2 2019.

THE AVERAGE TOLL PAID IN Q2 2021 WAS \$3.10, 21% LOWER THAN Q2 2019.

Toll Distribution

Drivers made 823,000 paid express lane trips in Q2 2021, up 20% from the prior quarter. For 76% of the paid trips, the assessed toll was \$2 or less; for 11% it was more than \$9.



How Drivers Use the Lanes

In Q2 2021, about 440,000 unique vehicles made about 1.6 million express lane trips.

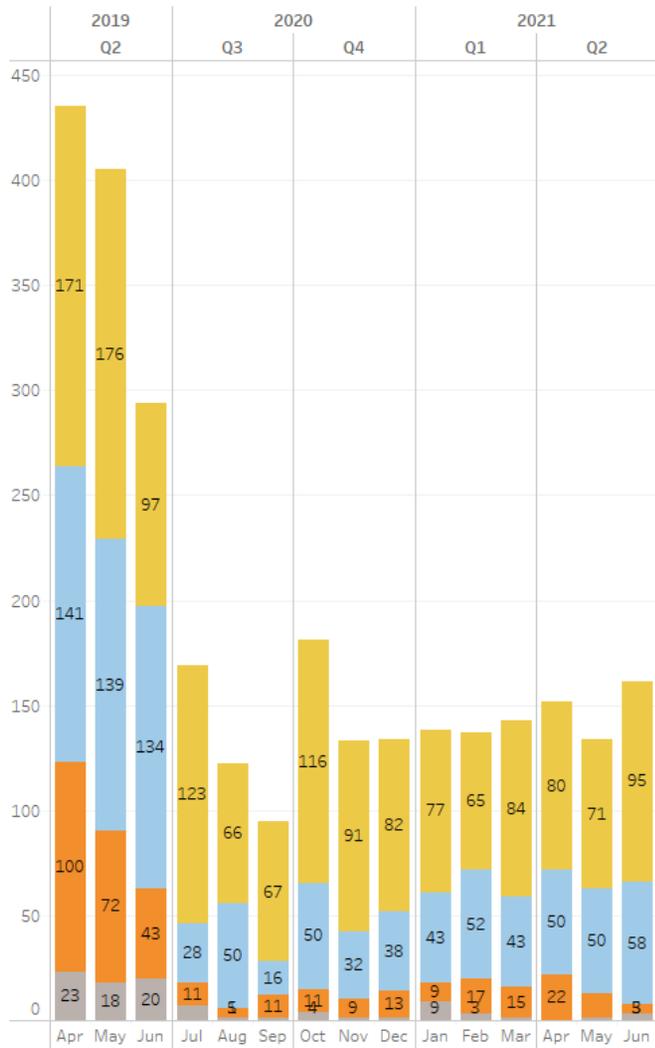
220,000 of these vehicles (49%) carried toll tags and made over 1 million express lane trips (63% of trips). Half of these drivers (110,000) made just one express lane trip in the quarter. Overall, these drivers averaged 4.6 express lane trips in the quarter, or 1.5 trips per month.

225,000 of the unique vehicles (51%) did not carry toll tags and made almost 600,000 express lane trips (37% of trips). Over half of these drivers 130,000 (56%) made just one express lane trip in the quarter. Overall these drivers averaged 2.7 express lane trips in the quarter, or 0.9 trips per month.

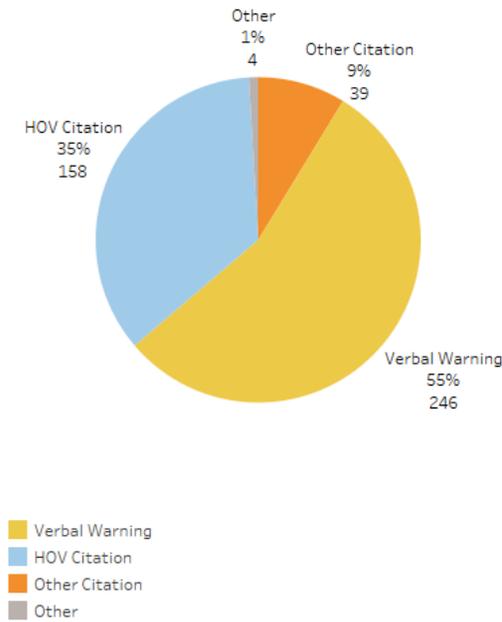
About 30% of the license plate trips made were not matched to FasTrak accounts, resulting in the 11% violation rate shown earlier.

	Vehicles	EL Trips	Trips Per Vehicle Per Month
With Toll Tags	219,000 (49%)	1 million (63%)	1.5
Without Toll Tags	224,000 (51%)	595,000 (37%)	0.9
Total	443,000	1.6 million	

CHP Enforcement



Q2 2021



BAIFA requested about 50% fewer enforcement hours in Q2 2021 than in Q2 2019 due to COVID-19 related toll revenue and traffic decreases. CHP filled 88% of requested hours.

CHP made 727 enforcement contacts in Q2 2021, 35% of which were HOV citations.

The average cost per enforcement contact was \$98.

COVID-19 Impacts

Daily Trips

Averages	Pre-COVID-19 (Jan 2018 - Feb 2020)	COVID (June 2020 – June 2021)	Q2 2021
Average Daily Express Lane Trips	32,300	19,100	25,100
Share of Toll-Free Trips	41%	37%	38%

Tolls

		Q2 2019	Q2 2021	%/share Change
Average Assessed Toll	SB	\$2.90	\$0.70	-76%
	NB	\$5.40	\$4.20	-22%
Maximum Assessed Toll	SB	\$8.50	\$8.75	3%
	NB	\$8.50	\$10.00	18%
Share of Tolled Trips Paying Maximum Toll	SB	2.7%	0.1%	-2.6%
	NB	6.7%	17%	10.3%

Express lane traffic continued to rebound from the pandemic. Average daily express lane trips since June 1, 2020 (when tolling resumed after the start of the pandemic) through June 30, 2021 were down 41% from before the start of the pandemic, but were down only 22% in the most recent quarter. Q2 2021 average assessed tolls were lower compared to Q2 2019, especially southbound. Changes were made to the toll pricing algorithm to manage express lane demand in fall 2019. As a result, maximum tolls increased, and so did the share of northbound toll-paying customers who paid the maximum toll.

COVID-19 Impacts

Peak Period Traffic Impacts

Averages	Southbound (6 AM – 9 AM)			Northbound (3 – 6 PM)		
	Pre-COVID Jan 2018 through Feb 2020	COVID June 2020– June 2021	Q2 2021	Pre-COVID Jan 2018 through Feb 2020	COVID June 2020– June 2021	Q2 2021
Express Lane Speed	67	80+	80+	62	72	67
Express Lane Volume	950	430	563	880	618	760
General Purpose Lane Speed	60	72	76	56	64	60
General Purpose Lane Volume	1,380	1,100	1,270	1,370	1,280	1,300

Although express lane traffic is resuming from the lows of the pandemic, it did not rebound to pre-pandemic levels in Q2 2021.

Express lane volume was down 41% southbound and 14% northbound compared to pre-COVID.

General purpose lane volume returned to within 8% of its pre-pandemic level southbound. Northbound, it returned to within 5%.

Southbound Q2 2021 speeds remained elevated, and southbound peak traffic continued to move well. Northbound, speeds were still faster than pre-pandemic, but have come down as northbound peak traffic comes closer to the pre-pandemic state.

For more information, visit expresslanes.511.org or mtc.ca.gov/operations/traveler-services/bay-area-express-lanes



APPENDIX D

I-880 Alameda Express Lanes Operations Report

I-880 Express Lanes Performance Report

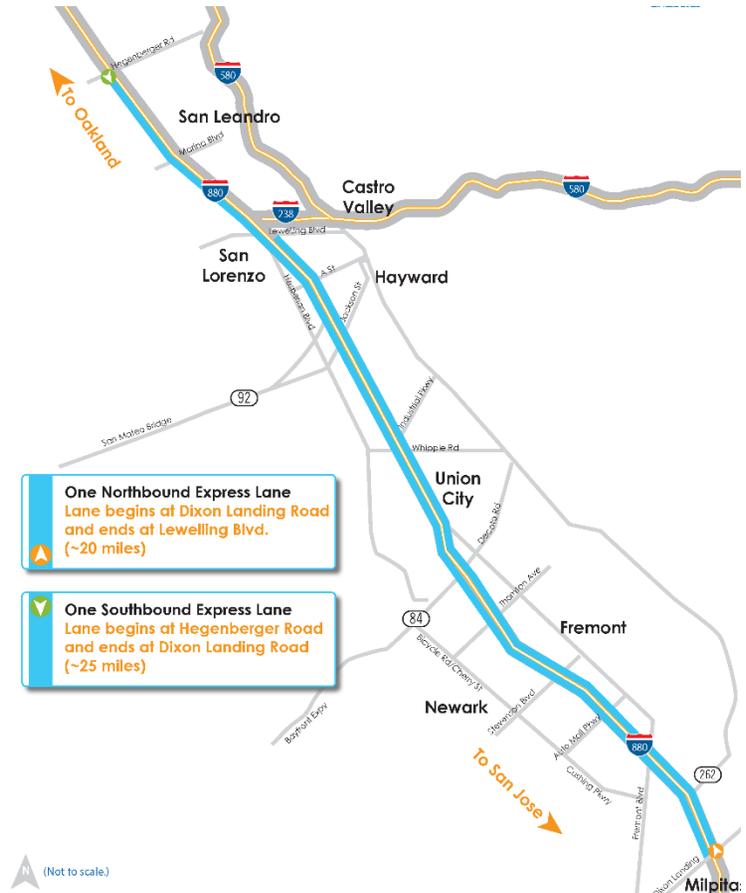
2nd Quarter 2021: April – June



Bay Area Infrastructure Financing Authority
Submitted November 2021

I-880 Express Lanes Policies

- Tolling Hours are 5 a.m. to 8 p.m. Monday – Friday.
- All drivers must have a FasTrak® account to avoid fines.
 - Solo drivers can carry a standard FasTrak tag* or a FasTrak Flex tag set to 1 or pay tolls via license plate.
 - Carpools (3+) travel toll-free with FasTrak Flex toll tags set to 3+.
 - Carpools (2) pay half-price tolls with FasTrak Flex toll tags set to 2.
 - Motorcycles travel toll-free with FasTrak Flex toll tags set to 3+.
 - Solo-drivers in eligible clean-air vehicles (CAV) pay half-price tolls with FasTrak CAV toll tags.



*Standard FasTrak tags do not have a switch and were issued prior to January 2020.

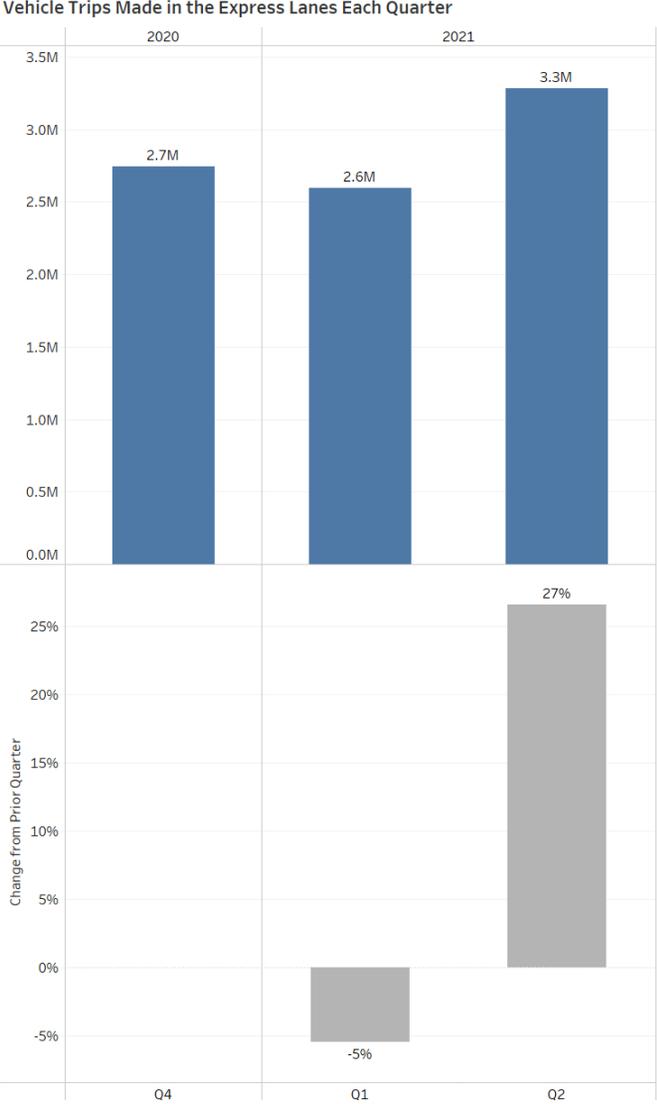
Carpools		All Drivers	
Must Have FasTrak Flex®		Must Have FasTrak®	
Motorcycles are FREE with FasTrak Flex toll tag set to 3+.		Clean Air Vehicles pay half-price tolls with FasTrak CAV toll tag.	

Q2 2021 Performance Highlights

- Q2 2021 express lane trips were up 27% from the prior quarter to 3.3 million trips. More trips are made southbound as the lane is 5 miles longer and more vehicles use the lane per mile.
- The share of toll-free trips (HOV 3+) was up 4% from Q1 2021. The share of carpool trips (FasTrak tags set to the 2 or 3+ position) was 37%, up 4% from Q1 2021.
- 16% of express lane trips were violations - express lane trips made with neither a FasTrak account nor a toll tag. The rate is lower than the prior two quarters.
- Quarterly toll revenue was up 82% over Q1 2021. Paid trips were up 29% and the average toll paid was up almost 60%.
- Corridor-length northbound travel was slowest between 3 and 4 p.m. when express lane speed averaged 23 mph faster than the general purpose lanes and the average express lane toll assessed was \$5.50. Corridor-length southbound travel was slowest between 5 and 6 p.m. when express lane speed averaged 16 mph faster than the general purpose lanes and the average express lane toll assessed was \$3.80.
- Spot traffic was heaviest northbound around Whipple Rd. between 3 and 4 p.m., when the express lane speed averaged 43 mph and the general purpose lane speed averaged 16 mph. The express lane moved 47% more vehicles than the average general purpose lane in this hour at this location.
- CHP made 1,434 enforcement contacts of which 31% resulted in citations for crossing double white lines.
- About half of express lane drivers carried toll tags and made an average of 2.3 express lane trips per month. Drivers without FasTrak tags made an average of 1.2 trips per month.

The goal of express lanes is to maximize available lane capacity while keeping traffic moving, thus encouraging carpooling and transit ridership.

Express Lane Trips

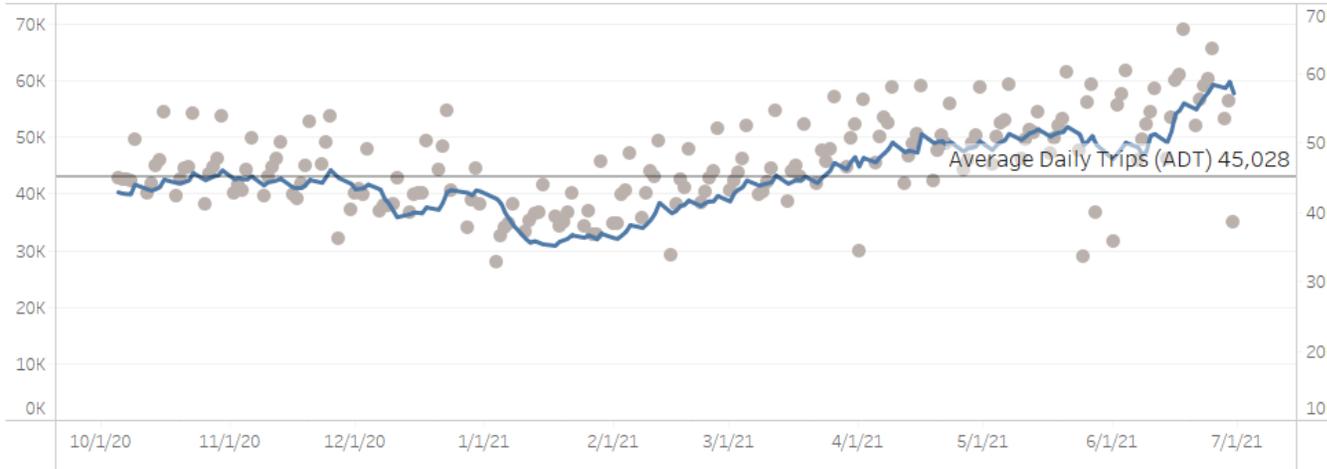


3.3 million express lane trips were made in Q2 2021, up nearly a third from Q1 2021.

Average Daily Express Lane Trips

The number of tolling days varies per quarter, so Average Daily Trips (ADT) is best for seeing trends.

Average Daily Trips (ADT) with 10-day Moving Average



ADT since the express lanes opened is 45,000. Average ADT declined in January and February, but otherwise has grown since the start of tolling.

The southbound express lane is 25% longer than the northbound, and southbound ADT is 30% higher than northbound. More vehicles per mile are using the lanes southbound than northbound.

Northbound (10-day Moving Average)

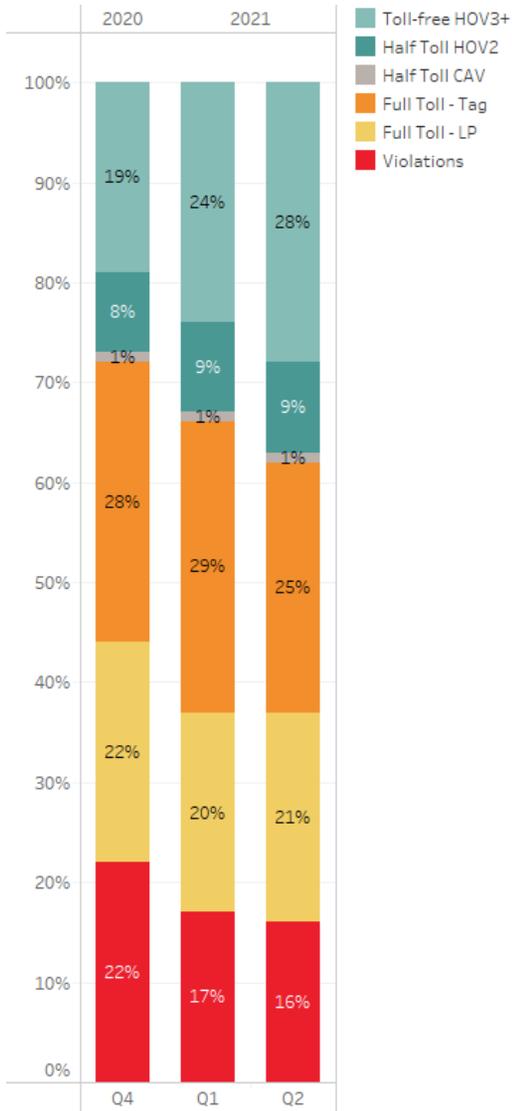


Southbound (10-day Moving Average)



Grey dots: Daily trips
Blue line: Moving average
Top graph: Northbound and southbound

Trip Type



Toll-free trips = 28%

- HOV 3+
- Share up 4% from Q1 2021

Paid trips = 56%

- 10% half toll
 - 9% HOV 2
 - 1% single occupant Clean Air Vehicles (CAV)
- 46% full toll
 - 25% made with toll tags
 - 21% made with license plates (LP) matched to FasTrak accounts

Violation trips = 16%

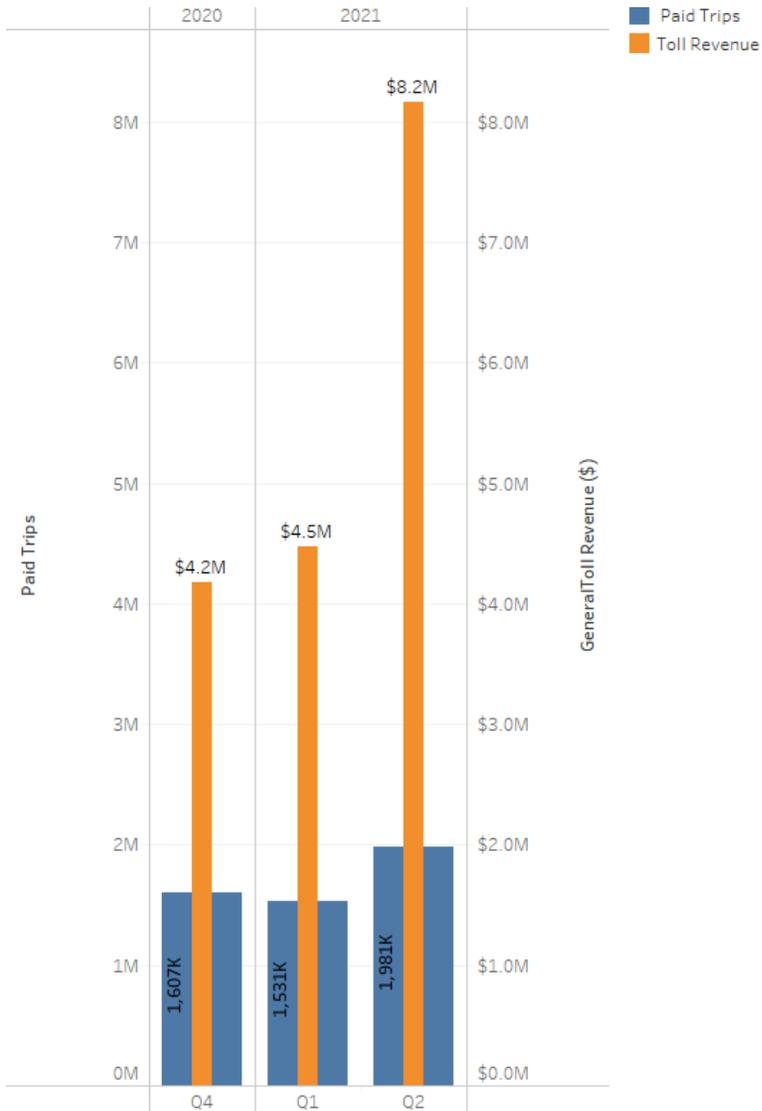
- No toll tag and license plate not matched to FasTrak account

Carpool trips (HOV 3+ and HOV 2) = 37%

- Share up 4% from Q1 2021

Toll Revenue* and Paid Trips

*Revenue from general tolls. Does not include revenue from violation fees.

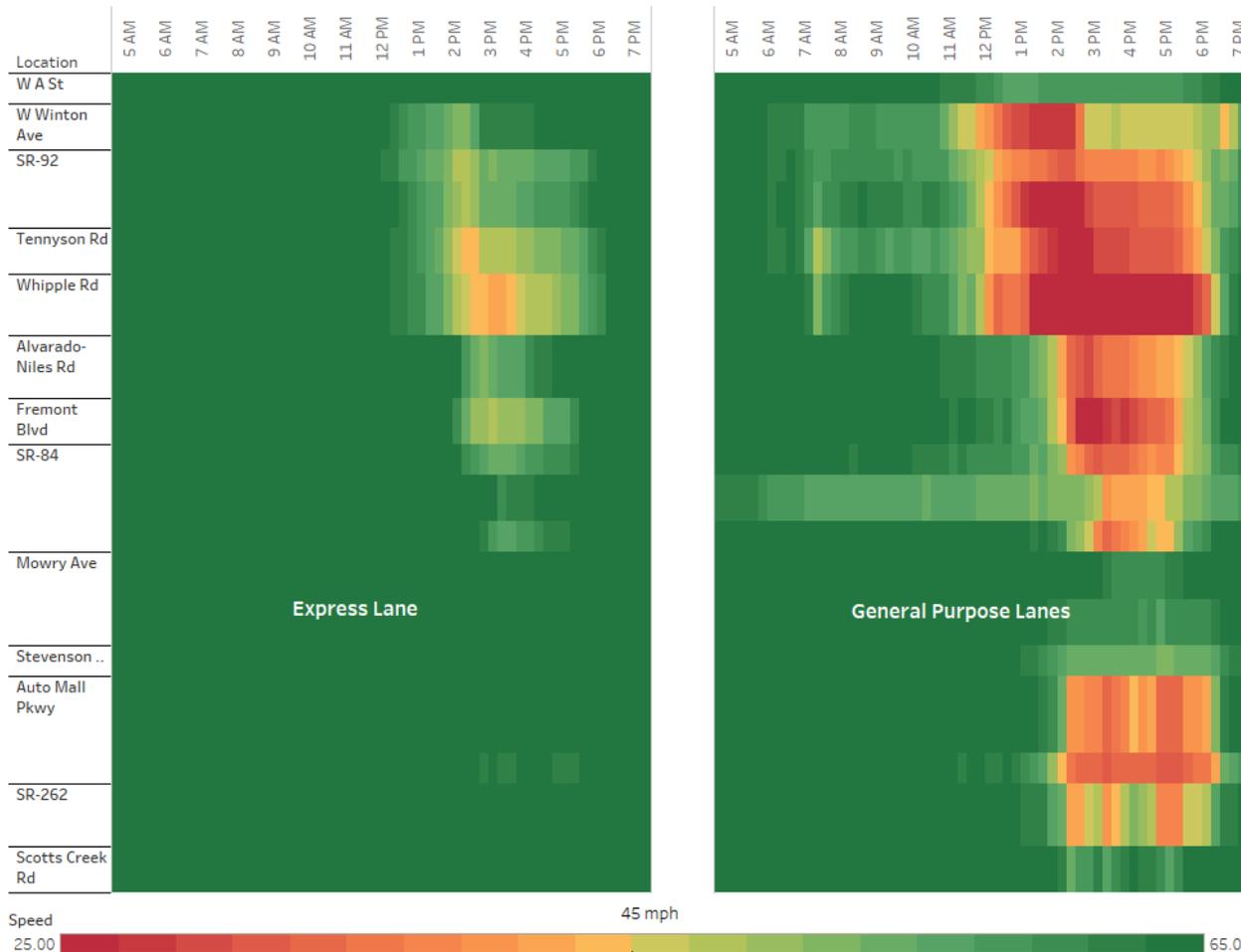


General toll revenue was up 82% from Q1 2021. Paid trips were up 29%, and the average toll was up 60% (see page 10).

Speed by Location and Time: Quarter Average

Northbound

Northbound



Northbound express lane average speeds slowed below 65 mph at the northern end of the corridor in the afternoon and evening. General purpose lane average speeds were below 45 mph for most of the corridor length for most of the afternoon and evening.

Northbound Peak Traffic	
	3 p.m. – 4 p.m. Around Whipple Road
Express Lane	Speed: 43 mph Volume: 1160 vehicles
GP Lane (average)	Speed: 16 mph Volume: 790 vehicles

Northbound Corridor-length Slowest Travel	
	3 p.m. – 4 p.m.
Express Lane	58 mph
GP Lane (average)	35 mph
Difference	23 mph

Southbound

Southbound



Southbound express lane average speeds stayed at or above 50 mph. General purpose lane average speeds were between 40 and 55 mph for most of the length of the corridor and tolling day.

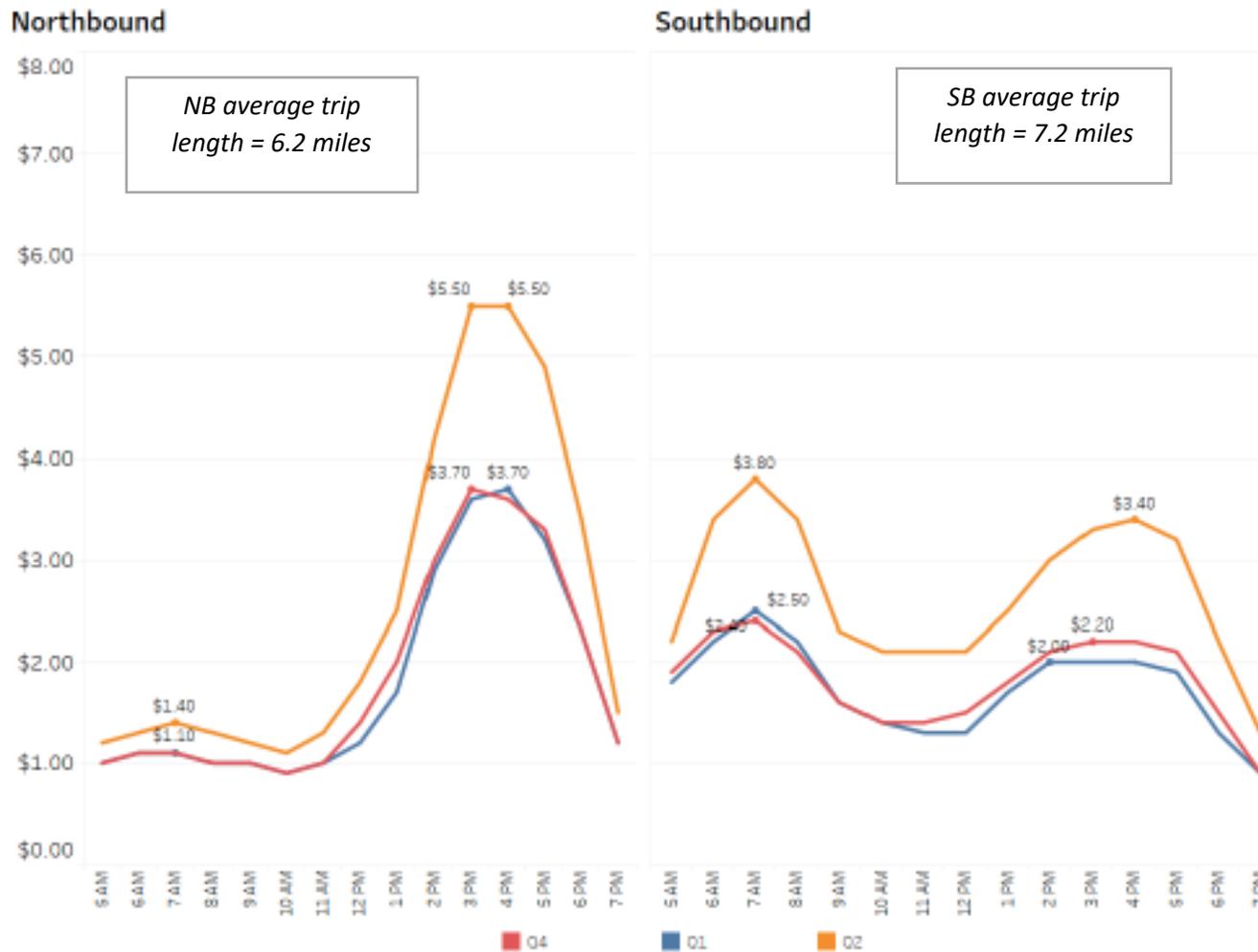
Southbound Peak Traffic	
	5 p.m. – 6 p.m. Around Thornton Ave.
Express Lane	Speed: 58 mph Volume: 978 vehicles
GP Lane (average)	Speed: 38 mph Volume: 1551 vehicles

Southbound Corridor-length Slowest Travel	
	5 p.m. – 6 p.m.
Express Lane	67 mph
GP Lane (average)	49 mph
Difference	16 mph

Quarterly Average Toll Paid by Time of Day

Q2 2021 average tolls increased over the first two quarters of operations in response to increased express lane demand.

Average Tolls by Hour - Q4 2020 - Q2 2021 Comparison



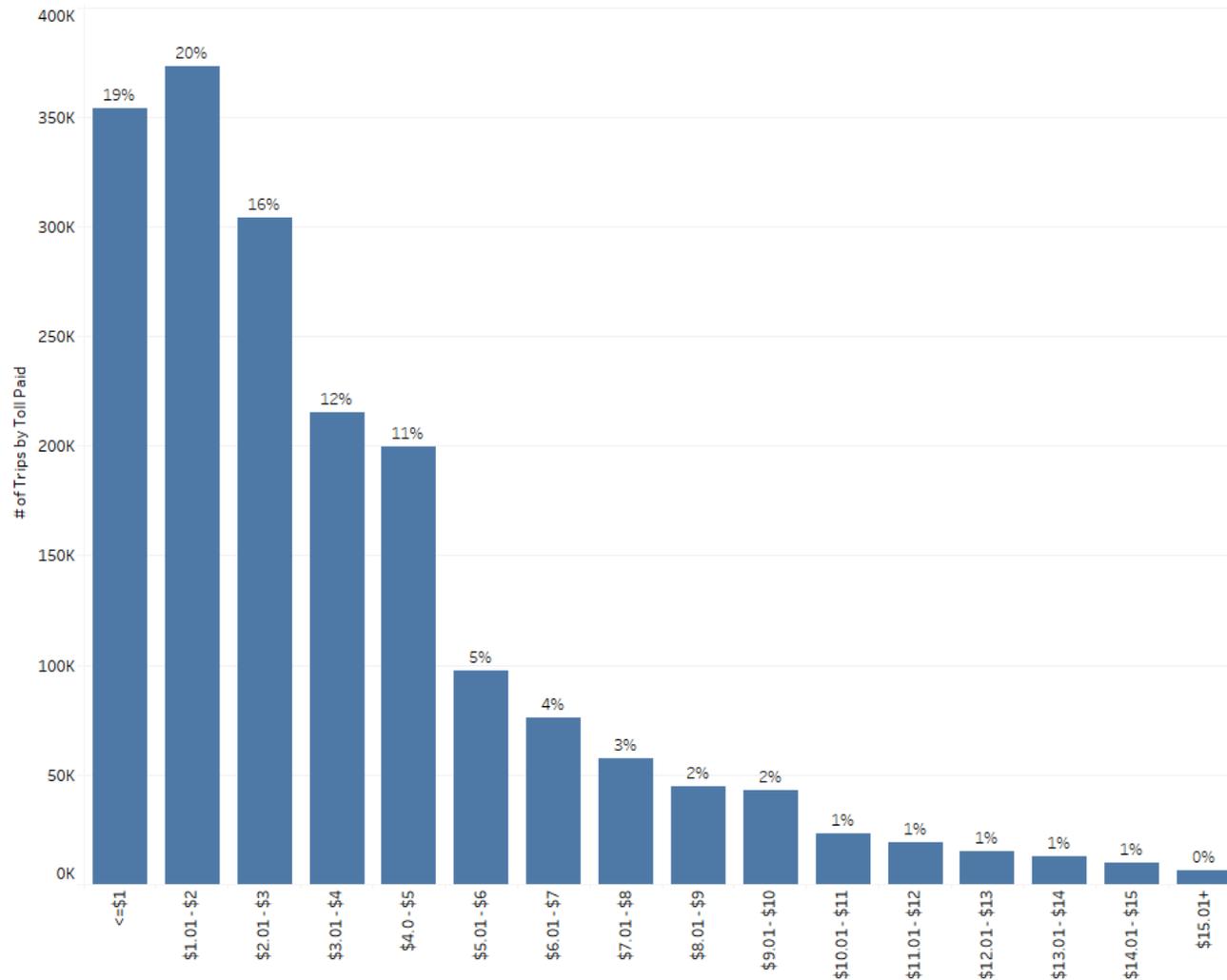
Northbound, Q2 2021 average tolls paid peaked at \$5.50 between 2 and 4 p.m., \$1.80 more than the prior peaks.

Southbound, tolls peak in both morning and afternoon. In Q2 2021, those peaks were \$1.20 to \$1.40 higher than the prior two quarters.

Q2 2021 AVERAGE TOLL PAID WAS \$4.40, 60% HIGHER THAN IN Q1 2021.

Toll Distribution

Drivers made 2.0 million paid express lane trips, up 29% from Q1 2021. 39% of users paid \$2 or less to use the express lanes, down from 52% in Q1 2021, and 5% of users paid more than \$10 to use the lanes, compared to 1% in Q1 2021.



How Drivers Use the Lanes

In Q2 2021, about 630,000 unique vehicles made about 3.3 million express lane trips.

About 310,000 of these vehicles (49%) carried toll tags and made over 2 million express lane trips (65% of trips). These drivers averaged 6.9 express lane trips in the quarter, or 2.3 trips per month.

320,000 of the unique vehicles (51%) did not carry toll tags and made over 1 million express lane trips (35% of trips). These drivers averaged 3.6 express lane trips in the quarter, or 1.2 trips per month.

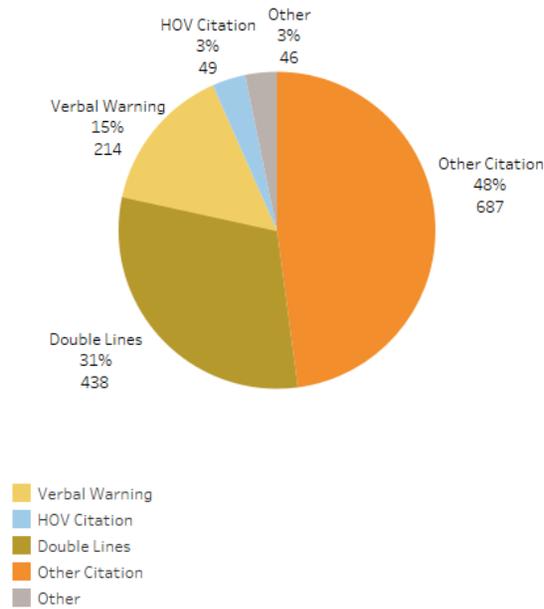
Of the over 1 million license plate trips made, about 43% were not matched to FasTrak accounts, resulting in the 16% violation rate shown earlier.

	Vehicles	EL Trips	Trips Per Vehicle Per Month
With Toll Tags	310,000 (49%)	2.2 million (65%)	2.3
Without Toll Tags	320,000 (51%)	1.2 million (35%)	1.2
Total	630,000	3.3 million	

CHP Enforcement



Q2 2021



CHP made 1,434 enforcement contacts in Q2 2021, 31% resulting in citations for crossing double white lines and 48% for other infractions like driving without a license plate. 3% of enforcement contacts were for HOV occupancy violations. Officers prioritized illegal lane crossing citations over HOV citations for safety reasons.

CHP filled 42% of BAIFA’s requested hours. Total enforcement hours in Q2 2021 were nearly the same as in the prior quarter.

The average cost per enforcement contact was \$92.

For more information, visit expresslanes.511.org or mtc.ca.gov/operations/traveler-services/bay-area-express-lanes

