ALAMEDA County Transportation Commission
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I-580 Express Lane Policy Committee Meeting Agenda
Monday, September 10, 2018, 10:00 a.m.

Committee Chair:	Nate Miley, Alameda County, District 4	Executive Director:	Arthur L. Dao
Vice Chair:	David Haubert, City of Dublin	Staff Liaison:	Elizabeth Rutman
Members:	Scott Haggerty, John Marchand, Jerry Thorne	Clerk of the Commission:	Vanessa Lee
Ex-Officio:	Richard Valle, Pauline Cutter		

1. Call to Order/Pledge of Allegiance

2. Roll Call

3. Public Comment

4. Consent Calendar

5. Regular Matters

6. Committee Member Reports

7. Staff Reports

8. Adjournment

Next Meeting: Monday, October 8, 2018

Notes:

- All items on the agenda are subject to action and/or change by the Commission.
- To comment on an item not on the agenda (3-minute limit), submit a speaker card to the clerk.
- Call 510.208.7450 (Voice) or 1.800.855.7100 (TTY) five days in advance to request a sign-language interpreter.
- If information is needed in another language, contact 510.208.7400. Hard copies available only by request.
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Alameda CTC Schedule of Upcoming Meetings:

Description	Date	Time
Alameda County Technical Advisory Committee (ACTAC)	October 4, 2018	1:30 p.m.
Finance and Administration Committee (FAC)	October 8, 2018	8:30 a.m.
I-680 Sunol Smart Carpool Lane Joint Powers Authority (I-680 JPA)		9:30 a.m.
I-580 Express Lane Policy Committee (I-580 PC)		10:00 a.m.
Planning, Policy and Legislation Committee (PPLC)		10:30 a.m.
Programs and Projects Committee (PPC)		12:00 p.m.
Independent Watchdog Committee (IWC)	November 19, 2018	5:30 p.m.
Paratransit Technical Advisory Committee (ParaTAC)	January 8, 2019	9:30 a.m.
Alameda CTC Commission Meeting	September 27, 2018	2:00 p.m.
Paratransit Advisory and Planning Committee (PAPCO)	September 24, 2018	1:30 p.m.
Bicycle and Pedestrian Community Advisory Committee (BPAC)	October 18, 2018	5:30 p.m.

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1. **Call to Order/Pledge of Allegiance**

2. **Roll Call**
   A roll call was conducted. All members were present.

3. **Public Comment**
   There were no public comments.

4. **Consent Calendar**
   4.1. Approve the April 9, 2018 I-580 Express Lane PC meeting minutes.
   Commissioner Haubert moved to approve this item. Commissioner Haggerty seconded the motion. The motion passed with the following votes:

   Yes: Haggerty, Haubert, Marchand, Miley, Thorne
   No: None
   Abstain: None
   Absent: None

5. **Regular Matters**
   5.1. Express Lanes Toll Revenue Forecasting (PN 1486002): Approve Release of Request For Proposal (RFP) for I-580 Toll System Integrator and RFP for Express Lane System Manager/Program Support and Authorize negotiations with top ranked firms
   Liz Rutman recommended that the Commission approve the release of a request for proposals (RFP) for Professional Services to develop toll revenue forecasts for the I-580 Express Lanes and I-680 Sunol Express Lanes and authorize the Executive Director to negotiate with the top ranked firms. Ms. Rutman stated that the I-580 Toll Revenue Expenditure Plan approved last month used current toll revenues escalated at 3% per year as a basis for the plan. However, given that the previous forecasts have been invalidated, staff does not feel that these projections can be relied upon and staff is seeking a 20-year forecast utilizing more recent data and information.

   Commissioner Cutter asked if a group is hired to perform the study will Alameda CTC lower the fees if they are overestimated. Ms. Rutman said that the Expenditure Plan would be updated to correctly reflect the projected toll revenues.

   Commissioner Haggerty moved to approve this item. Commissioner Thorne seconded the motion. The motion passed with the following vote:

   Yes: Haggerty, Haubert, Marchand, Miley, Thorne
   No: None
   Abstain: None
   Absent: None

5.2. I-580 Express Lanes: Monthly Operations Status Update

Ashley Tam presented the I-580 Express Lanes monthly operations update for the month of March. The update covered average trips by month; user trip breakdown; corridor speed and density heat maps for both directions of travel; and historical toll rates. She concluded by reviewing estimated gross toll revenues versus approved fiscal year budget.

Commissioner Haggerty asked of the violations that were mailed, what percent actually pay. Ms. Rutman said that unpaid tolls may take months or years before they go to DMV for collection. Mr. Dao said that the unpaid tolls is a Bay Area Toll Authority (BATA) issue and he will sit down with BATA to discuss back office operation issues.

Commissioner Haggerty asked if performance measures are built into the contract. Mr. Dao said no.

Commissioner Haubert stated level of service do not appear accurate for I-580 westbound. Mr. Dao said it's correct that it's slow in the general purpose lanes, but it is comparatively faster in the express lane, as seen in the heat maps.

Commissioner Cutter asked if the HOV Lane should speed up the traffic in the general purpose lane. Ms. Rutman said the Before and After Analysis for the express lanes is underway, and we'll bring a preliminary report to the Committee in the fall.

This item was for information only.

6. Committee Member Reports

There were no committee reports.

6. Staff Reports

There were no staff reports.

7. Adjournment/ Next Meeting

The next meeting is:

Date/Time: Monday, June11, 2018 at 10:00a.m.
Location: Alameda CTC Offices, 1111 Broadway, Suite 800, Oakland, CA 94607

DATE:	August 31, 2018
TO:	I-580 Express Lane Policy Committee
FROM:	Liz Rutman, Director of Express Lanes Implementation and Operations
SUBJECT:	I-580 Express Lanes (PN 1373.002): Monthly Operation Update

Recommendation

This item is to provide the Commission with an update on the operation of the I-580 Express Lanes. This item is for information only.

Summary

The Alameda CTC is the project sponsor of the I-580 Express Lanes, located in the Tri-Valley corridor through the cities of Dublin, Pleasanton, and Livermore, which opened to traffic on February 19th and 22nd of 2016. See Attachment A for express lane operation limits.

The July 2018 operations report indicates that the express lane facility continues to provide travel time savings and travel reliability throughout the day. Express lane users typically experienced higher speeds and lesser average lane densities than the general purpose lanes, resulting in a more comfortable drive and travel time savings for express lane users.

Background

The I-580 Express Lanes, extending from Hacienda Drive to Greenville Road in the eastbound direction and from Greenville Road to the I-680 Interchange in the westbound direction, were opened to traffic on February 19th and 22nd of 2016 in the eastbound and westbound directions, respectively. Motorists using the I-580 Express Lanes facility benefit from travel time savings and travel reliability as the express lanes optimize the corridor capacity by providing a new choice to drivers. Single occupancy vehicles (SOVs) may choose to pay a toll and travel within the express lanes, while carpools, clean-air vehicles, motorcycles, and transit vehicles enjoy the benefits of toll-free travel in the express lanes.

An All Electronic Toll (AET) collection method has been employed to collect tolls. Toll rates are calculated based on real-time traffic conditions (speed and volume) in express and general purpose lanes and can change as frequently as every three minutes. California Highway Patrol (CHP) officers provide enforcement services and the California Department of Transportation (Caltrans) provides roadway maintenance services through reimbursable service agreements.

April - July 2018 Operations Update:

Table 1 summarizes the monthly and average daily trips during the operational hours from April through July 2018. Table 2 presents the breakdown of trips based on toll classification and direction of travel. Pursuant to the Commission-adopted "Ordinance for Administration of Tolls and Enforcement of Toll Violations for the I-580 Express Lanes," if a vehicle uses the express lanes without a valid FasTrak® toll tag then the license plate read by the Electronic Tolling System is used to assess a toll either by means of an existing FasTrak account to which the license plate is registered or by issuing a notice of toll evasion violation to the registered vehicle owner. Approximately 62 percent of all trips by users without a toll tag are assessed tolls via FasTrak account.

Table 1. Monthly Trips during Operational Hours

Month	Total Trips	Average Daily Trips
April 2018	694,000	33,000
May 2018	767,000	34,900
June 2018	762,000	36,300
July 2018	750,000	35,700

Table 2. Express Lane Trips by Type and Direction

Trip Classification		Percent of Trips[1]
		June
By Type	HOV-eligible with FasTrak flex tag	43%
	SOV with FasTrak standard or flex tag	36%
	No valid toll tag in vehicle	21%
By Direction	Westbound	46%
	Eastbound	54%

1. Excludes "trips" by users that had no toll tag and either no license plate or one that could not be read by the Electronic Tolling System with sufficient accuracy that a toll could be assessed.

Express lane users typically experience higher speeds and lesser lane densities than the general purpose lanes. Lane density is measured by the number of vehicles per mile per lane and reported as Level of Service (LOS). LOS is a measure of freeway performance

based on vehicle maneuverability and driver comfort levels, graded on a scale of A (best) through F (worst).

Attachment B presents the speed and density heat maps for the I-580 corridor during revenue hours for the six-month period from January 2018 – June 2018. These heat maps are a graphical representation of the overall condition of the corridor, showing the average speeds and densities along the express lane corridor and throughout the day for both the express and general purpose lanes, and are used to evaluate whether the express lane is meeting both federal and state performance standards. During these six months, the average speeds at each traffic sensor location in the westbound express lane ranged from 55 to 70 mph during the morning commute hours (5 am to 11 am) with the lower speeds occurring between Isabel Avenue and Hacienda Road. The express lane operated at LOS C or better at most times, with a 90-minute period of LOS D experienced near Fallon Road and Isabel Ave in the morning commutes. By comparison, the general purpose lanes experienced average speeds as low as 45 mph and LOS D throughout longer sections of the corridor. During the evening commute, a small period of westbound reverse-commute congestion between Hacienda Road and San Ramon Road is observed from 4 pm to 6 pm, though the express lane continued to operate at LOS B or better during this time. Outside of the commute hours, westbound express lane users experience average speeds of 70 mph or higher and average LOS A.

In the eastbound direction, average express lane speeds from January 2018 through June 2018 ranged from 25 to 70 mph during the evening commute hours (2 pm – 7 pm) with the lowest speeds occurring at the eastern terminus of the express lanes, between Vasco Road and Greenville Road. Average express lane speeds throughout the rest of the day exceeded 70 mph. Most of the express lane corridor operates at LOS C or better during the evening commute hours, with limited sections of degraded LOS at the western end of the express lanes between 3 pm and 6 pm and at the eastern terminus between 3 pm and 7 pm. The express lanes averaged LOS B or better throughout the rest of the day in all locations. By comparison, the general purpose lanes experienced lower speeds and degraded levels of services for longer periods of time than the express lanes during the evening commute hours.

Staff has observed consistent congestion on eastbound I-580 within the buffered single-lane section between Hacienda Drive and Fallon Road. The speed and density heat maps in Attachment B corroborate these observations, revealing low speeds in this section with express lane speeds increasing significantly at Fallon Road due to the added capacity created by the second express lane. Effective July 9, 2018, staff increased the maximum toll to travel the entire length of the eastbound express lanes from $9.50 to $12.00 to discourage single occupant users from entering the express lane in this area. Staff observations suggest this increase has alleviated congestion in this location; analysis of the actual toll system data is underway.

Table 3 presents the maximum posted toll rates to travel the entire corridor in each direction for April through July 2018, along with the average toll assessed to toll-paying users.

Table 3. Toll Rate Data

Month	Direction	Maximum Posted Toll (Travel Entire Corridor)	Average Assessed[1] Toll (All Toll Trips)
April	Westbound	$12.00 (1 of 21 days)	$2.45
	Eastbound	$9.50 (19 of 21 days)	$3.47
May	Westbound	$11.25 (1 of 22 days)	$2.42
	Eastbound	$9.50 (21 of 22 days)	$3.49
June	Westbound	$12.00 (1 of 21 days)	$2.46
	Eastbound	$9.50 (21 of 21 days)	$3.44
July	Westbound	$13.00 (2 of 21 days)	$2.58
	Eastbound	$12.00 (15 of 21 days)[2]	$3.74

[1] Assessed toll is the toll rate applied to non-toll-free trips and reflects potential revenue generated by the trip. Not all potential revenue results in actual revenue received.

[2] The maximum toll rate for eastbound travel was increased to $12.00 on July 9, 2018. During the first week of July the maximum toll rate was still set at $9.50.

During Fiscal Year 2017-18, the I-580 Express Lanes recorded over 8.27 million total trips. Total gross revenues received include $12.3 million in toll revenues and $3.3 million in violation fees and penalties. During July 2018, which is the first month of Fiscal Year 2018-19, the total gross revenues received included over $1.33 million in toll revenues and $270,000 in violation fees and penalties.

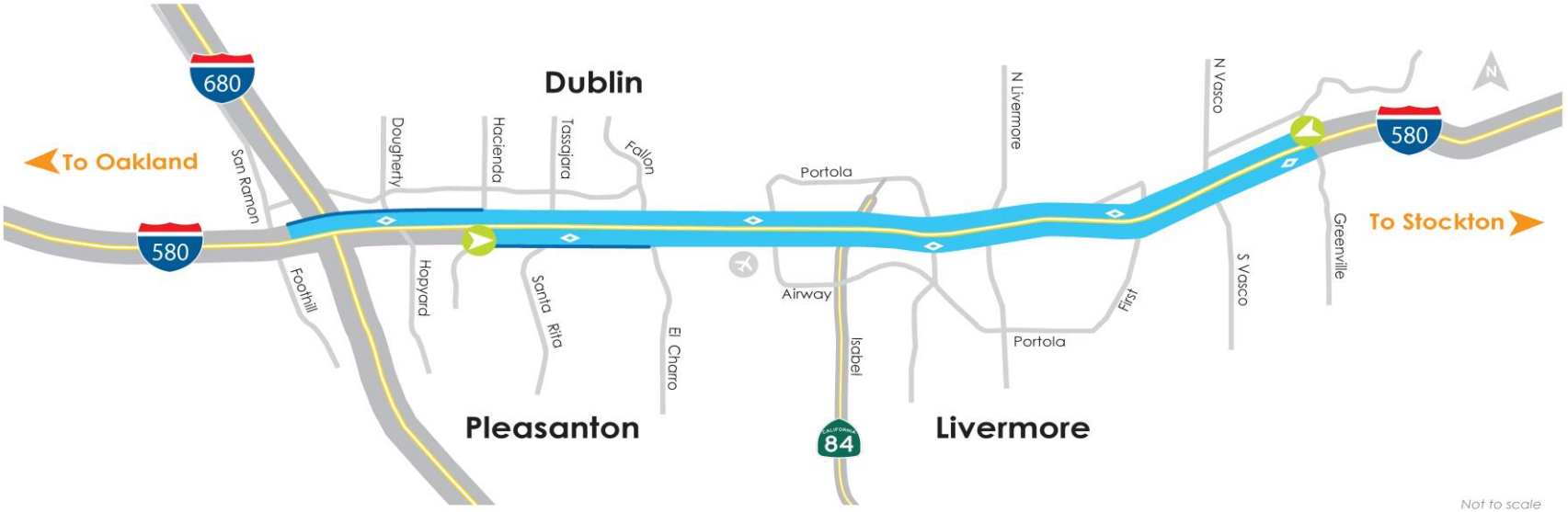
Fiscal Impact: There is no fiscal impact associated with the requested action.

Attachments:

A. I-580 Express Lanes Location Map
B. I-580 Corridor Express Lanes Heat Maps January 2018 – June 2018

I-580 Express Lanes Project Location Map

4.2A



Two Eastbound Express Lanes

Lanes begin at Hacienda

No entry/exit from eastbound express lanes from Hacienda to Fallon / El Charro.

Please note: For access to Santa Rita Road, do not enter express lanes.

One Westbound Express Lane

Lane begins at Greenville

No entry/exit from westbound express lane from Hacienda to end.

Please note: For access to I-680 or Dougherty, exit express lane before Hacienda.

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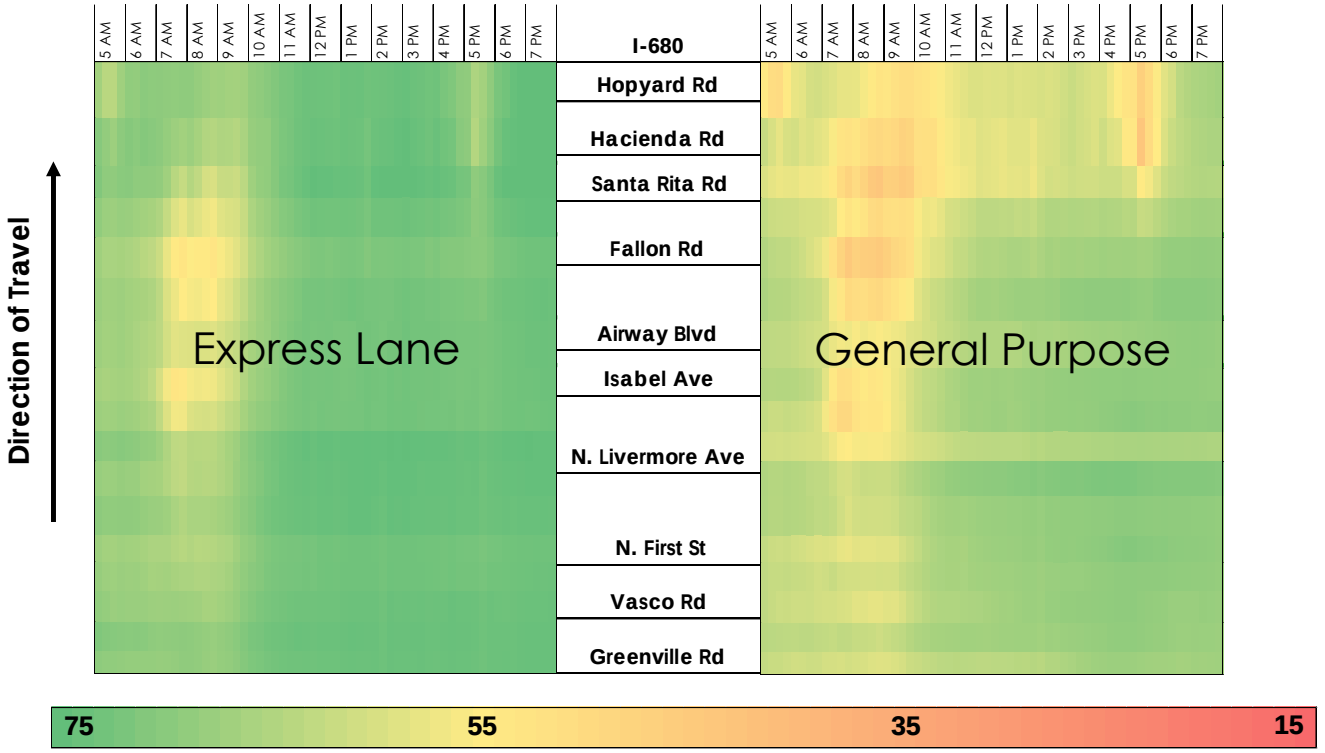
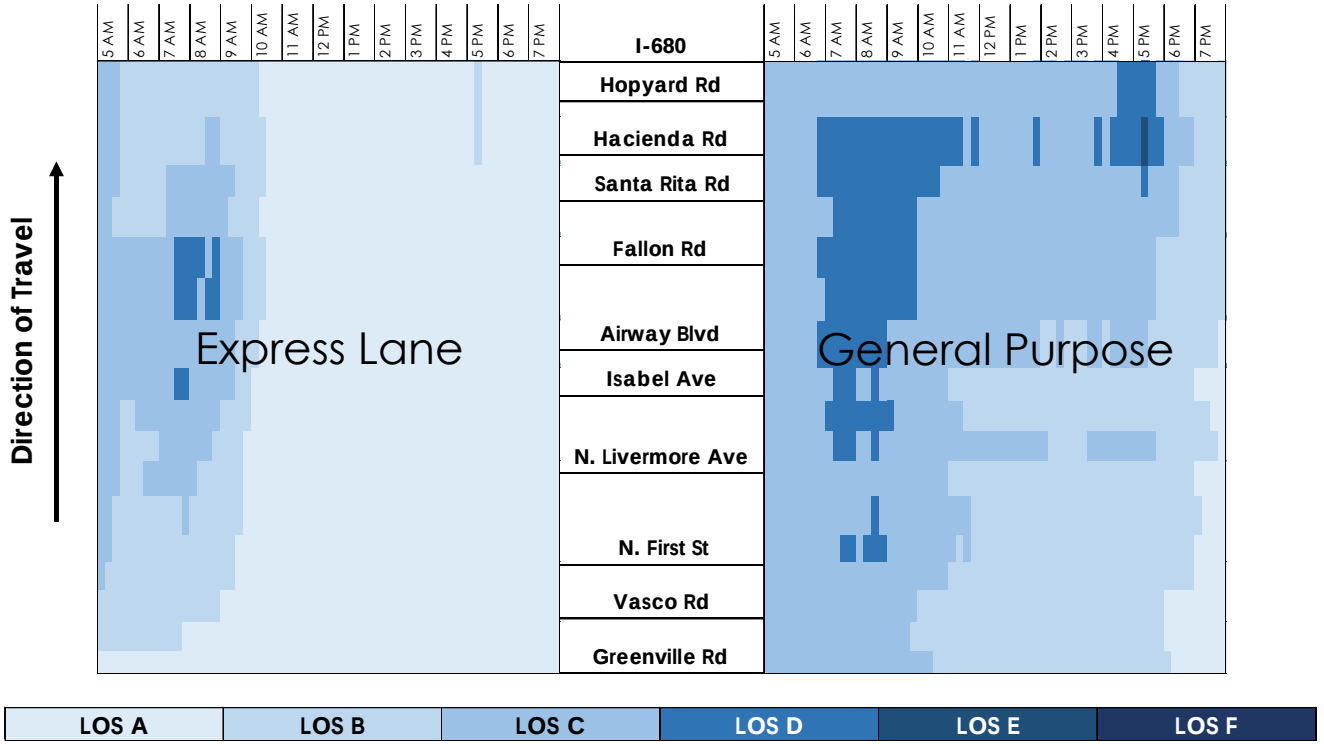
Westbound I-580 Corridor Speed Heat Maps

Monday-Friday, January 2018 – June 2018



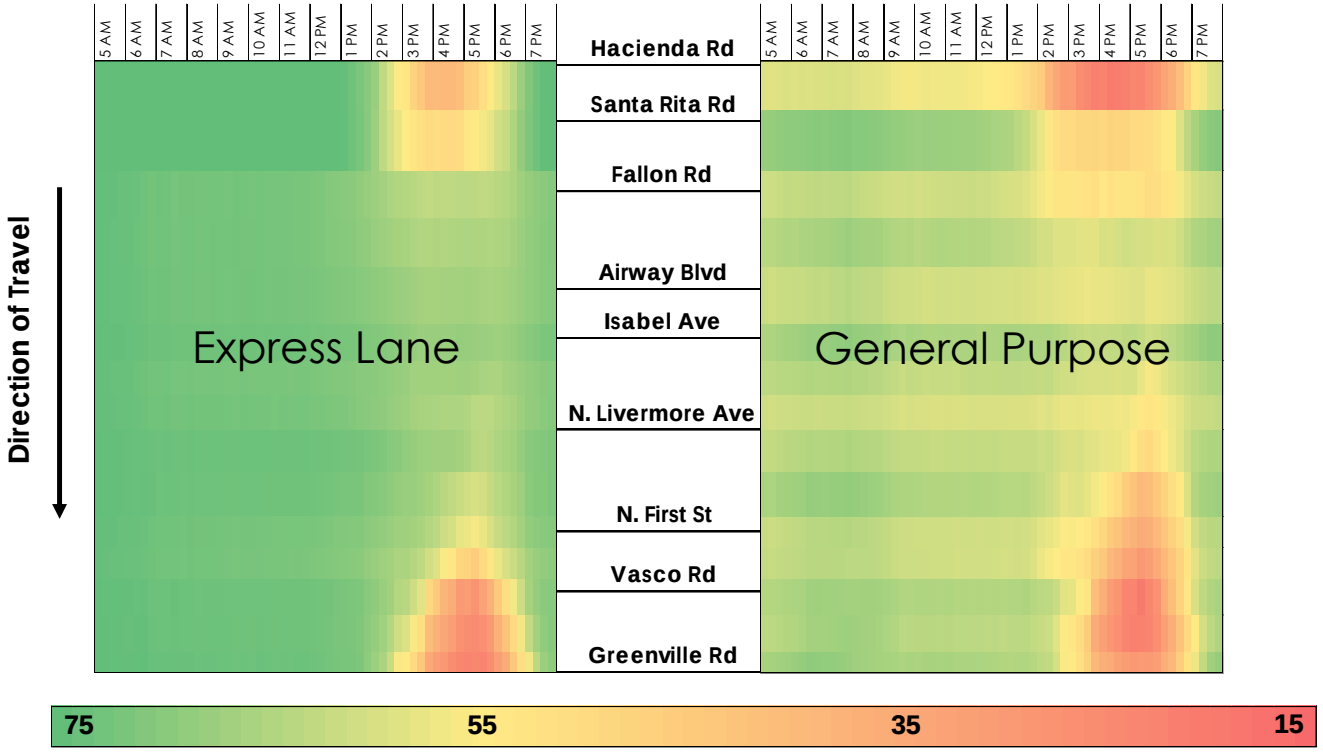
Westbound I-580 Corridor Density Heat Maps

Monday-Friday, January 2018 – June 2018



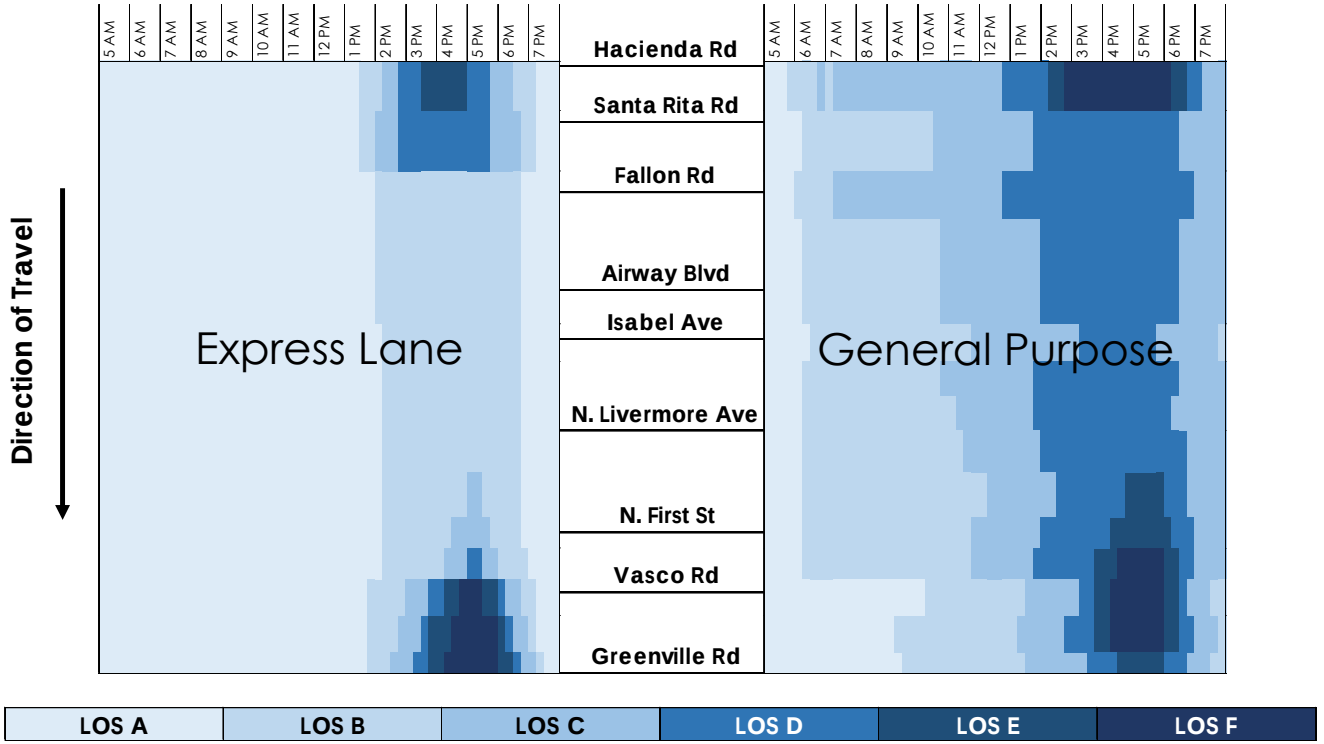
Eastbound I-580 Corridor Speed Heat Maps

Monday-Friday, January 2018 – June 2018



Eastbound I-580 Corridor Density Heat Maps

Monday-Friday, January 2018 – June 2018



DATE:	August 31, 2018
TO:	I-580 Express Lane Policy Committee
FROM:	Kristen Villanueva, Senior Transportation Planner Saravana Suthanthira, Principal Transportation Planner Elizabeth Rutman, Director or Express Lanes Implementation
SUBJECT:	I-580 Express Lanes After Study Update

Recommendation

Receive the preliminary findings from the legislatively-required I-580 Express Lanes After Study.

Summary

The Alameda County Transportation Commission (Alameda CTC) has been operating express lanes along I-580 since February 2016. AB 2032 (Dutra) authorized Alameda CTC to build and operate these lanes, and also required an "after" study of the express lanes to be submitted to the Legislature within three years of operating the facility. Per statute, the report must include an analysis of the effect of the lanes and any comments submitted by the California Department of Transportation (Caltrans) and the California Highway Patrol (CHP) regarding operations of the lanes. This item presents preliminary findings from the evaluation and provides background for the expanded I-580 and I-680 corridors item that will be presented at the September 10 meeting of the Policy, Planning, and Legislation Committee (PPLC).

Staff is preparing a report to the Legislature that provides an evaluation of the express lane corridor as it relates to the stipulations in the legislation and other relevant factors (Attachment A). Staff will incorporate comments from the Commission into the report to the legislature, as well as comments from CHP and Caltrans, and will bring the legislative report to the Commission for approval in October.

Key findings of the I-580 Express Lanes "after" study include:

- Across all lanes in the I-580 Express Lanes corridor, travel times are shorter and bottlenecks have improved despite significant increases in travel demand since 2015.
- The express lanes provide faster and more reliable travel times compared to the adjacent general purpose lanes.

- The express lanes project, which included adding road capacity, has enabled a higher number of vehicles and people to travel through the corridor compared to the "before" conditions.
- Growing congestion and intensifying bottlenecks on adjacent segments outside of the express lane facility affects express lane and overall corridor performance.

Background

The I-580 Express Lanes (Project), extending from Hacienda Drive to Greenville Road in the eastbound direction and from Greenville Road to the I-680 overcrossing in the westbound direction, were opened to traffic on February 19 and 22, 2016 in the eastbound and westbound directions, respectively. The Project corridor is the second of two corridors authorized by AB 2032 for express lane operations in Alameda County. AB 2032 requires an "after" study to be completed no later than three years after the Project opened to traffic and is codified in law as Streets and Highways Code Section 149.5 (g), which states:

Not later than three years after the administering agency first collects revenues from the program authorized by this section, the administering agency shall submit a report to the Legislature on its findings, conclusions, and recommendations concerning the demonstration program authorized by this section. The report shall include an analysis of the effect of the HOT lanes on the adjacent mixed flow lanes and any comments submitted by the Department of Transportation and California Highway Patrol regarding operation of the lane.

A similar evaluation report for the southbound I-680 Express Lane was completed and submitted to the legislature in June 2013.

Project Description

The I-580 Express Lanes Project in the Tri-Valley converted the eastbound High Occupancy Vehicle (HOV) lane from Hacienda Drive to Greenville Road to a double express lane facility and constructed a single express lane facility in the westbound direction from Greenville Road to the I-680 overcrossing. The project has near-continuous access with a single-lane, buffered portion in the eastbound direction between Hacienda Drive and El Charro Road and a buffered portion in the westbound direction from Hacienda Drive to the I-580/I-680 interchange.

Implementation of the I-580 Express Lanes involved several components:

- I-580 Eastbound Auxiliary Lanes between the Isabel Avenue interchange and the North Livermore Avenue interchange and between the North Livermore Avenue interchange and the North First Street interchange (opened in 2014).
- I-580 Eastbound conversion of the HOV lane to an express lane from Hacienda Drive to Greenville Road, and construction of a second express lane from El Charro Road to North First Street (opened in February 2016).
- I-580 Westbound Express Lane from Greenville Road to the I-680 overcrossing (opened in February 2016).

A separate project by Caltrans constructed an additional eastbound truck climbing lane from Greenville Road to one mile east of the North Flynn Road interchange, which opened for use on June 30, 2016.

Evaluation Methodology Overview

To meet the legislative requirements, Alameda CTC staff engaged in an evaluation of the Project with System Metrics Group, Inc. as the prime consultant approved by the Commission in November 2018. The study team developed evaluation measures and a data analysis strategy to evaluate each measure. Caltrans was consulted before data collection on the data collection plan and list of evaluation measures.

The "before" condition is represented by data from Spring 2015 (March through May). Data for the "after" condition were collected this past spring 2018 over the same three months. Given the high degree of directionality in the corridor, results are generally reported for either westbound AM peak period or eastbound PM peak period, unless otherwise noted. The peak period in the westbound direction is 5 am to 10 am and the peak period in the eastbound direction is 3 pm to 7pm.

Preliminary Results

Overall, the I-580 Express Lanes project reduced travel times and bottlenecks over a period of time when the corridor experienced a significant increase in vehicle travel. The Project added capacity for carpools and single occupant vehicles which has enabled a higher number of vehicles and people to travel the corridor. Growing congestion on adjacent segments outside of the express lane facility affect express lane and overall corridor performance, particularly near the I-680 interchange and over the Altamont Pass. Average vehicle occupancy also slightly declined after implementation of the Project, which is similar to findings on express lane performance across the state. For example, when carpool lanes were converted to express lanes in Los Angeles along the 110 and 10 freeways, vehicle occupancy declined 10-13% across all lanes[1].

Table 1 presents key findings by evaluation measure for the express lane corridor. Detailed results by measure are included in **Appendix A.**

Table 1. Key Findings by Evaluation Measures[2]

#	Evaluation Measure	Key Findings
1	**Travel Demand**	This corridor has experienced consistently high growth in travel demand year-over-year. Average annual daily traffic has increased by 2-4% per year from 2013 to 2018.
2	**Travel Times and Delay**	The project reduced overall travel times in the westbound AM peak direction by 5 minutes (28%) and in the eastbound PM peak direction

[1] Caltrans 2011 HOV Annual Report/2016 Managed Lane Annual Report, District 7

[2] I-580 After Study Evaluation Measures reflect standard measures used in Caltrans corridor evaluations, the measures used in the I-680 Sunol Express Lanes After Study, and other managed lanes reports across the state.

#	Evaluation Measure	Key Findings
		by 3 minutes (19%). Annual vehicle hours of severe delay[3] decreased by 151,000 vehicle-hours (47%). Express Lanes provide 2-4 minutes faster travel time than general purpose lanes on average.
3	**Reliability**	Reliability in the corridor improved in both directions during the AM and PM peak periods.
4	**Bottlenecks and Queues**	The project reduced the duration of the AM peak period bottleneck by about 3 hours and eliminated a bottleneck in the vicinity of Isabel Avenue and Airway Boulevard. The project and subsequent truck climbing lane reduced queuing on at the eastern end of the express lanes by nearly 2 miles by improving traffic flow to North Flynn Road.
5	**Level of Service (LOS)**	The express lanes operate at LOS C in the AM and PM peak hours and the general purpose lanes operate at LOS D in both directions during the AM and PM peak hours.[1]
6	**Vehicle and Person Throughput**	The corridor carries 27-30% more vehicles in the AM peak period and up to 12% more vehicles in the PM peak period in the eastbound direction. Person throughput generally increased where the Project added HOV capacity, especially in the westbound AM peak period.
7	**Average Vehicle Occupancy**	Similar to trends statewide, the number of people traveling in each vehicle decreased in the express lane corridor by approximately 1 to 8% on average. The largest decrease was at Tassajara Road/Santa Rita Road in the EB PM peak period where every 100 vehicles are now carrying 119 people compared to 130 people in Spring 2015.
8	**Transit Ridership**	Ridership increased at Tri-Valley BART Stations and LAVTA's express bus routes along or parallel to I-580.
9	**Safety**	Collisions and number of fatal and injury collisions per million vehicle-miles traveled (severe collision rate) increased in the express lane corridor at similar rates as across Alameda County freeways and the I-880 corridor.

Notes

1. Per Caltrans standard methodology, LOS was estimated for the peak hours which are 8am to 9am for the AM peak hour and 5 pm to 6 pm for the PM peak hour.

Since the opening of the I-580 Express Lanes, an All Electronic Toll (AET) collection method has been employed to collect tolls. Pursuant to the Commission-adopted "Ordinance for Administration of Tolls and Enforcement of Toll Violations for the I-580 Express Lanes," if a vehicle uses the express lanes without a valid FasTrak® toll tag, the license plate read by

[3] Severe delay is considered to occure when average speeds are slower than 35 mph.

the Electronic Tolling System is used to assess a toll either by means of an existing FasTrak account to which the license plate is registered or by issuing a notice of toll evasion violation to the registered vehicle owner. Toll-free use of the express lanes is only granted for vehicles using a switchable FasTrak toll tag set the HOV2 or HOV3+ position. Qualifying Clean Air Vehicles (CAVs) are also permitted to use a switchable toll tag in the HOV position for toll-free travel. As the first express lane facility in the Bay Area to require use of the switchable toll tag, and the first continuous access express lane in the state, the evaluation study also collected data on the number of drivers who incorrectly declare that they are carpooling via the switchable toll tag but are actually single occupant vehicles. This was done by comparing manual occupancy counts over a two day period to the number of carpool vehicles recorded by the Alameda CTC electronic toll system via detection of switchable toll tags in the HOV position, taking into account those that are eligible CAVs. This very limited sample showed that approximately 17% of vehicles in the express lanes were single drivers declaring that they were carpooling by using an incorrect setting in the switchable toll tag.

Other Factors Affecting the Study Corridor

External factors potentially affecting the Project during the "after" conditions were analyzed. These factors include:

- Roadway capacity changes and other modifications adjacent to the facility
- Growing economy in the Tri-Valley

Roadway capacity changes and modifications: Shortly after the express lanes opened, a new truck climbing lane was added in the eastbound direction from the Greenville Road on ramp to the North Flynn Road on ramp. The new capacity at the ascent of the Altamont Pass improved traffic flow eastward to North Flynn Road. Just beyond the truck climbing lane, the roadway capacity drops from 5 to 4 lanes, which creates a bottleneck that extends back into the eastern end of the express lanes facility. In addition, Caltrans is rehabilitating the roadway pavement along I-580 over the Altamont Pass, generally between North Flynn Road and the county line in both directions. Construction started in 2017 and has affected traffic flow in the Altamont Pass. The eastbound bottleneck is something that should be monitored as it continues to affect travel in the corridor and within the express lanes.

Growing economy: Over the last decade, the Tri-Valley has experienced higher growth rates in both population and employment than the Bay Area as a whole. According to a report by the Bay Area Council[4], Tri-Valley population has increased by 8% since 2014 and employment has increased by 12%. The number of commuters from Northern San Joaquin Valley into the region also significantly increased in this timeframe, by nearly 30% between 2013 and 2016. Additionally, 23% of Tri-Valley workers commute to San Francisco or Silicon Valley. All of this growth in travel means higher demands on the I-580 corridor, particularly the express lane segment where commuters to and from the Tri-Valley and other Bay Area employment

[4] All economy findings related to the Tri-Valley and commuters from San Joaquin County are from the Tri Valley Rising 2018 report by the Bay Area Economic Institute, a policy analysis group within the Bay Area Council. The report can be found here: http://www.bayareaeconomy.org/report/tri-valley-rising-2018

centers converge. Managing this congestion will continue to be an important aspect of the planning and project work for the Alameda CTC.

Conclusion

The analysis of evaluation measures for the "before" and "after" conditions shows that the express lanes have improved mobility and travel options on I-580 in the Tri-Valley over a time period of significant increase in travel volumes. Given this finding, expanding the express lane network is a congestion management strategy that could be explored on additional sections of I-580 and on other corridors in Alameda County.

An I-580 Express Lanes After Study Report will be presented at the Commission in October for adoption and submission to the legislature.

Fiscal Impact: There is no fiscal impact associated with the requested action.

Attachments

A. I-580 Express Lanes After Study Evaluation Measures
B. I-580 Express Lanes After Study – Preliminary Draft Results

Appendix A

I-580 Express Lanes After Study – Evaluation Measures

For purposes of the after study, the study team developed evaluation measures that reflect goals as described in the environmental documents for the I-580 Express Lanes and the authorizing legislation for express lanes in California. These goals and measures are shown in Table A.1. The evaluation measures reflect standard Caltrans measures used in corridor evaluations, measures used in other managed lane evaluations in the state, and were based on measures used in the I-680 After Study. Consultation with Caltrans was undertaken before data collection on the data collection plan and list of evaluation measures.

Table A.1 Goals and Evaluation Measures

Project Goals		Evaluation Measure
1	Provide congestion relief	Travel Time Bottlenecks and Queues Level of Service Delay
2	Provide enhanced operational and safety improvements	Travel Time Bottlenecks and Queues Level of Service Collisions
3	Expand available capacity for HOVs	Roadway capacity[1]
4	Expand the mobility options in the corridor	Travel Time by Lane Traffic Volume by Lane Level of Service by Lane
5	Provide reliable travel time savings to express lane users	Reliability by Lane Travel Time by Lane
6	Increase the efficiency of the transportation system by charging single occupant vehicles for use of available capacity without impacting carpool lane operations	Vehicle and Person Throughput Level of Service Travel Time Average Vehicle Occupancy
7	Maintain Level of Service (LOS) C in the express lanes.	Level of Service

Note:

1. Roadway capacity is discussed in the definition of the Project. The Project added carpool capacity in both directions in the form of a new express lane in the westbound direction and a new express lane in the eastbound direction.

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Appendix B

I-580 Express Lanes After Study – Preliminary Draft Results

Extents are the express lanes segment unless otherwise noted

Performance Measure		Time Period	Evaluation
Travel Demand Profile	**Facility**	**Time Period**	**Change from "Before to After"**
Traffic Volumes	All Lanes - EB/WB[1]	Daily	2-4% average annual growth
	Express Lanes - WB	Daily	7-14% growth in use between 2017 and 2018
	Express Lanes - EB	Daily	5-11% growth in use between 2017 and 2018
Vehicle Miles Traveled (VMT)	All Lanes - EB/WB[1]	Daily	3% average annual growth
	Express Lanes	Daily	4% growth in use between 2017 and 2018
Mobility	**Facility**	**Time Period**	**Change from "Before to After"**
Travel Times	All Lanes - WB	AM Period	Corridor travel is 5 minutes faster (28%).
	All Lanes - EB	PM Period	Corridor travel is 3 minutes faster (19%).
Bottlenecks and Queueing	All Lanes - WB	AM Period	Airway, Isabel, and First bottlenecks eliminated. I-680 bottleneck queue reduced.
	All Lanes - EB	PM Period	Greenville bottleneck shifted to end of corridor to Flynn. Slowing between Greenville and El Charro diminished.
Vehicle Hours of Delay (less than 35 mph)	All Lanes - WB	AM Period	Annual vehicle-hours of delay reduced by 45,700 vehicle-hours (58%)
	All Lanes - EB	PM Period	Annual vehicle-hours of delay reduced by 105,000 (43%)
Person Hours of Delay (less than 35 mph)	All Lanes - WB	AM Period	Annual person-hours of delay reduced by 55,400 person-hours (59%)
	All Lanes - EB	PM Period	Annual person-hours of delay reduced by 150,000 (48%)
Use & Productivity	**Facility**	**Time Period**	**Change from "Before to After"**
Occupancy: Number Of People Per Vehicle	All Lanes - WB	AM Period	Decrease from 1.21 to 1.17 people per vehicle at Tassajara Road and from to 1.17 to 1.16 people per vehicle at Isabel Avenue[2]
	All Lanes - EB	PM Period	Decrease from 1.30 to 1.19 people per vehicle at Tassajara Road and from to 1.30 to 1.22 people per vehicle at Isabel Avenue[2]
Transit Ridership	TriValley BART Stations	Daily	3% average annual growth 2013-2018
	LAVTA Routes	Annual	Increase in approximately 2,000 annual riders (11%) between 2013 and 2017 on Routes 20X and 580X

Performance Measure		Time Period	Evaluation
Vehicle Throughput: Number of Vehicles per Peak Period	All Lanes - WB	AM Period	27% to 30% increase at Tassajara Road and Isabel Avenue, respectively.
	All Lanes - EB	PM Period	0.4% to12% increase at Tassajara Road and Isabel Avenue, respectively.
Person Throughput: Number of People per Peak Period	All Lanes - WB	AM Period	23% to 28% increase at Tassajara Road and Isabel Avenue, respectively.
	All Lanes - EB	PM Period	5% increase at Isabel Avenue.
Reliability	**Facility**	**Time Period**	**Change from "Before to After"**
Planning Time[3]	All Lanes - WB	AM Period	Variation reduced by 7 minutes (30% reduction)
	All Lanes - EB	PM Period	Variation reduced by 9 minutes (33% reduction)
Safety	**Facility**	**Time Period**	**Change from "Before to After"**
Total Collisions	All Lanes – EB/WB	Annual	6% annual increase since 2009[4]
Fatalities and Injuries per Million Vehicle Miles Travelled	All Lanes – EB/WB	Annual	Increase from 0.39 fatalities and injuries per million vehicle miles to 0.46 fatalities and injuries per million vehicle miles (2015-2017)[4] 5% decline over past year from 0.48 to 0.46 fatalities and injuries per million vehicle miles (2016-2017)

Notes

1. Covers the portion of I-580 from I-680 to San Joaquin County line in both directions.
2. These decreases in average occupancy are similar to other corridors where carpool lanes were converted to express lanes. On I-110 in Los Angeles, 10.7 miles of HOV lane were converted to express lanes in 2011. By 2016, peak period AVOs had declined by 13% in the AM peak from 1.57 to 1.36 people per vehicle. The I-10 express lanes experienced a similar decline following the opening of that facility in 2012.
3. Planning time is a measure of reliability and is defined as the 95th percentile travel time, which is the time that a person's travel is faster 95 days out of 100 (or, in contrast, was slower on five days out of 100). Planning time also measures the amount of variation in travel times that existed before and after the express lanes opened. The results reported are the decrease in planning time, or decrease in variation of travel times along the corridor.
4. Collisions within the Project corridor have increased since a historical low point of 2009 at a rate of 6% per year, which is the same rate as growth across Alameda County freeways. Fatalities and injuries per million vehicle miles travelled has also increased in this time frame within the express lanes, but at a rate similar to the growth in severe collision rate along I-880 through Central County, a corridor that is similar in complexity to the I-580 express lane corridor. Over the past year, there was a 5% decline in severe collisions in the express lane corridor.