



Memorandum

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DATE: February 21, 2019

TO: Alameda County Transportation Commission

FROM: Jesse Peoples, Associate Transportation Engineer
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 December 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.

December 2018 Operations Update:

Over 652,000 express lane trips were recorded during operational hours in December, an average of approximately 32,600 daily trips. Table 1 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 65 percent of all trips by users without a toll tag are assessed tolls via FasTrak account.

Table 1. Express Lane Trips by Type and Direction

Trip Classification		Percent of Trips ¹
		December
By Type	HOV-eligible with FasTrak flex tag	47%
	SOV with FasTrak standard or flex tag	33%
	No valid toll tag in vehicle	20%
By Direction	Westbound	45%
	Eastbound	55%

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 July 2018 – December 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 50 to over 70 mph during the morning commute hours (5 am to 11 am) with the lower speeds occurring between Isabel Avenue and Santa Rita Road. The express lane operated at LOS C or better at most times, with a 60-minute period of LOS D

experienced near Fallon Road and a 30-minute period of LOS D experienced near Isabel Avenue in the morning commutes. By comparison, the general purpose lanes experienced average speeds as low as 40 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 65 mph or higher and average LOS A.

In the eastbound direction, average express lane speeds from July 2018 through December 2018 ranged from 20 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 65 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 5:30 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.

Table 2 presents the maximum posted toll rates to travel the entire corridor in each direction in December 2018, along with the average toll assessed to toll-paying users.

Table 2. Toll Rate Data

Month	Direction	Maximum Posted Toll (Travel Entire Corridor)	Average Assessed ¹ Toll (All Toll Trips)
December	Westbound	\$13.00 (1 of 20 days)	\$2.25
	Eastbound	\$12.00 (15 of 20 days)	\$3.60

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.

Through December of Fiscal Year 2018-19, the I-580 Express Lanes recorded almost 4.4 million total trips. Total gross revenues received include \$7.2 million in toll revenues and \$1.5 million in violation fees and penalties; the pro-rated forecast operating budget is \$2.8 million.

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

Attachments:

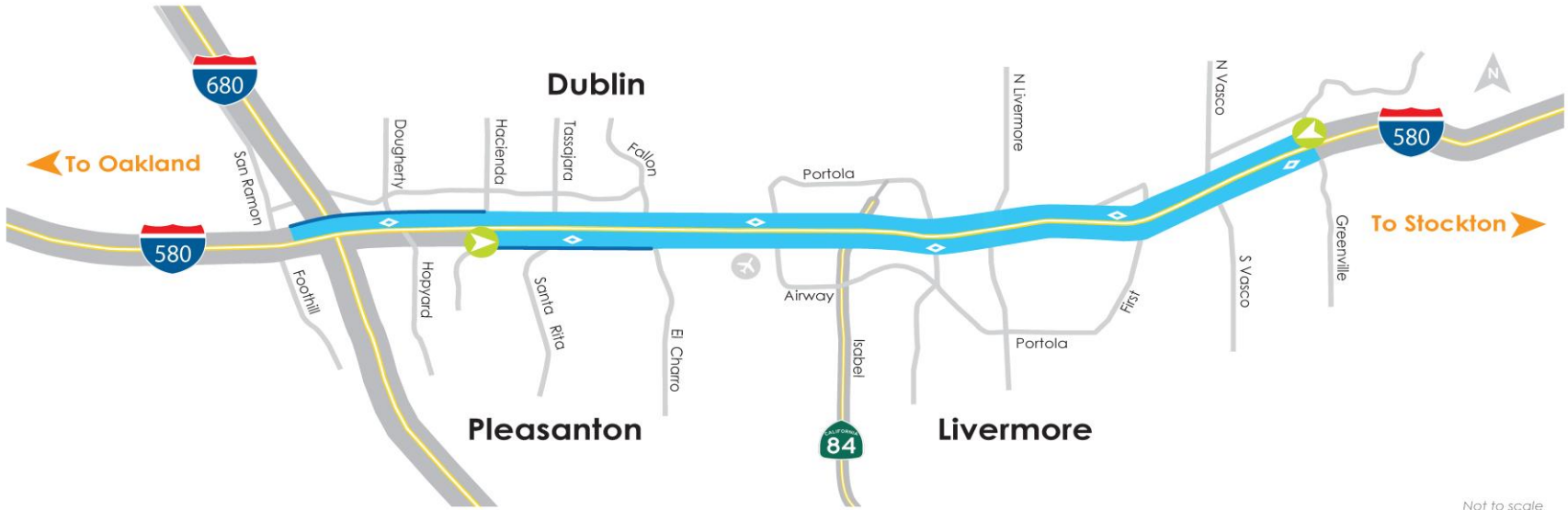
- A. I-580 Express Lanes Location Map
- B. I-580 Corridor Express Lanes Heat Maps July 2018 – December 2018

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I-580 Express Lanes Location Map

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Not to scale

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.

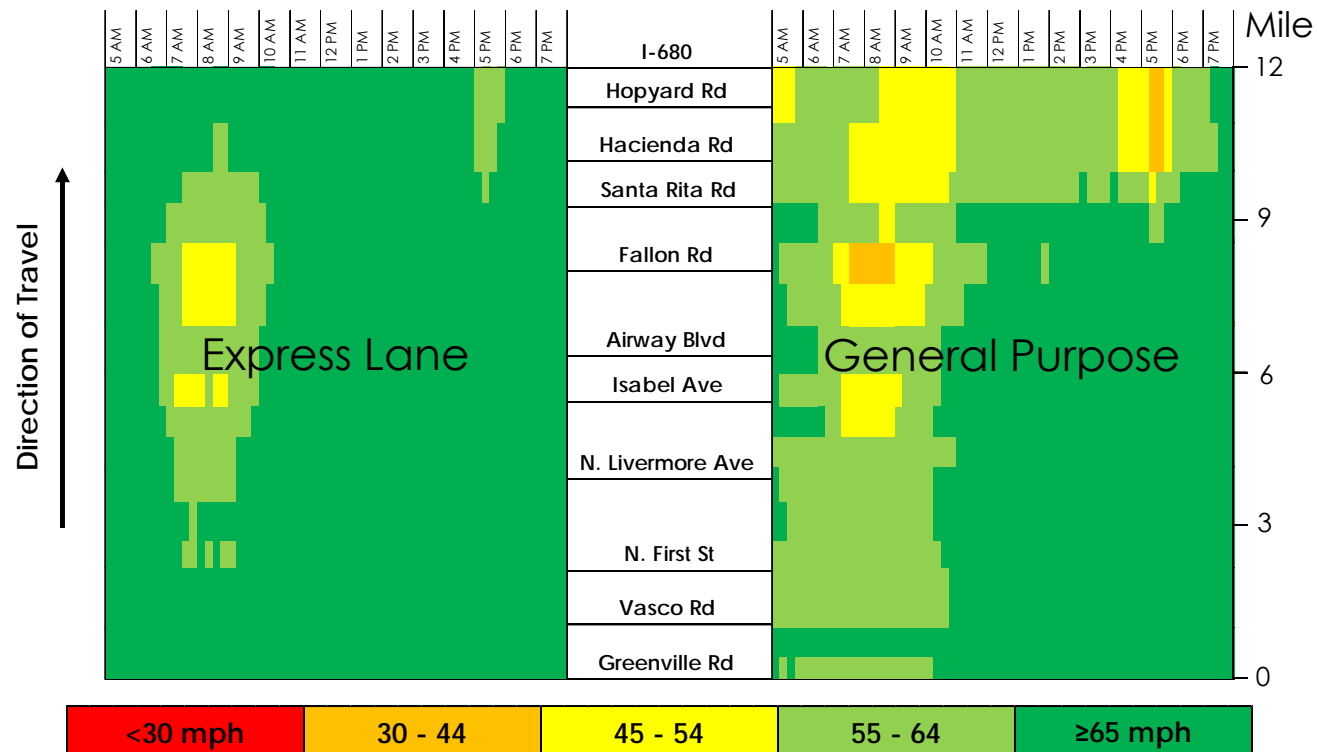
Please note: For access to I-680 or Dougherty, exit express lane before Hacienda.



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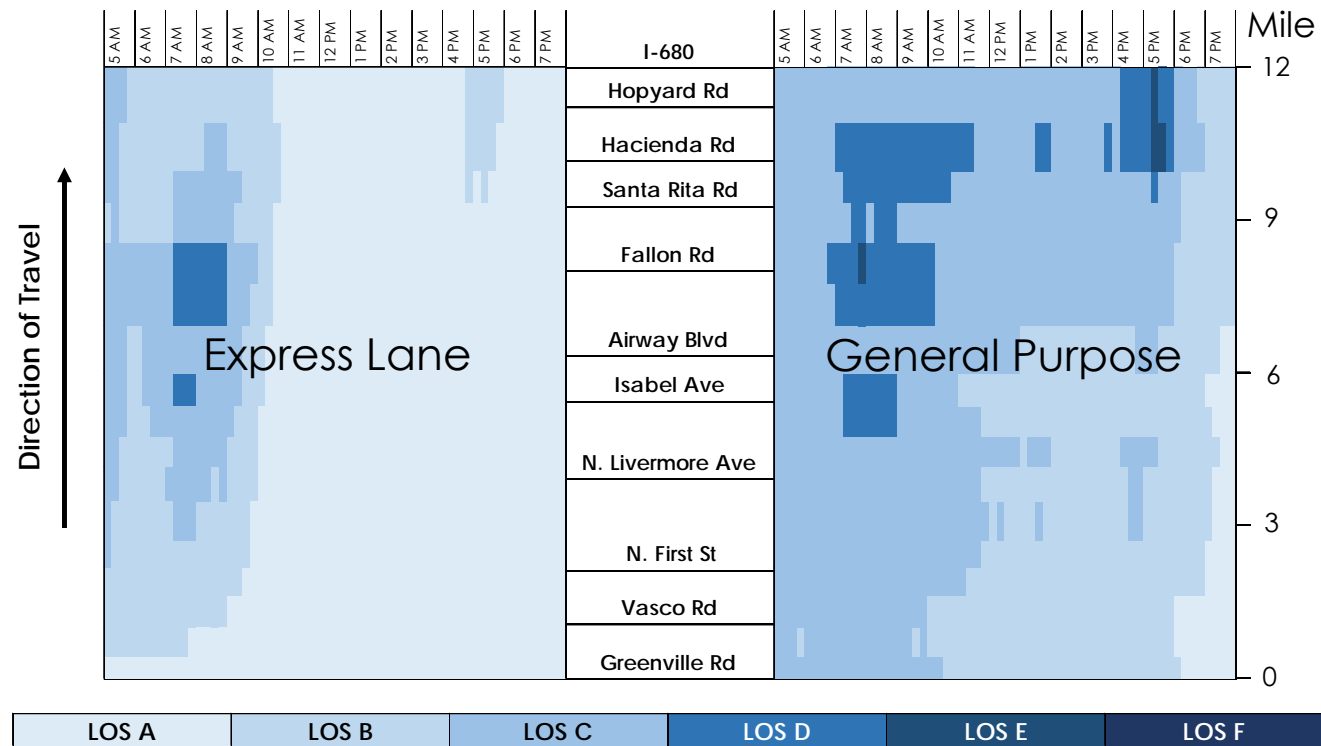
Westbound I-580 Corridor Speed Heat Maps

Monday-Friday, July 2018 – December 2018



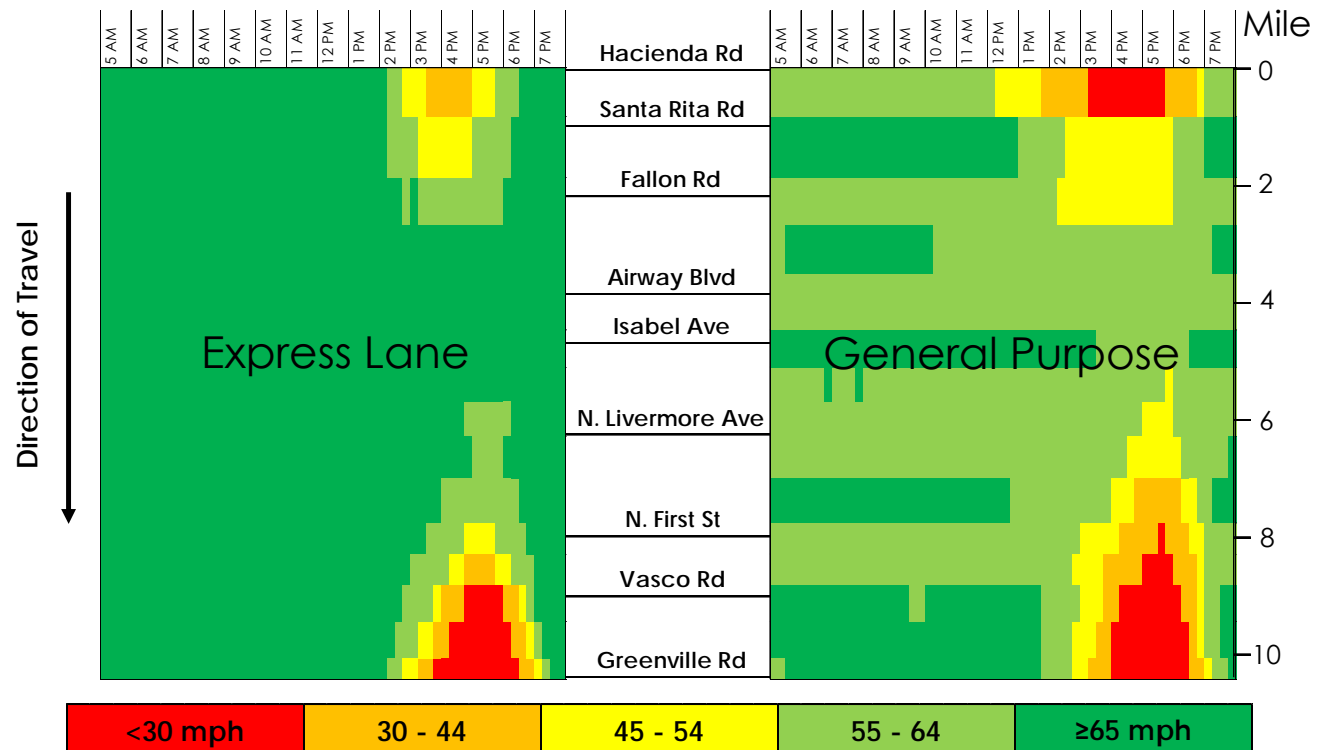
Westbound I-580 Corridor Density Heat Maps

Monday-Friday, July 2018 – December 2018



Eastbound I-580 Corridor Speed Heat Maps

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