



## Board Report

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AD HOC CONGESTION REDUCTION COMMITTEE  
JUNE 17, 2015

**SUBJECT: ASSESSMENT OF THE IMPACT OF ALLOWING HIGH OCCUPANCY VEHICLES (HOVS) TO USE I-10 EXPRESSLANES ON THE WEEKENDS WITHOUT A FASTRAK® TRANSPONDER**

**ACTION: RECEIVE AND FILE**

**RECOMMENDATION**

**WITHDRAWN:** ~~RECEIVE AND FILE status report on the assessment of the impact of allowing HOVs to use the I-10 Metro ExpressLanes on the weekends without a FasTrak transponder.~~

**ISSUE**

At the February 26, 2015 Board of Directors meeting, Director Solis requested staff to assess the impacts of removing the ExpressLanes transponder requirement during weekends on the I-10 to allow access to the ExpressLanes for occasional HOV users. This report provides the results of that assessment.

**DISCUSSION**

**Current Business Rules**

The current business rules require that all vehicles have a properly mounted FasTrak transponder to use the Metro ExpressLanes. HOV users must have a switchable transponder that allows them to declare their occupancy and travel toll-free on the ExpressLanes. Enforcement of the ExpressLanes transponder and occupancy requirements is done through a combination of California Highway Patrol (CHP) enforcement and an automated Video Enforcement System (VES). CHP enforcement occurs during the AM and PM peak periods Monday through Friday while the VES operates 24 hours a day, seven (7) days a week.

To inform the motoring public of the transponder requirement for use of the ExpressLanes, there are 38 signs on the I-10 ExpressLanes in both directions. These signs are mounted in the center median and identify the minimum occupancy requirements during certain times of the day. The

mandatory FasTrak transponder requirement was put in place for the following reasons:

- Enables the enforcement of the ExpressLanes per Board adopted business rules. Because all vehicles are required to have a transponder, we are able to implement an automated VES to assist in identifying toll violators by taking a picture of the vehicle license plate for the purpose of issuing a violation notice to those without transponders. This provides significantly enhanced deterrence to toll violators (vehicles without transponders) as the enforcement presence is available across the lanes for 24 hours a day, even when CHP is not present.
- Enhances customer confidence as users of the toll system that obey the rules understand people “cheating” in the lanes without a transponder will be caught, and will be caught at a much higher rate than would be possible without a VES in place. In March 2009, more than 60% of participants in a survey of current carpoolers indicated that they would continue to carpool if a transponder is required. This data shows that it is unlikely that the transponder requirement is a disincentive to HOV users. Further, HOV users indicate that one of their highest concerns is addressing “cheaters” in the carpool lanes and ExpressLanes.
- The automated VES generates additional revenue by identifying toll violators at a much greater rate than is possible with field law enforcement personnel. This revenue is a funding source that augments the toll revenue and contributes to maintenance of the lanes, operation of the toll system, and has provided additional revenue for community reinvestment grants and funding for capital and operational improvements needed on the ExpressLanes.
- Assists in identifying valid customers with a problem or a failed transponder for follow-up contact as the requirement of a transponder allows the system to separate valid customers from violators.
- Transponder technology allows the ability to provide, first of its kind, Carpool Loyalty Program.

The transponder requirement is essential if the ExpressLanes are to be successful and effectively manage traffic through the use of the Dynamic Pricing Algorithm.

### Enforcement

The current ExpressLanes enforcement strategy is reliable, visible and promotes fairness. The automated VES captures images of license plates on vehicles without a transponder and without a valid ExpressLanes account. The license plate information is sent to the Department of Motor Vehicles (DMV) to obtain the registered owner’s information and then a violation notice is mailed to the registered owner of the vehicle.

When CHP is patrolling and the VES is in operation it is possible for a motorist to receive a violation from the VES and a citation from CHP. If this were to happen, the violation would be dismissed to prevent a double penalty situation. Violation notices encourage violators to open an account to pay the appropriate toll, and if an account is opened the violation penalty is waived.

### Operations of Other Similar ExpressLanes

When examining other ExpressLanes across the country that were converted from HOV to HOT lanes (I-95 Atlanta, I-85 in Miami) that have similar transponder requirements and business rules for HOVs, we find the following:

The I-95 Express Lanes in Miami is a 24/7 operation that adopted the original HOV hours and requires HOVs to have a transponder to utilize the lanes. They also have a VES and dedicated highway patrol to actively monitor and enforce the lanes. To qualify as a toll-free carpool they must have three or more people in the vehicle and must register their carpool status by completing a carpool application.

The I-85 Express Lanes in Atlanta is another 24/7 Express Lane operation which requires three or more people per vehicle to qualify for toll-free carpool status. Both SOV and HOV users require the use of a switchable transponder. Enforcement is a combination of highway patrol, VES, invisible barriers and other technology in lanes to ensure legal use of the lanes at all times. Their program adopted existing HOV hours and continues to maintain 24/7 hour operation to avoid customer confusion and potential operating costs.

I-10 ExpressLanes and General Purpose (GP) Lane Speeds on the Weekends

Caltrans data from October and November of 2014 show that the westbound I-10 GP lanes near Garfield Ave are heavily utilized throughout the weekend but are operationally stable with free flow speeds ranging from 60 to 65 Miles per hour (MPH). For some weekend hours, the speeds decline to 45 to 60 MPH but do not breakdown to stop and go traffic unless there is an incident or abrupt change in demand in the lanes. Data from the same period in 2012 prior to opening of the ExpressLanes show a similar pattern of utilization and speeds. The two figures below illustrate the speeds for Saturday, October 4th and Sunday, October 5th and is representative of a typical weekend on the I-10.

**Figure 1**

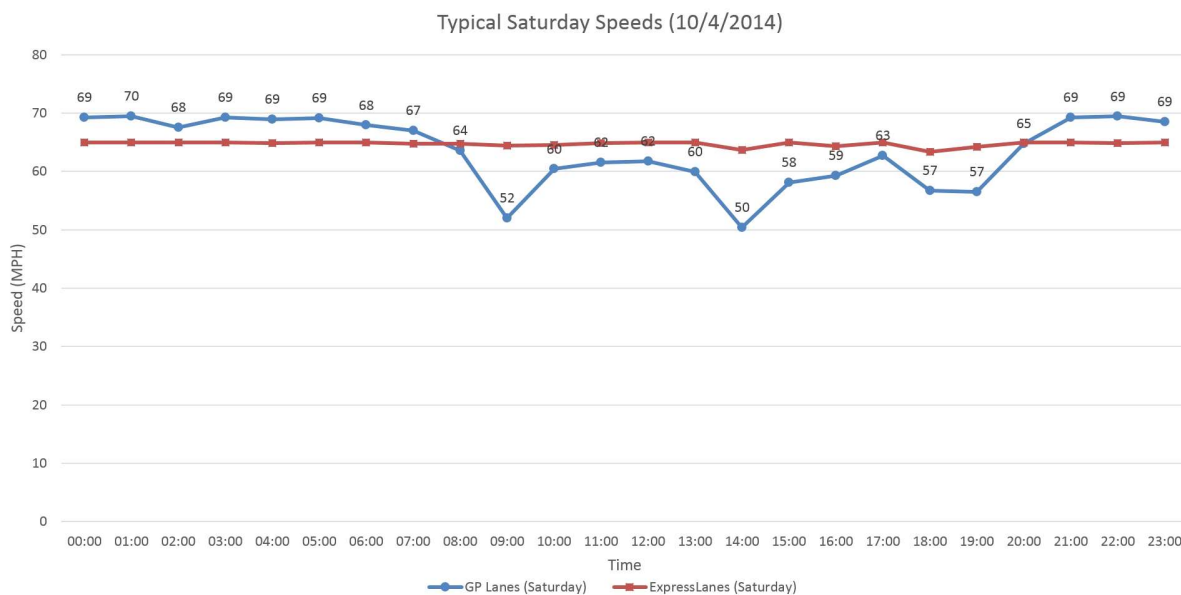
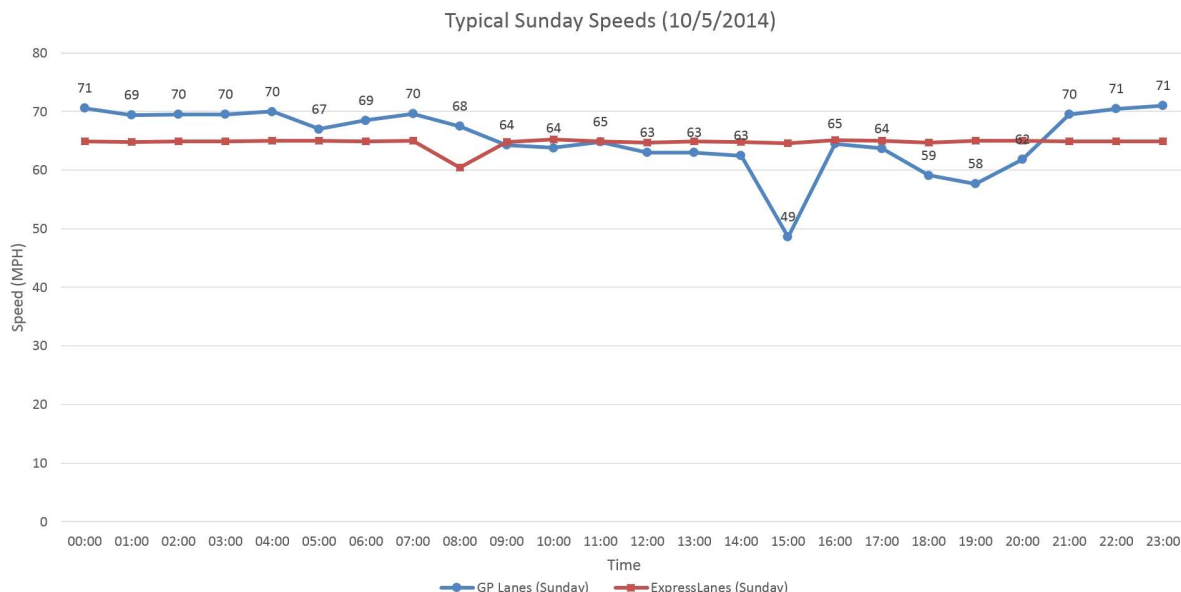


Figure 2



While GP lane speeds can range from 45 to 60+ MPH, ExpressLanes maintain free-flow traffic with average speeds above 60 MPH. Generally, with the exception of two hours on Saturday and one on Sunday, the ExpressLanes speeds are not significantly higher than the speeds in the GP lanes. Data from February 2013 when the I-10 ExpressLanes opened, to February 2015, show that the weekend usage on the ExpressLanes has increased by 34%. Based on the experience of other Express Lanes operators it is anticipated that this trend on the I-10 will continue as the program matures.

To estimate the impact of allowing HOV users without transponders on the ExpressLanes, a preliminary analysis was conducted which considered diverting 10% of the GP lane vehicles into the ExpressLanes. This would add an average of 500 vehicles per hour of HOV users at the peak hours into the ExpressLanes from the GP lanes. The analysis showed that the GP lane speeds would increase between 1 to 5 MPH and the ExpressLanes would experience slower speeds. Additionally, while the GP lanes would experience a marginal increase in speed, motorists in the ExpressLanes would encounter more restricted maneuverability when changing lanes.

Operating Options Considered

In consideration of the request to forego the transponder requirement for HOVs on the weekends on the I-10, staff came up with two (2) possible operating scenarios:

**Option 1:** Allow all HOV users on the I-10 to utilize the ExpressLanes without a transponder during the weekends while continuing to allow SOV customers with a transponder to use the lanes.

For Option 1 to be implemented effectively, the following changes would be required, for the weekends only:

- a) Business Rule modification that no longer requires HOV users to have a transponder

(weekends only)

- b) System software modification to charge SOV customers, but not process violations for vehicles without a transponder
- c) Signage modification on the corridor to indicate HOV users no longer require FasTrak on weekends but SOV users will need FasTrak to use the lanes
- d) Operations and Call Center staff training regarding changes in the rules for the weekends only
- e) Dedicated CHP services on weekends to enforce new rules
- f) Public outreach to educate potential users of the new rules

**Option 1 Potential Benefits:**

- a) Potential increased usage of ExpressLanes
- b) Potential decrease in traffic volumes and increase in speeds on GP lanes

**Option 1 Potential Costs/Impacts:**

- a) Increase in violations, as it is likely we would have to turn off the VES since there is no way to distinguish a violator from a customer
- b) Increased costs for CHP lane enforcement to provide weekend coverage
- c) Some signage on the I-10 would need to change in order to inform the public of the new rules
- d) Increased confusion for customers and non-customers due to the rule change for weekdays vs weekends which could generate more calls and emails to customer service reps and degrade performance of the call center
- e) Pricing may increase for SOV customers due to potential increase in traffic volumes which could shift SOV users back to GP lanes, thus increasing the volumes in the GP lanes
- f) Re-printing of all customer collateral materials and update of the website to reflect new business rules
- g) Total Cost/ Revenue Loss: \$4.5 to \$5.1 Million
  - 1. Total Capital Costs: \$1.23 to \$1.84 Million
    - System Software Development and Implementation: \$1 to \$1.5 Million
    - Signage Modification: \$30,000 to \$40,000
    - Re-printing of materials and updating the website: \$200,000 to \$300,000
  - 2. Total Operating Costs: \$3.3 Million
    - Additional CHP Enforcement: \$600,000 per year
    - Approximately \$2.7 Million per year in lost revenue (Estimated based on data from January to April 2015)

**Option 2:** Eliminate the need for transponders on weekends for all users of the I-10 ExpressLanes, including SOVs.

For Option 2 to be implemented effectively, the following changes would be required, for the weekends only:

- a) Business Rule modification that no longer requires vehicles to have a transponder (weekends only)
- b) System software modification to turn off the toll system and the VES so no vehicle would get charged a toll and violations would not be processed

- c) Signage modification on the corridor to indicate FasTrak not required on weekends but required on weekdays
- d) Operations and Call Center staff training regarding changes in the rules on the weekends only
- e) Public outreach to educate potential users of the new rules

**Option 2 Potential Benefits:**

- a) Potential increased usage of ExpressLanes
- b) Potential decrease in traffic volumes and increase in speeds on GP lanes

**Option 2 Potential Costs/Impacts:**

- a) Increase in violations and loss of revenue, as it is likely we would have to turn off the VES and the toll system since there is no requirement for the use of a transponder
- b) Some signage on the I-10 would need to change in order to inform public of the new rules
- c) Increased confusion for customers and non-customers due to the rule change for weekdays vs weekends which will generate more calls and emails to customer service reps and degrade performance of the call center
- d) Re-printing of all customer collateral materials and update of the website to reflect new business rules
- e) Total Cost/ Revenue Loss: \$6.1 to \$6.7 Million
  - 1. Total Capital Costs: \$1.23 to 1.84 Million
    - System Software Development and Implementation: \$1 to \$1.5 Million
    - Signage Modification: \$30,000 to \$40,000
    - Re-printing of materials and updating the website: \$200,000 to \$300,000
  - 2. Total Operating Costs: \$4.9 Million
    - Approximately \$4.9 Million per year in lost revenue (Estimated based on data from January to April 2015)

Conclusions

While this analysis focuses on the I-10, we anticipate that the new weekend business rules would eventually have to apply to the I-110 to ensure consistency and equity among the ExpressLane users in both corridors.

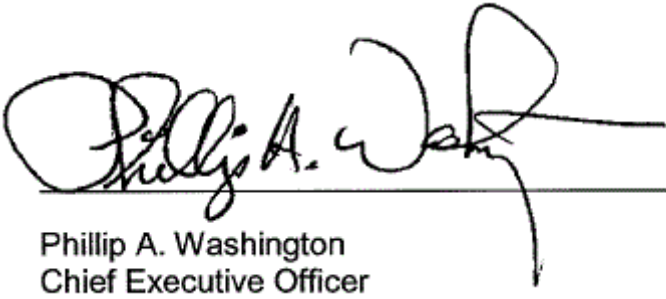
Our initial analysis for the I-10 indicates that allowing HOVs to use the system without a transponder could yield a marginal increase of 1 to 5 MPH in travel speeds in the GP lanes. However, the analysis reveals that this could severely inhibit our ability to effectively manage and enforce the lanes, confuse drivers, and require additional resources resulting in a combined cost and revenue loss of \$4.5 to \$6.7 Million in the first year, depending on the option selected. Additionally there will be a projected on-going operating cost and revenue loss of \$3.3 to \$4.9 Million per year. Finally, a review of ExpressLanes operations across the US with similar HOV requirements and business rules as the Metro ExpressLanes indicate they continue to have 24/7 operation as an Express Lane and do not anticipate any changes to their HOV requirements to avoid customer confusion and a potential increase in their operating costs.

**NEXT STEPS**

Weekend usage on the I-10 ExpressLanes continues to increase. Staff will continue to monitor the needs of the corridor and will address weekend usage as part of a larger ExpressLane policy review.

Prepared by: Tim Lew, Transportation Planning Manager (213) 922-1071

Reviewed by: Kathleen McCune, Director (213) 922-7241  
Shahzad Amiri, Executive Officer (213) 922-3061



Phillip A. Washington  
Chief Executive Officer