



METROPOLITAN  
TRANSPORTATION  
COMMISSION

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*Memorandum*

Agenda Item 2e

TO: Operations Committee

DATE: May 2, 2014

FR: Executive Director

W. I. 6840

RE: California Highway Patrol Enforcement of Bay Area Express Lanes

Attached for your information is a memorandum and PowerPoint presented to Bay Area Infrastructure Financing Authority (BAIFA) at its April 23, 2014 meeting regarding express lane enforcement. In the past, MTC's Operations Committee expressed interest in improving enforcement of High-Occupancy Vehicles (HOV) lanes on freeways and HOV by-pass lanes at ramp meters. To date, staff has primarily focused on HOV lane enforcement in preparation for opening Bay Area express lanes. Staff plans to consider HOV by-pass lane enforcement as part of on-going Transportation Management System negotiations with the California Department of Transportation and California Highway Patrol.

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Steve Heminger

SH: PG

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*Memorandum*

Item 4a

TO: BAIFA

DATE: April 9, 2014

FR: Executive Director

W. I. 6840

RE: CHP Enforcement of BAIFA's Express Lanes

This memo presents preliminary recommendations for enforcement of BAIFA's express lanes. Staff recommends BAIFA contract with CHP for enforcement for the Contra Costa I-680 Southern Segment using a mix of regular full-time and overtime CHP staff. Staff will propose an enforcement budget in Spring 2015, prior to opening. Staff also recommends discussing the State's contribution to enforcing eligibility to travel toll-free in High Occupancy Vehicle (HOV) lanes and BAIFA's future express lanes as part of on-going Transportation Management System (TMS) negotiations with the California Department of Transportation (Caltrans) and CHP. This information, along with any direction from BAIFA, will also be shared with MTC's Operations Committee in May.

**Background**

BAIFA plans to open its first HOV-to-express lane conversion in Spring 2016 on the I-680 Southern Segment from Alcosta to Livorna/Rudgear in Contra Costa County (Contra Costa I-680 Southern Segment Express Lane). As earlier approved by this Authority, all vehicles in the express lane will be required to have a FasTrak<sup>®</sup> toll tag. Switchable toll tags will be used by carpools and clean-air vehicles to declare their toll-free status to the toll system. The toll system will capture license plate images to automatically enforce toll violations when a driver has no toll tag. Unfortunately, no reliable technology exists to catch drivers who incorrectly declare themselves as eligible to travel toll-free. BAIFA will need to rely on manual enforcement by CHP to discourage such violators for the foreseeable future.

Since California allows clean-air vehicles to use HOV lanes, federal law requires that Caltrans ensure that the lanes meet federal performance thresholds<sup>1</sup>, or Caltrans must take corrective action. Recently Caltrans evaluated its HOV lane performance based on 2011 data and found that some Bay Area lanes are degraded. Caltrans developed an action plan to address degraded performance and is currently working out details with the Federal Highway Administration (FHWA) (see Attachment 1). The State identified various strategies, such as finding more resources (for Freeway Service Patrol (FSP) and CHP services) to changing HOV occupancy requirements. Caltrans is now updating its analysis with 2012 data.

Clearly, BAIFA would like the State to increase its investment in HOV lane enforcement to deter violators. This would build public confidence that the State is managing the lanes, and set the stage for other policy changes that may become necessary to meet federal law. Staff will continue

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<sup>1</sup> HOV lanes must maintain a minimum speed of 45mph 90 percent of the time in a 180 consecutive day period.

to discuss the State's contribution to enforcement as part of on-going negotiations of a TMS master cooperative agreement with Caltrans and CHP. In the meantime, BAIFA needs a credible, near-term enforcement approach.

### **BAIFA's Enforcement Approach**

To better understand enforcement options, staff conferred with CHP, FSP (which contracts for CHP field supervision) and other California express lane operators. Findings include:

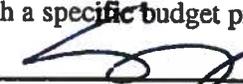
- The State cannot estimate its effort for regular patrol officers to enforce HOV/express lanes because CHP does not separately track the time its officers spend on this activity. However, CHP can track this effort when contracted under a supplemental agreement.
- All express lane operators in California are required by State law to contract with CHP for supplemental enforcement, if needed.
- Operators believe that deterrence is the primary benefit of CHP enforcement.
- A "blitz" strategy, where CHP makes a concerted effort for a defined period of time to enforce toll-free eligibility in HOV/express lanes, is a cost-effective strategy.
- CHP can provide staff on an overtime or regular full-time basis. Regular full-time staff is more expensive because the cost of paid time off, sick leave and training is built in.
- Even though BAIFA would pay CHP to perform enforcement, CHP's primary mission would still be public safety. CHP may prioritize safety over enforcement, as needed.

As a result of this research, staff is pursuing a series of strategic investments to deter violators and to support express lane enforcement (see Attachment 2). Based on the analysis, having regular, full-time express lanes staff at the corridor level does not seem practical because of the cost. In addition, since typical HOV hours for the morning (5-9am) and evening (3-7pm) are more than 8 hours apart, BAIFA would have to hire two regular, full-time officers for 8 hours each to do the same work as two overtime officers working 4 hours each. However, staff believes it would make sense to have a single ranking officer available for overall coordination, such as performance tracking, shift recruiting, service planning, and performance reporting to BAIFA, especially as BAIFA's express lane network grows.

At MTC committee meetings, commissioners have suggested that MTC pursue legislation requiring that CHP provide express lanes enforcement as part of its regular duties to enforce HOV operations. Staff can pursue this long-term option, but in the near term, staff recommends BAIFA contract with CHP for field enforcement officers paid on an overtime basis and one regular fulltime sergeant to perform key coordination tasks for all BAIFA express lanes. Staff will recommend a proposed budget for CHP enforcement and key terms of an agreement with CHP prior to approval of the FY 2015-16 budget. Staff brings this item to the Authority now, based on interest from the Authority on options for enforcement of the new express lanes.

### **Recommendation**

Staff recommends that BAIFA plan to enter into a funding agreement with CHP to enforce toll-free eligibility for the Contra Costa I-680 Southern Segment express lane. The agreement would fund a full-time program coordinator and support enforcement of such express lane on an overtime basis. Staff will return in spring 2015 with a specific budget proposal.

  
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Steve Heminger

SH: PG

## **Attachment 1**

### **Caltrans' Action Plan: Current Thinking**

Caltrans' current approach to an Action Plan to address HOV lane degradation includes a variety of options that can be applied as appropriate, depending on the HOV lane corridor:

- Additional enforcement by CHP
- Additional Freeway Service Patrols
- Improve detection to support performance, monitoring, evaluation, and (annual) reporting
- Integrated corridor management operations (including ramp metering)
- Address geometric/operational issues in facility (e.g. bottlenecks, gap closures, weaving, access points, signage)
- Convert HOV to HOT lanes (with dynamic tolling)
- Adding capacity to the managed or general purpose lanes
- Increasing occupancy requirements for managed lanes

**Attachment 2**  
**BAIFA Strategic Investments**

- Equip all toll tag read points with enforcement beacons which will illuminate when a switchable toll tag is read in a toll-free setting, helping CHP focus its enforcement efforts. These beacons will face upstream to support mobile enforcement.
- Upgrade targeted CHP observation areas to raise the observation pad, widen the entry lane to the freeway and improve the entry lane grade.
- Provide a web portal through CHP's on-board computers that officers can use to determine the toll tag setting at the last read point and compare to the actual toll-free status.
- Consider ad-hoc opportunities to assist in testing and development of tools to semi-automate toll-free eligibility enforcement such as occupancy detection technology.

# BAY AREA EXPRESS LANES



## CHP Enforcement of Bay Area Express Lanes

April 23, 2014

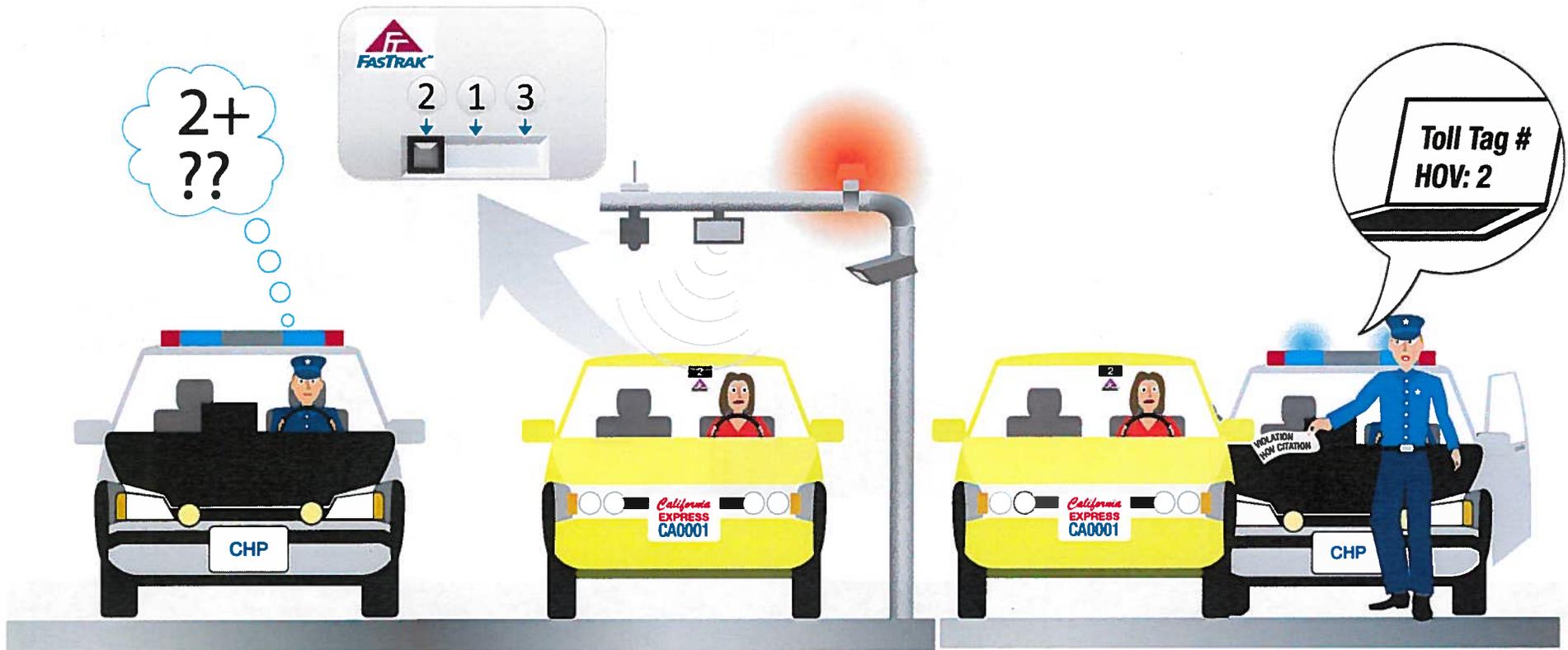
**BAIFA**  
BAY AREA INFRASTRUCTURE  
FINANCING AUTHORITY



# Toll Tags Required for All Vehicles



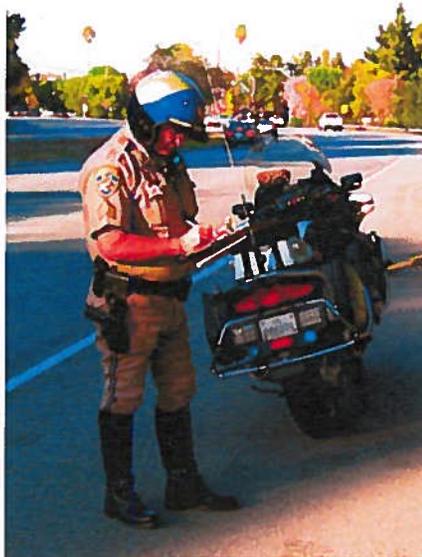
# CHP's Role: HOV Violations





# Peer Research: Lessons Learned

1. Contracting with CHP is 'standard practice' for express lanes.
2. Deterrence is key benefit of CHP enforcement.
3. 'Blitz' strategy is cost-effective strategy to deter violators.
4. Fulltime CHP staff cost significantly more than overtime CHP staff.
5. CHP's primary mission is public safety; CHP prioritizes safety over enforcement.



# Peer Research: Staffing Approach

	VTA (SR-237)	ACTC (I-680SB)	SANDAG (I-15)	LACMTA (I-10/I-110)
Fulltime or Overtime?	Overtime	Overtime	Overtime	Fulltime coordinator; Overtime patrols
Length (miles)	4	14	20	25
Officer Patrols	1 officer, shift varies	1 officer during morning peak periods	8 hours per weekday on average	4 officers (2 per corridor; not including coordinator)
Cost	FY12/13: \$28,000	FY 12/13: \$175,000	FY12/13: \$180,000	FY13/14: \$997,000

## Peer Research: Overtime vs. Fulltime Costs

CHP Position <sup>1</sup>	Overtime <sup>2</sup>	Fulltime <sup>3</sup>
Officer	\$152,000/yr	\$212,000/yr
Sergeant 	\$185,000/yr	\$258,000/yr

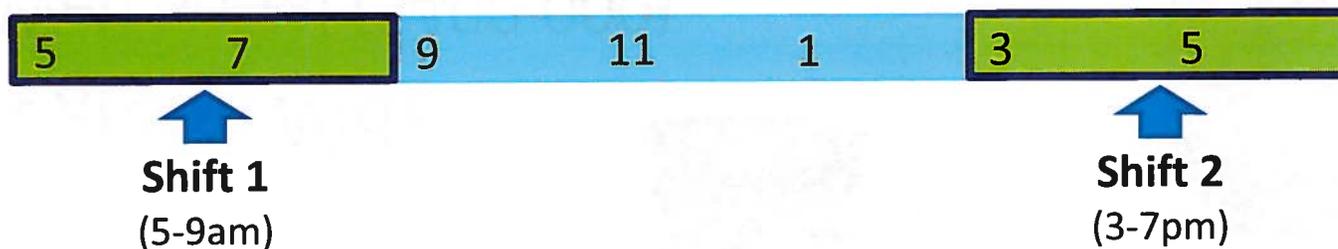
<sup>1</sup>Based on rates shown in LACMTA-CHP agreement (11/7/12).

<sup>2</sup>Overtime is charged at time-and-a-half of salary only. 2,080 hours/yr.

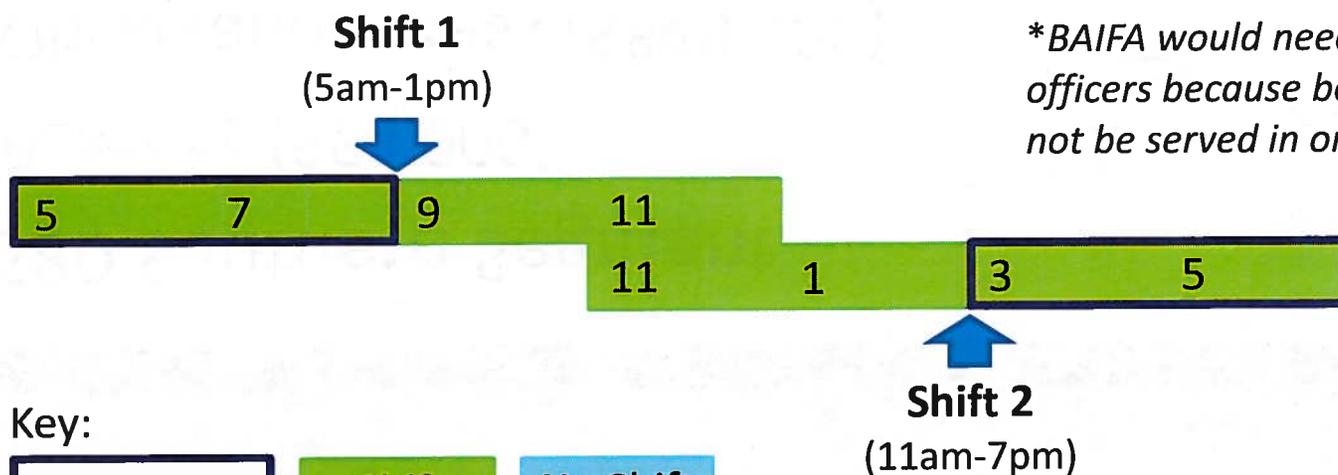
<sup>3</sup>Fulltime is charged at straight time of salary, but includes benefits and overhead, too. For Officer, fulltime cost is estimated using multiplier of 139.47% (based on Sergeant differential). 2,080 hours/yr.

# Peer Research: Overtime vs. Fulltime Shift Planning

## Overtime – Two 4-hour shifts



## Fulltime – Two 8-hour shifts\*



Key:



# Investments in Infrastructure and Equipment

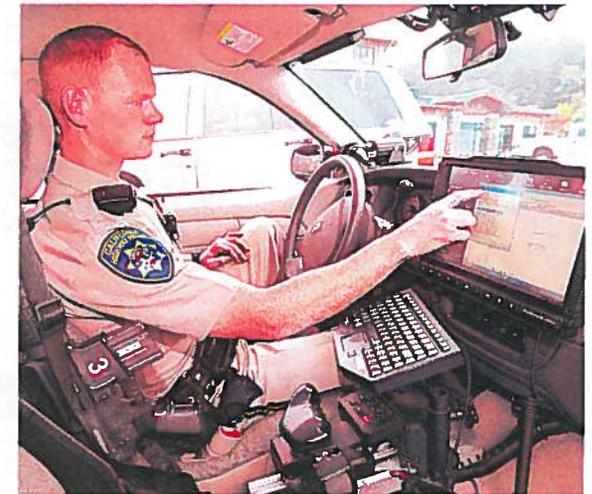
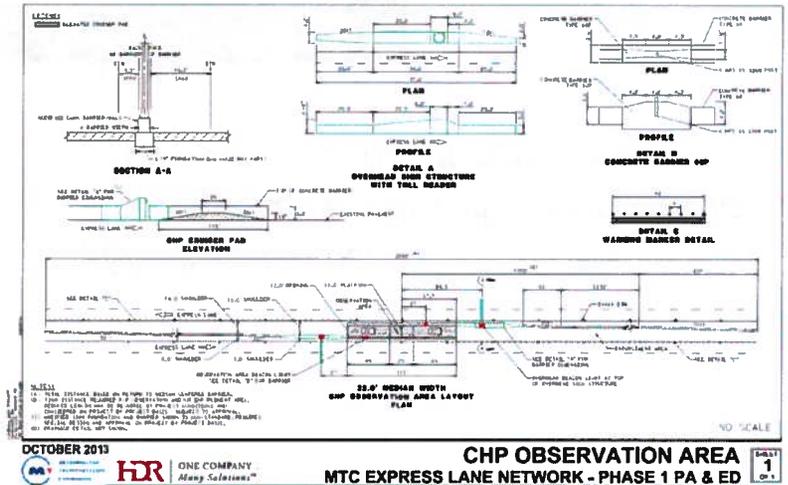
## I-680 Southern Segment

- Beacons (\$54,000)
- Observation areas (\$840,000)



## Program-Wide

- Web portal (\$400,000)
- Support R&D for technology to semi-automate CHP enforcement (\$TBD)



**BAY AREA**  
**EXPRESS LANES**

# Recommendations

1. Enter into a supplemental agreement with CHP for I-680 enforcement.
2. Hire a fulltime Sgt.-level coordinator and overtime officers.
3. Approve a specific cost proposal in spring 2015.
4. Advocate for a greater State contribution to HOV enforcement through TMS discussions.

