



METROPOLITAN
TRANSPORTATION
COMMISSION

Agenda Item 5a
Bay Area Metro Center
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Memorandum

TO: Operations Committee

DATE: May 6, 2016

FR: Executive Director

W. I. 6840

RE: High-Occupancy Vehicle (HOV) Data Collection Summary: Occupancy, Clean Air Vehicles, and Violations

Since spring of 2015, MTC, California Department of Transportation (Caltrans) and California Highway Patrol (CHP) have been working to prepare a Managed Lanes Implementation Plan (MLIP), which will help our region better operate and expand the High-Occupancy Vehicle (HOV) system, consisting of HOV lanes and express lanes. The main focus areas are a) to improve HOV lanes that fail to meet federal performance standards and b) to increase vehicle occupancy on HOV lanes and express lanes through carpools, vanpools, shuttles, and buses. A draft plan will be available for review later this fall, and when adopted by the Commission, will supersede the region's adopted 2002 HOV Master Plan.

As part of the MLIP effort, staff's original approach was to rely on readily available data collected by Caltrans and other sources. However, much of this HOV data has not been collected in recent years due to lack of resources. Given the lack of available data, MTC led a data collection effort aimed at getting data on vehicle occupancy, rate of single-occupant vehicle (SOV) violations and number of clean air vehicles in the HOV lanes. After rigorous data quality control checks and vetting with Caltrans and CHP staff, MTC staff and a consultant team led by CDM Smith summarized the HOV data. The data shows a significant number of SOVs, including both authorized clean air vehicles and unauthorized violators, in the HOV lanes.

Staff looks forward to sharing the detailed results of the HOV data collection at the Committee meeting.

Steve Heminger

SH: tso

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High Occupancy Vehicle (HOV) Data Collection: Occupancy, Clean Air Vehicles, & Violations

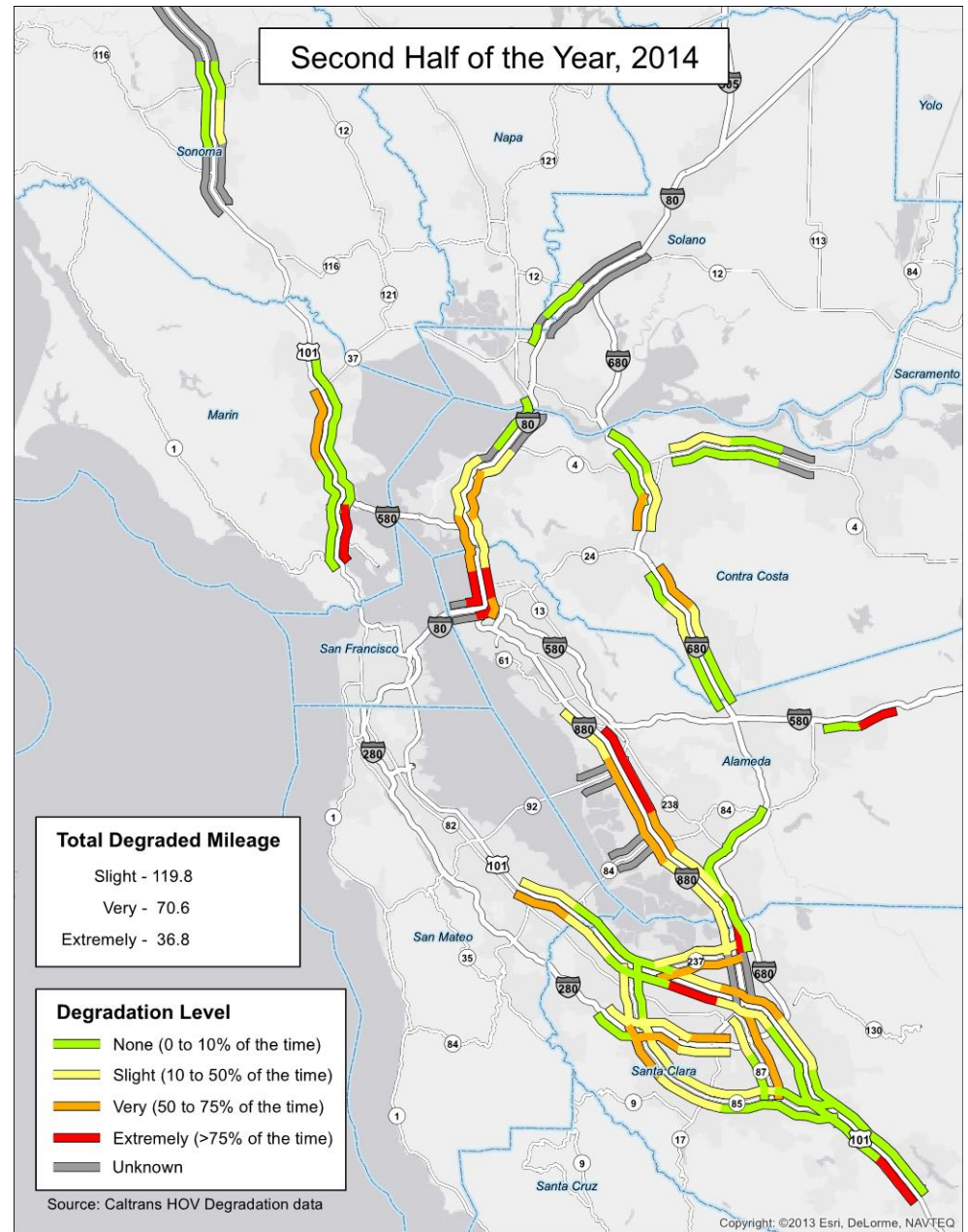
Operations Committee
May 13, 2016

58% of Bay Area HOV Lanes Are Degraded, Failing Federal HOV Performance Standard

(Under 45 MPH for 10%+ of the time)

2013 to 2014 Growth:

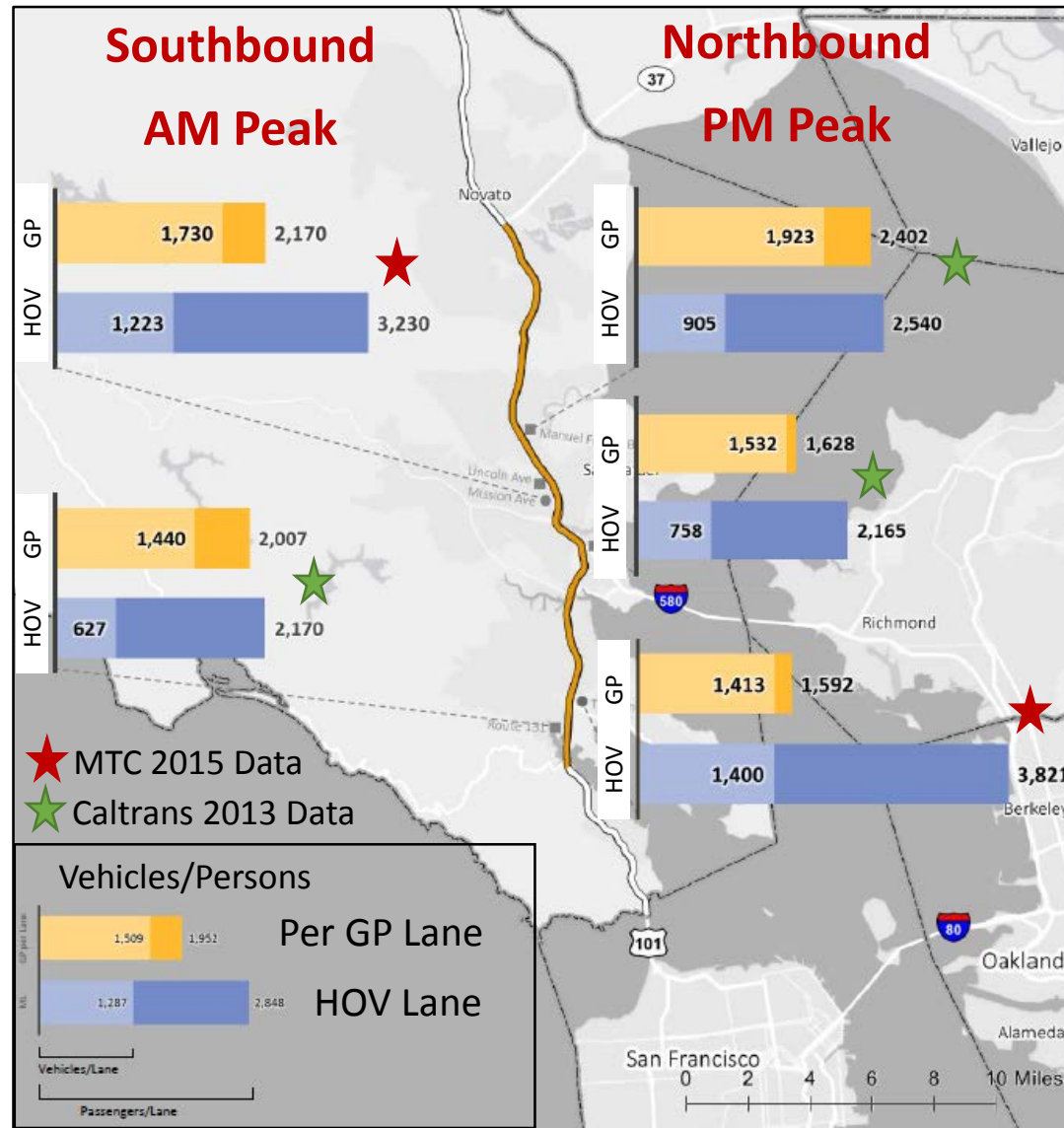
- Degraded HOV lanes increased by 37 miles
- Lanes degraded over 50% of the time increased by 45 miles (+74%)



Source: 2014 Caltrans HOV Lane Degradation Report

HOV Lanes Move Fewer Vehicles but More People than General Purpose Lanes

Marin 101 –
Vehicle & Person
Throughput



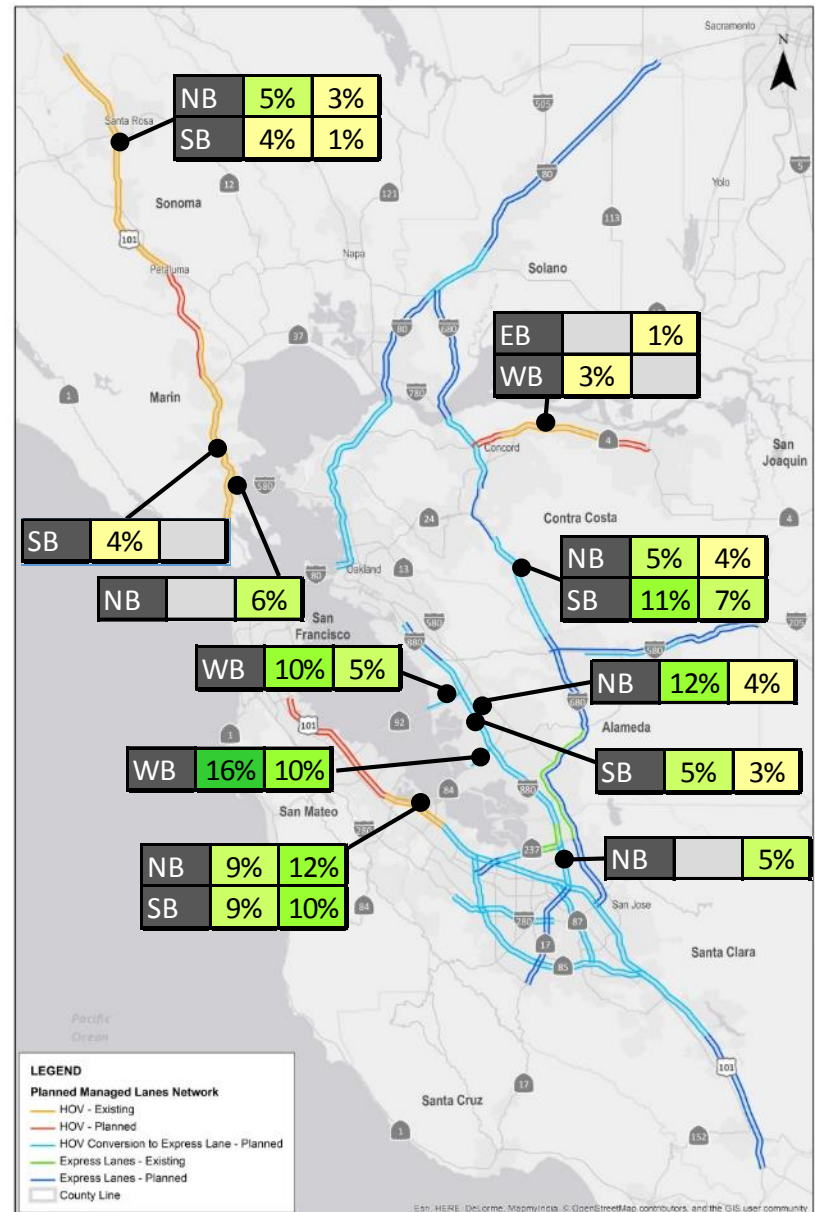
Source: MTC (2015), Caltrans (2013)

8% of Clean Air Vehicles (CAVs) in HOV Lane on average

- % of CAV in HOV Lane range from 1 – 18%
- Average is 6-8%
- 5 locations 10% or more
- Higher use closer to Silicon Valley/South Bay
- VTA reports 22% WB – 19% EB on SR-237 Express Lanes in FY 2015

Legend

	AM 6-9 AM	PM 3-7 PM	CAV %
NB	9%	12%	0-4%
SB	9%	10%	5-9%
			10-14%
			15-20%

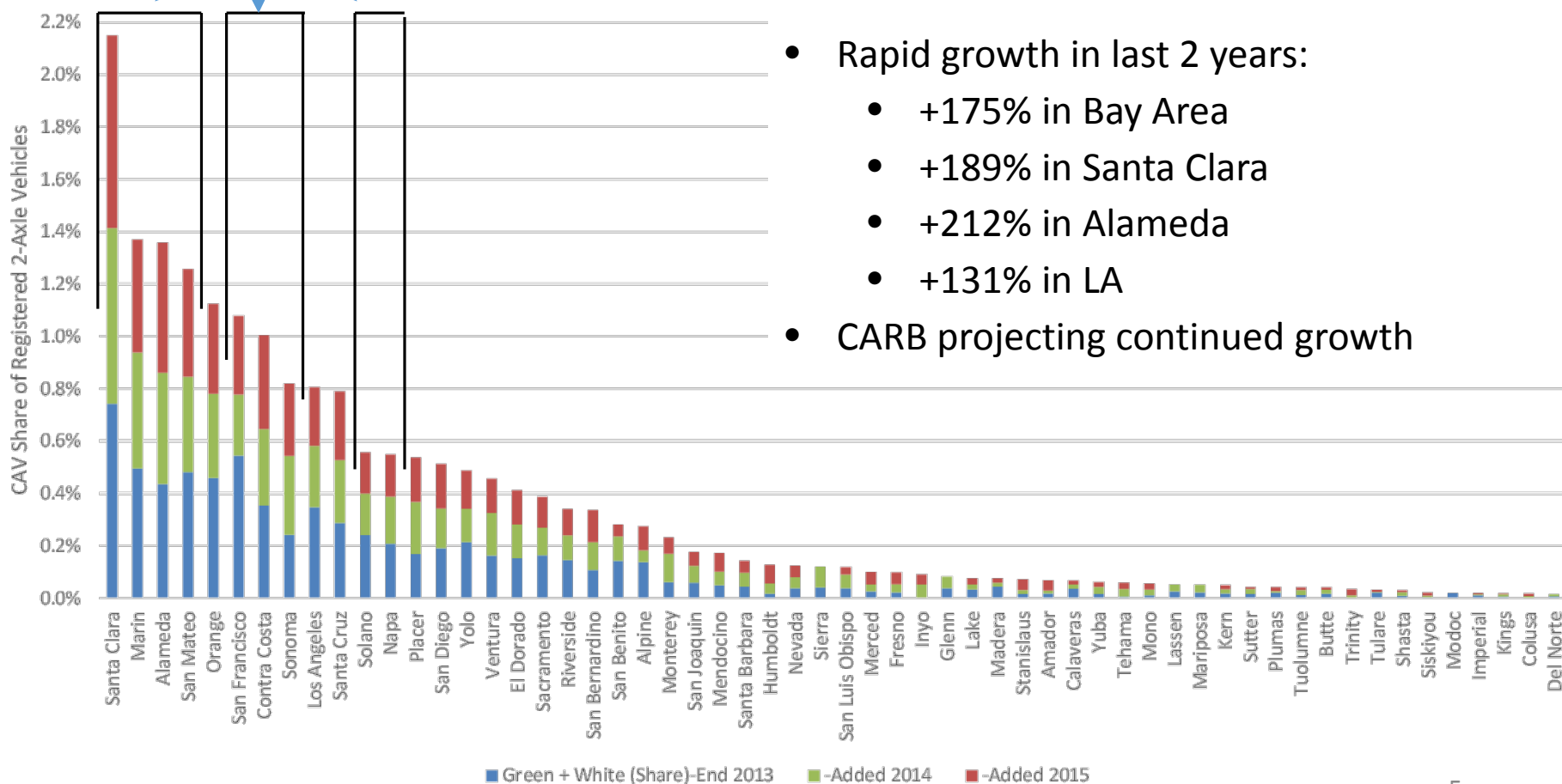


Source: MTC (2015)

Statewide CAV Share of Vehicles Highest in Bay Area

Bay Area Counties

CA Clean Air Vehicle Share of Vehicle Registration



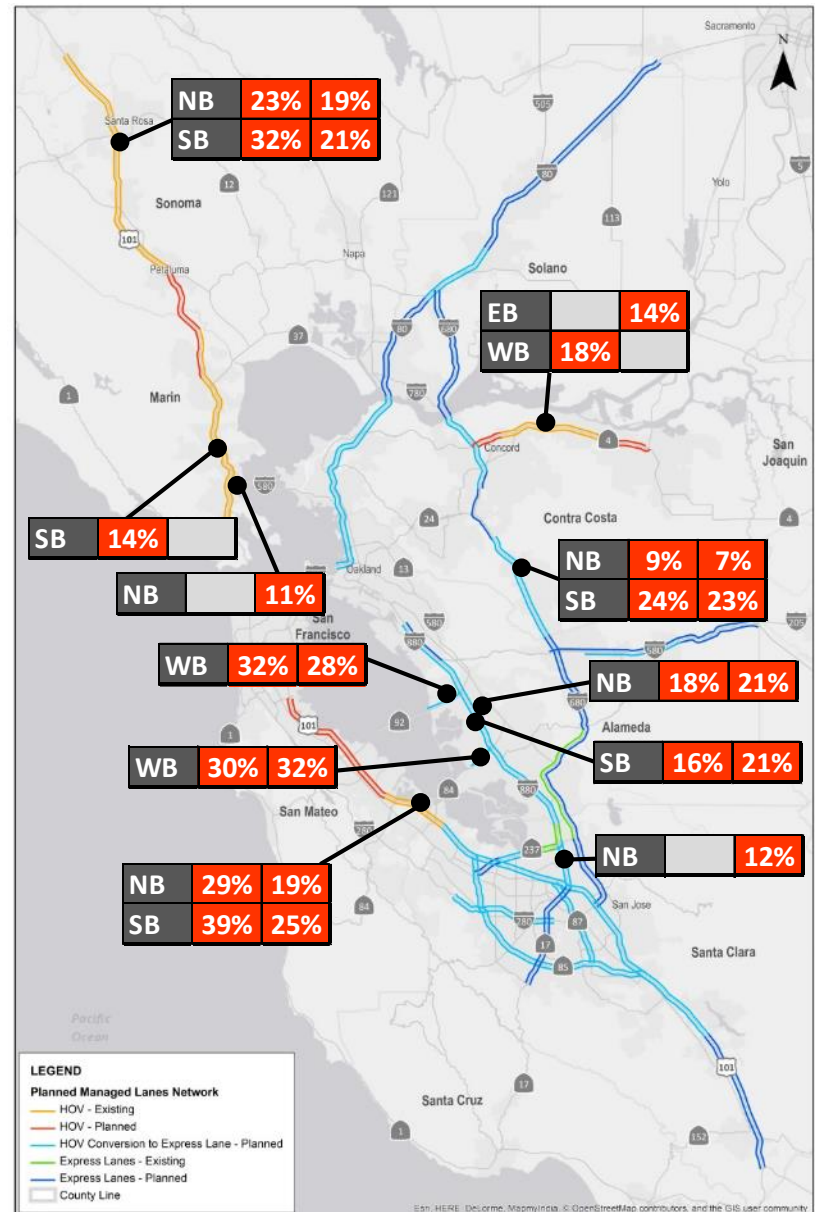
- Rapid growth in last 2 years:
 - +175% in Bay Area
 - +189% in Santa Clara
 - +212% in Alameda
 - +131% in LA
- CARB projecting continued growth

Average HOV Lane Violation – 24% in AM, 19% in PM

- AM Peak Period HOV Lane Violation Range: 9% to 39%
- PM Peak Period HOV Lane Violation Range: 7% to 32%

Legend

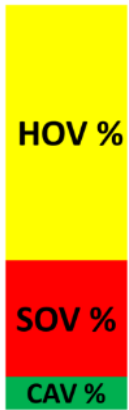
	AM 6-9 AM	PM 3-7 PM
NB	23%	19%
SB	32%	21%



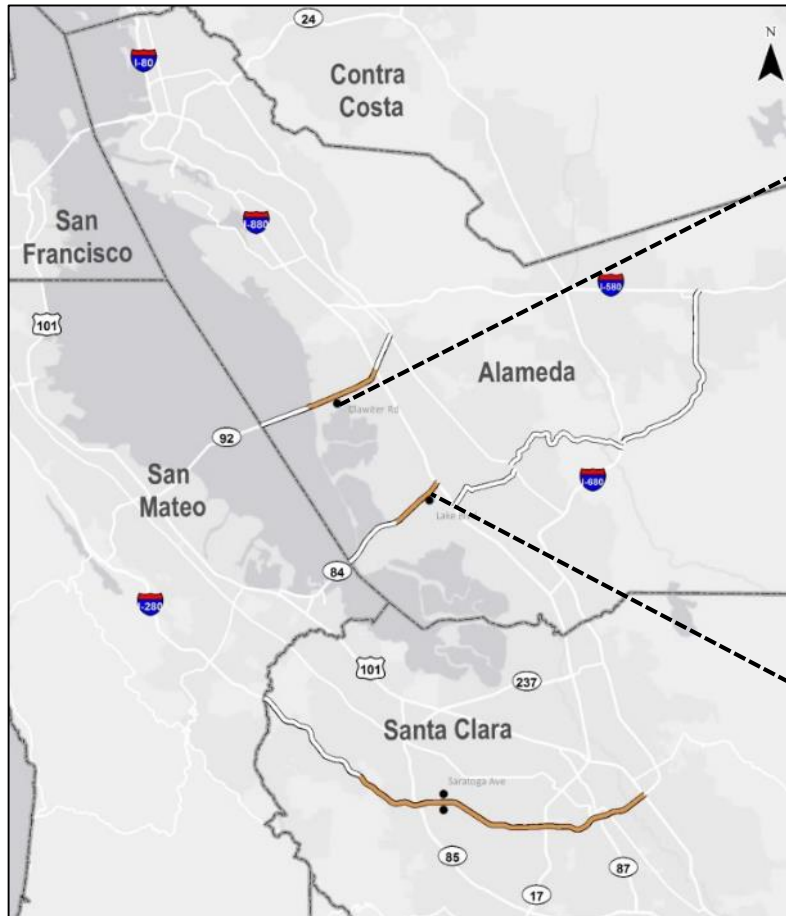
Alameda SR 92 and SR 84 HOV Lane Violation Ranges Between 30% and 32%

SR 92 & SR 84

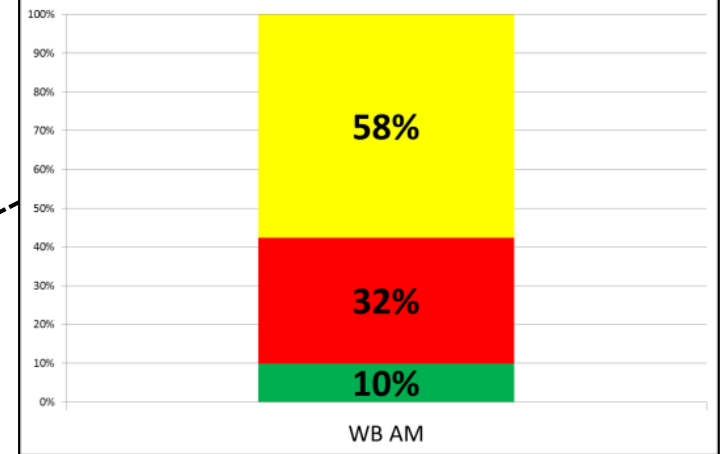
Legend



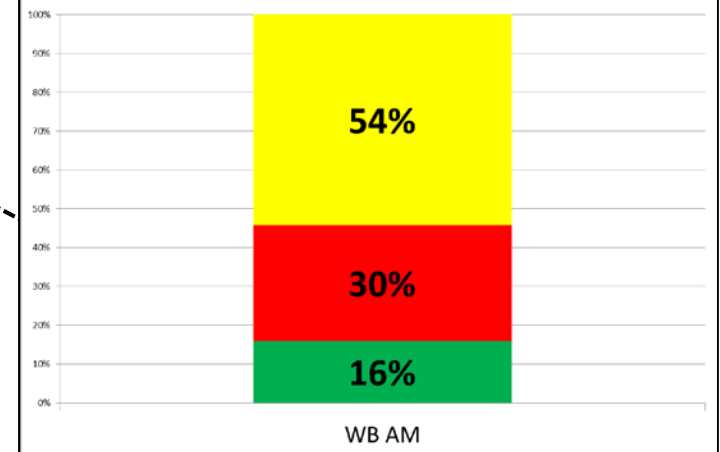
Counts during
HOV lane
hours of
operation
AM: 6-9 or 10
PM: 3-7



SR 92 at Clawiter Rd



SR 84 at Lake Blvd



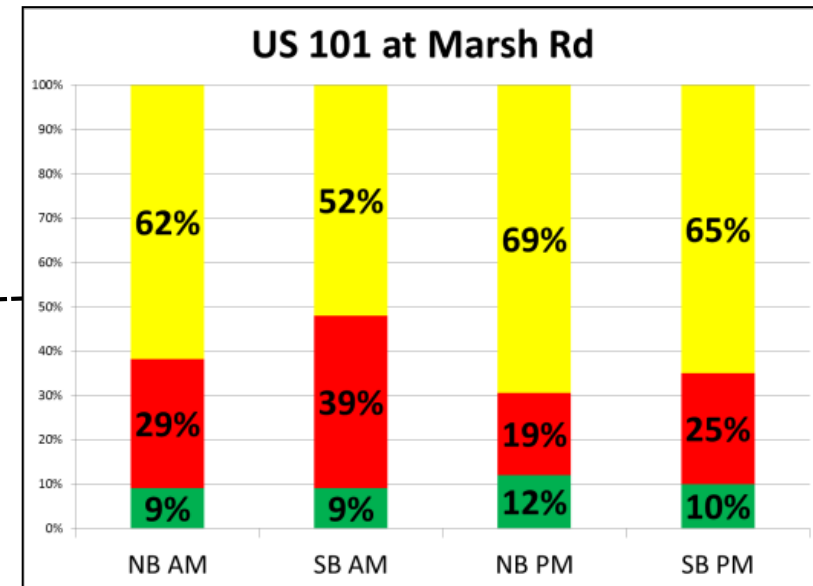
San Mateo US 101 HOV Lane Violation Ranges Between 19% and 39%

San Mateo US 101

Legend

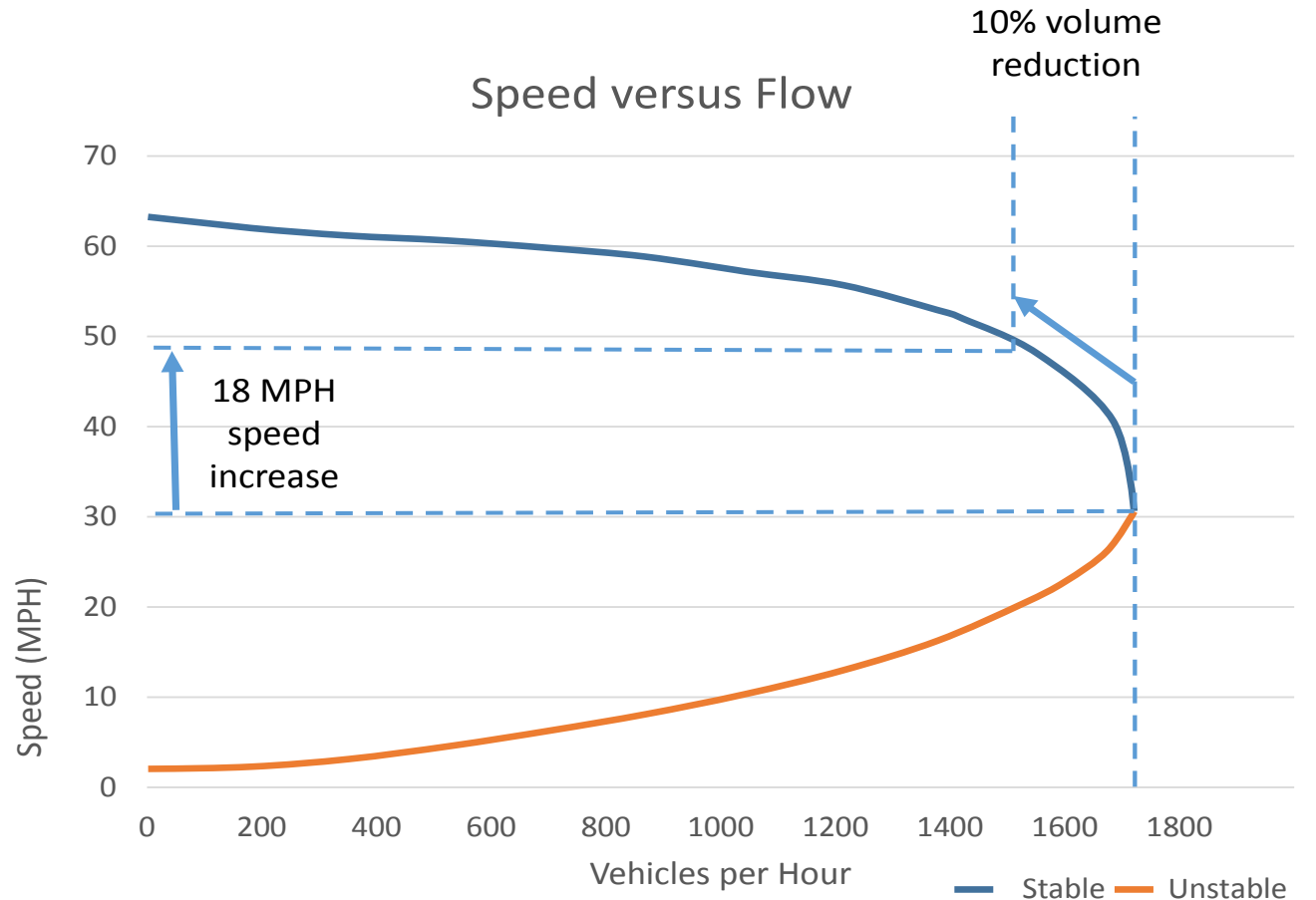


Counts during
HOV lane hours
of operation
AM: 6-9
PM: 3-7

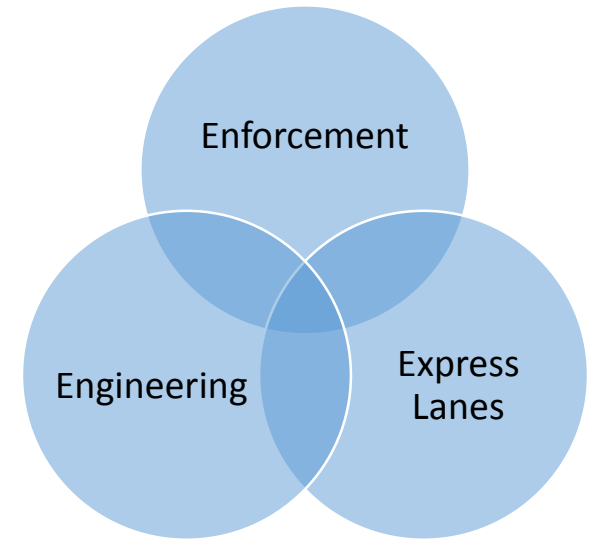


“Columbus Day” Effect

Reducing volumes by 5-10% can significantly increase speeds in degraded HOV lanes



Three E's to Address HOV Degradation & Violations



Enforcement

- Increase enforcement
 - Effective but costly*
 - Safety is CHP's primary mission
- Equip CHP with better tools
 - Pilot occupancy detection technologies

Express Lanes

- Provides SOVs with a legal option to use lane
- Added enforcement options – transponder, registration, and technology

Engineering

- Access control – continuous vs. restricted
 - Bay Area one of few regions with continuous access
 - Consider piloting restricted access striping at lane ends and weaving locations

** HOV violation fine revenue does not fund enforcement*