

San Mateo US 101 Express Lane Feasibility Study

Draft Report



Kittelson & Associates



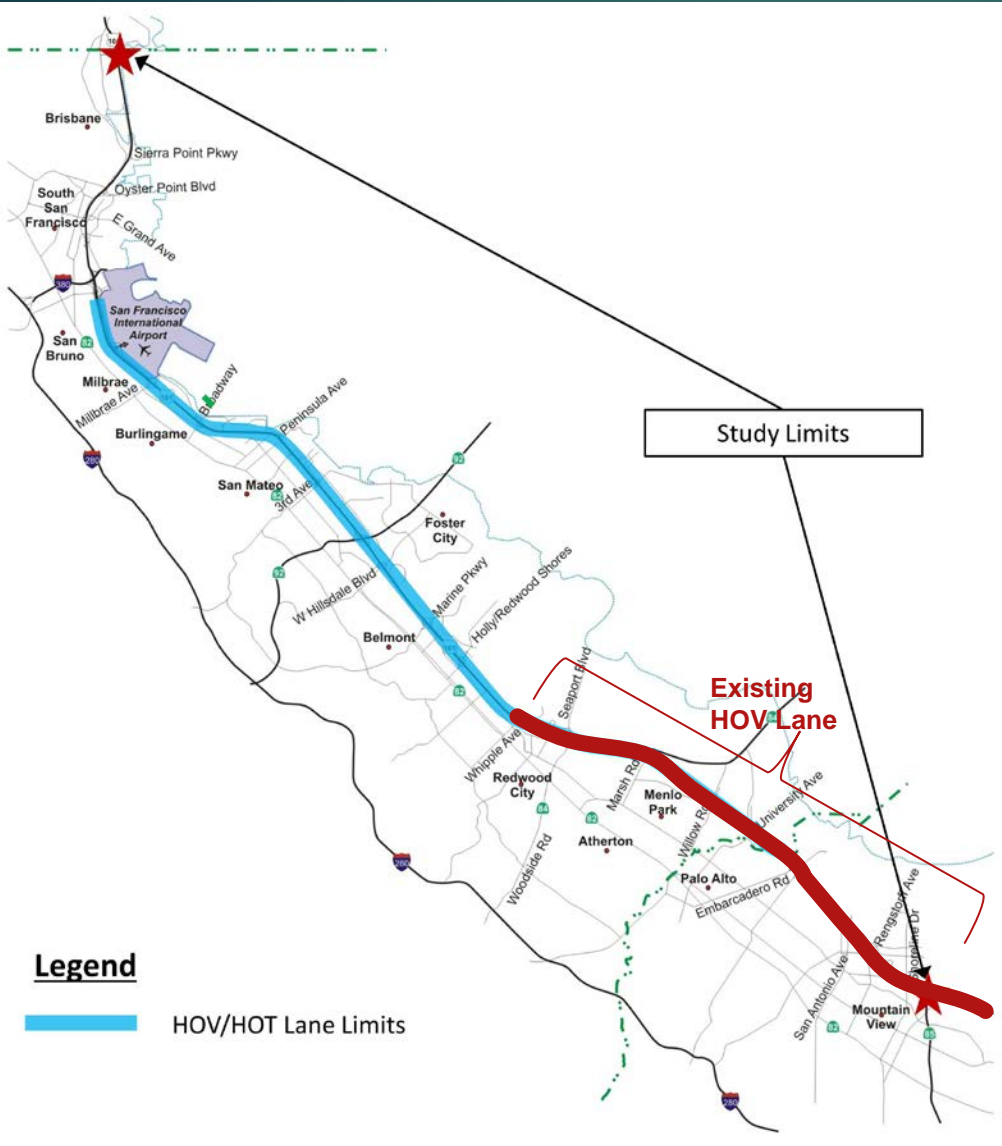
C/CAG Presentations - February, 2015

Why Are We Here?

- ▶ US 101 in San Mateo is the longest and most congested stretch of freeway in Bay Area without an HOV lane
- ▶ C/CAG, MTC, Caltrans Studies



Study Limits



- ▶ HOV/HOT Lane Limits
- ▶ Study Limits
- ▶ Extension Beyond Study Limits to Capture Effects of Queues

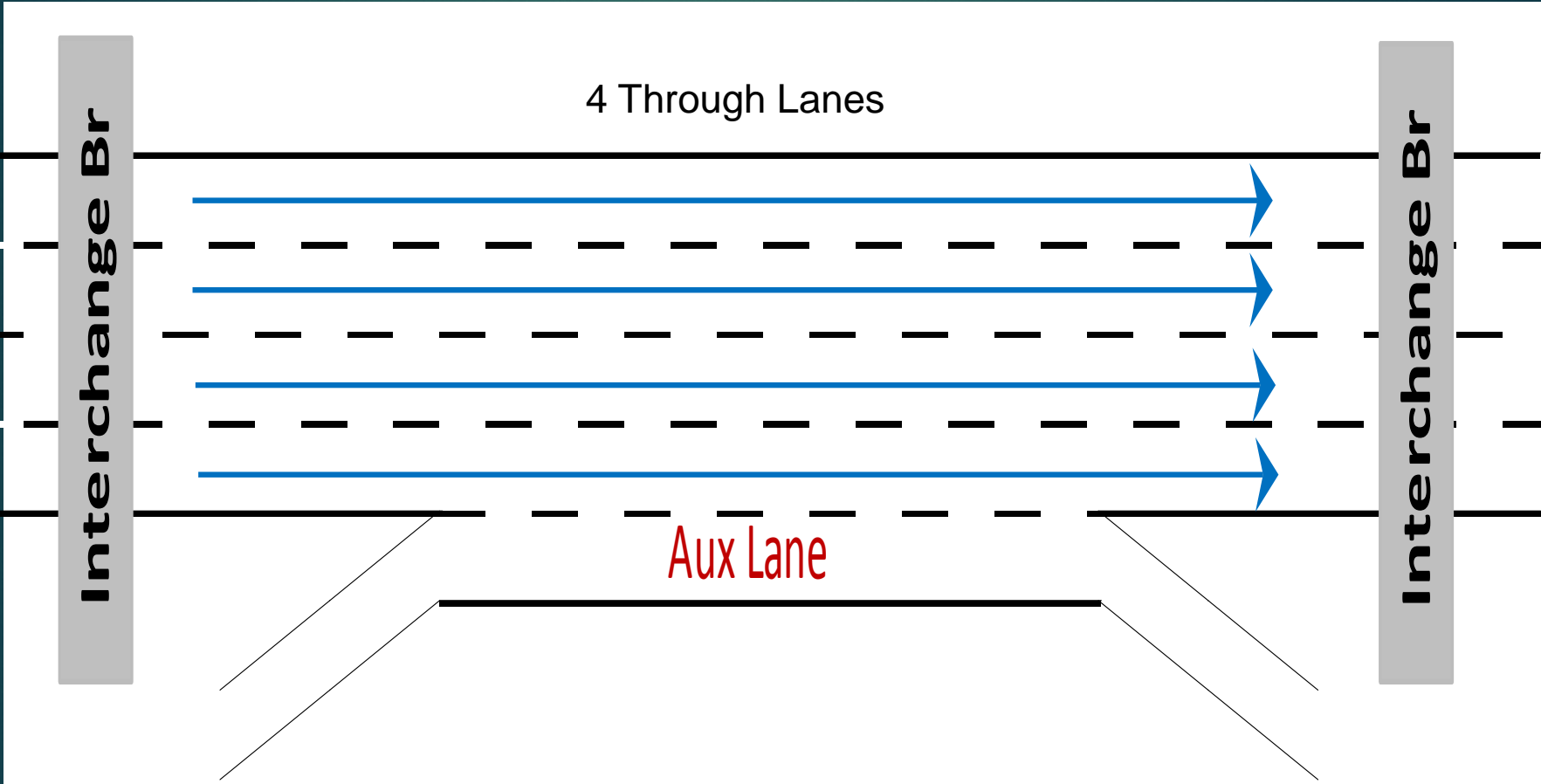
Shoehorning HOV on 101

- ▶ Figuring out how to fit HOV Lanes onto US 101
 - ▶ Add/Convert HOV Lane (March 2011)
 - ▶ All the way from Whipple to SF County Line
 - ▶ Add HOV lane : Cost Prohibitive
 - ▶ Convert regular lane to HOV: Creates unacceptable added delay
 - ▶ Looked at various options to improve cost-effectiveness.
 - ▶ Staged Innovative Add (Hybrid)HOV Lane (June 2012)
 - ▶ Only go from Whipple to I-380: \$156 million

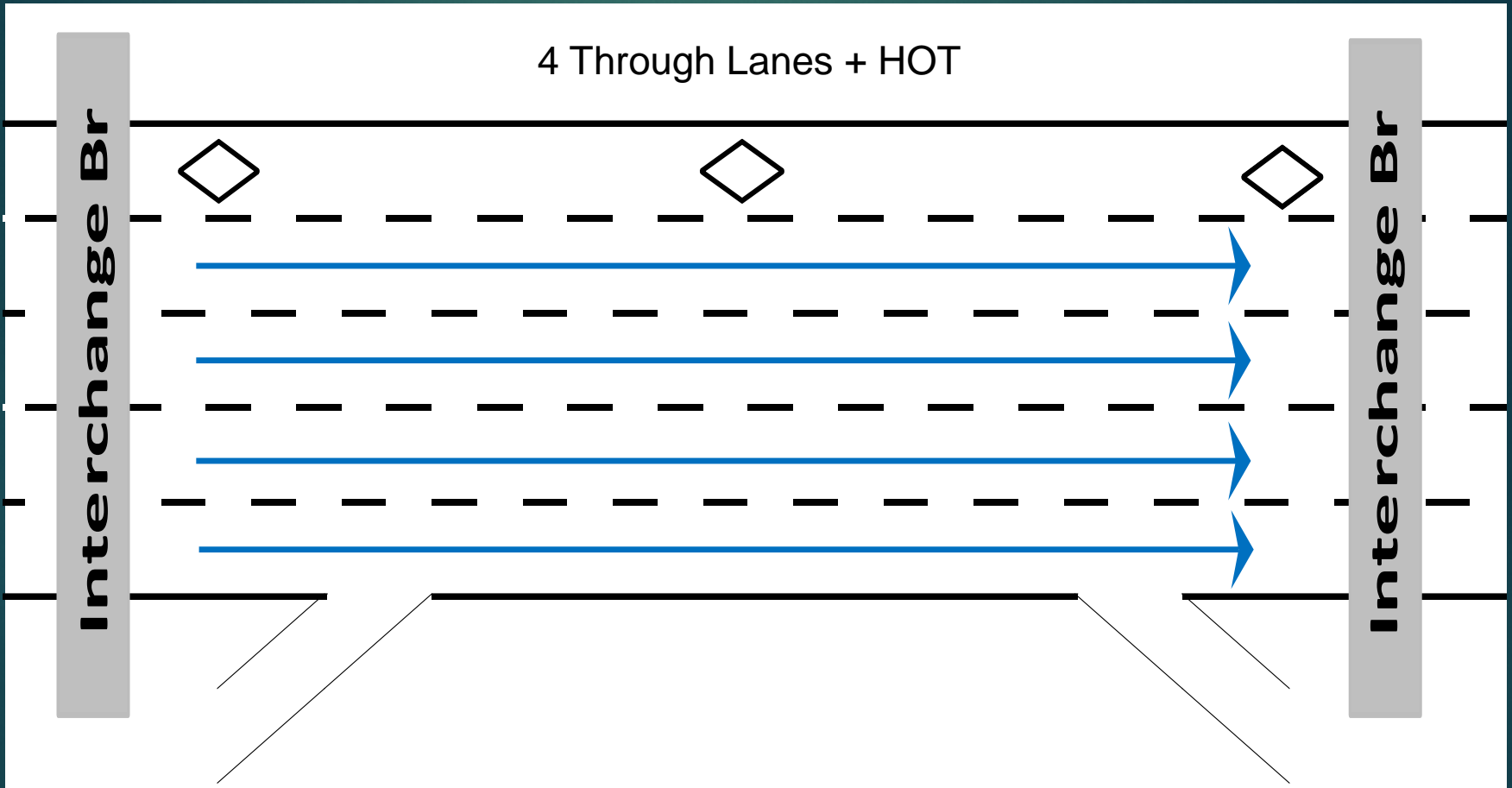
Latest Study – Go beyond HOV to HOT

- ▶ Purpose of Latest Study
 - ▶ Preliminary High Level Express Lane Feasibility Assessment
- ▶ Two Concepts
 - ▶ Concept 1: HOV-to-HOT (Innovative Add HOT Lane)
 - ▶ \$259 million
 - ▶ \$156 million to build HOV lanes
 - ▶ \$103 million to convert to express lane operation
 - ▶ Concept 2: GP-to-HOT (Convert HOT Lane)
 - ▶ \$108 million to convert to express lane operation
 - ▶ Traffic diversion or mode shift needed to mitigate travel delay impacts.

Existing Lanes

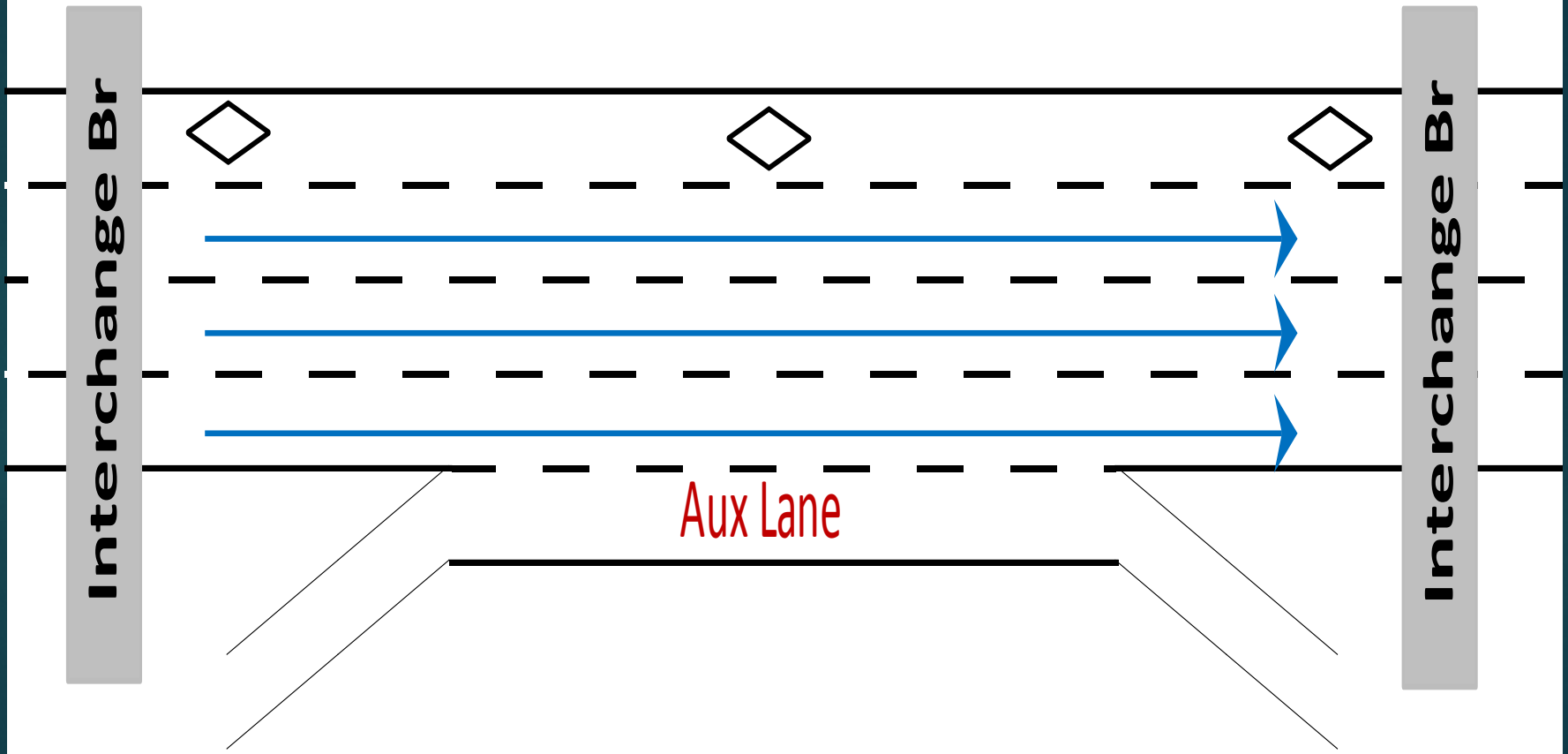


Concept 1 – Innovative



Concept #2 - Convert

3 Through Lanes + HOT



The Results

- ▶ Vehicle Capacity
- ▶ Freeway Congestion
- ▶ Freeway Performance
- ▶ Mixed Flow Lane travel times

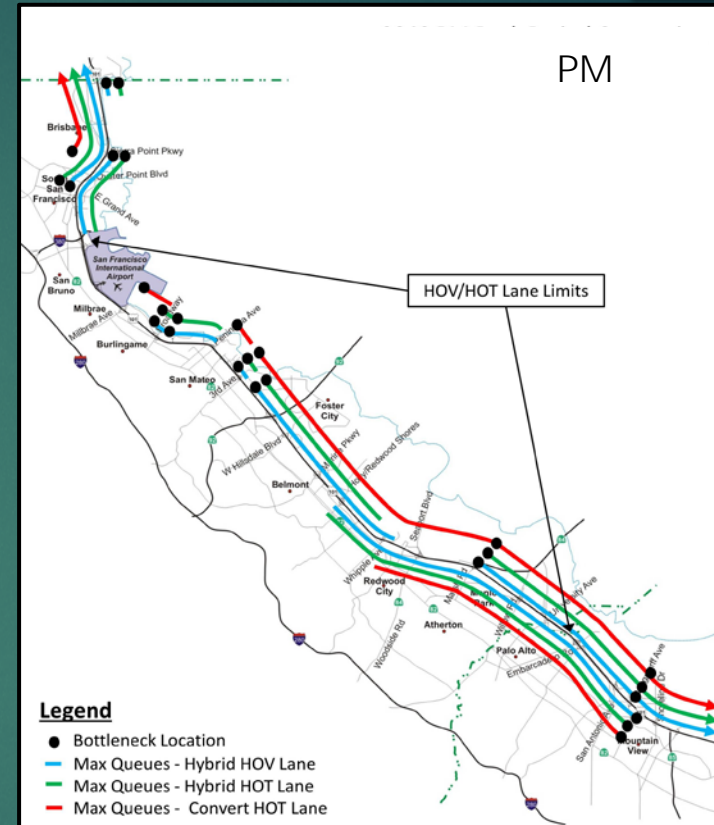
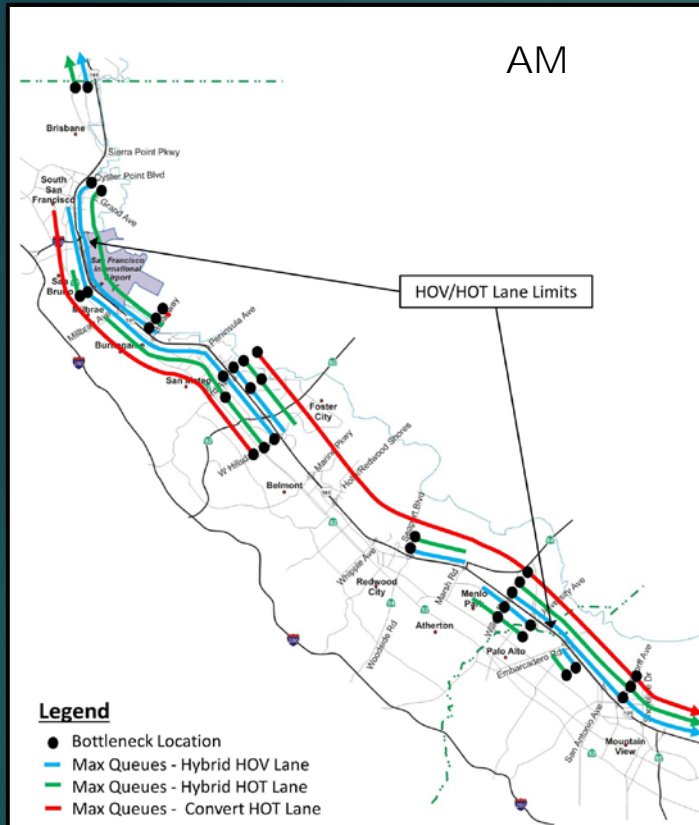
Caveats:

- Its tough modeling how people react to extreme congestion.
- Numbers will change

Available Capacity for Tolled Vehicles

- ▶ Concept 1 and Concept 2 Similar
- ▶ Northbound
 - ▶ More Capacity Available in Shoulder Hours
 - ▶ 6:00-7:00 and 9:00-10:00 AM
 - ▶ 2:30-3:30 and 6:30-7:30 PM
- ▶ Southbound
 - ▶ No Capacity south of Holly

Freeway Congestion



- ▶ Concept 1 Congestion Similar to Hybrid HOV
- ▶ Longer Queues with Concept 2

Freeway Performance Measures

Performance Measures	Staged Hybrid HOV	Concept 1 - Hybrid HOT	Concept 2 - Convert HOT	Concept 1 vs Staged Hybrid HOV	Concept 2 vs Staged Hybrid HOV
Vehicle Miles Travelled	5,145,600	5,166,500	4,836,400	0.4%	-6.0%
Vehicle Hours Travelled	187,000	184,000	187,400	-1.6%	0.2%
Vehicle Hours of Delay	107,800	104,400	113,000	-3.2%	4.7%
Person Miles Travelled	5,839,900	5,901,700	5,573,000	1.1%	-4.6%
Person Hours of Delay	109,200	105,800	113,400	-3.2%	3.8%
Average Vehicle Speed	27.5	28.1	25.8	2.1%	-6.2%
Average Person Speed	29.3	30.0	28.0	2.3%	-4.6%

How do they compare to Now?

- ▶ Do Nothing
 - ▶ Increased congestion on US 101, I-280, streets -
 - ▶ Increased crowding on SamTrans, Caltrain -
 - ▶ Increased greenhouse gas emissions -
- ▶ Concept 1 – Add Express Lane
 - ▶ Decreased congestion on US 101, I-280, streets +
 - ▶ Minor new revenues to invest in mitigations +
 - ▶ Lesser increase in transit crowding, increased HOVs +
 - ▶ Lesser increase in GHG +
- ▶ Concept 2 – Convert Lane to Express Lane
 - ▶ Increased congestion on US 101, I-280, streets -
 - ▶ Minor new revenues to invest in mitigations +
 - ▶ Greatly increased transit ridership/service, increased HOVs +
 - ▶ Lesser increase in GHG +

The Bottom Line

- ▶ Find some way to do the Express Lane.
 - ▶ It is better than doing nothing.