

# San Francisco Freeway Corridor Management Study (SF FCMS)

## Phase 1 Findings and Recommendations Agenda Item 6



**SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY**  
**Plans and Programs Committee**  
**March 17, 2014**

# What is the San Francisco Freeway Corridor Management Study?



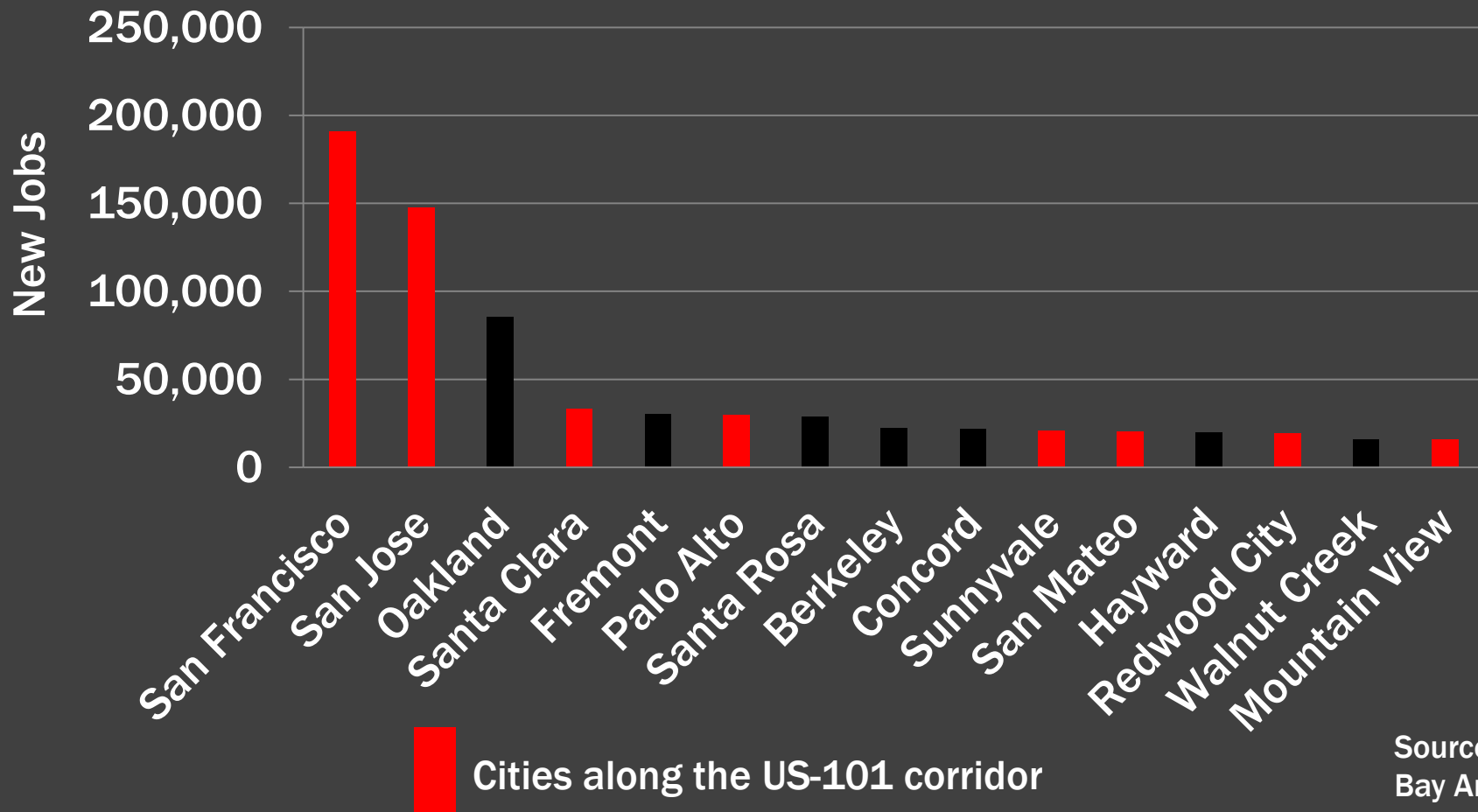
WHY AN SF FCMS? > APPROACH AND GOALS > POTENTIAL STRATEGIES > NEXT STEPS

- ▶ **Recommendation of 2013 SFTP**
- ▶ **Performance-based assessment of strategies for managing growth in travel demand & raising fwy performance**
- ▶ **Focused on US-101, I-280, and related local streets**
- ▶ **For near- and mid-term implementation**
- ▶ **Phase 1: today's management approach; goals; range of potential strategies**
- ▶ **Phase 2: technical analysis; recommended strategies; implementation plan**
- ▶ **Throughout: Stakeholder outreach**

# 70% of “Big 15” Cities’ New Jobs Planned for US-101 & I-280 Corridors



## Bay Area Job Growth, 2010-2040, Top 15 Cities

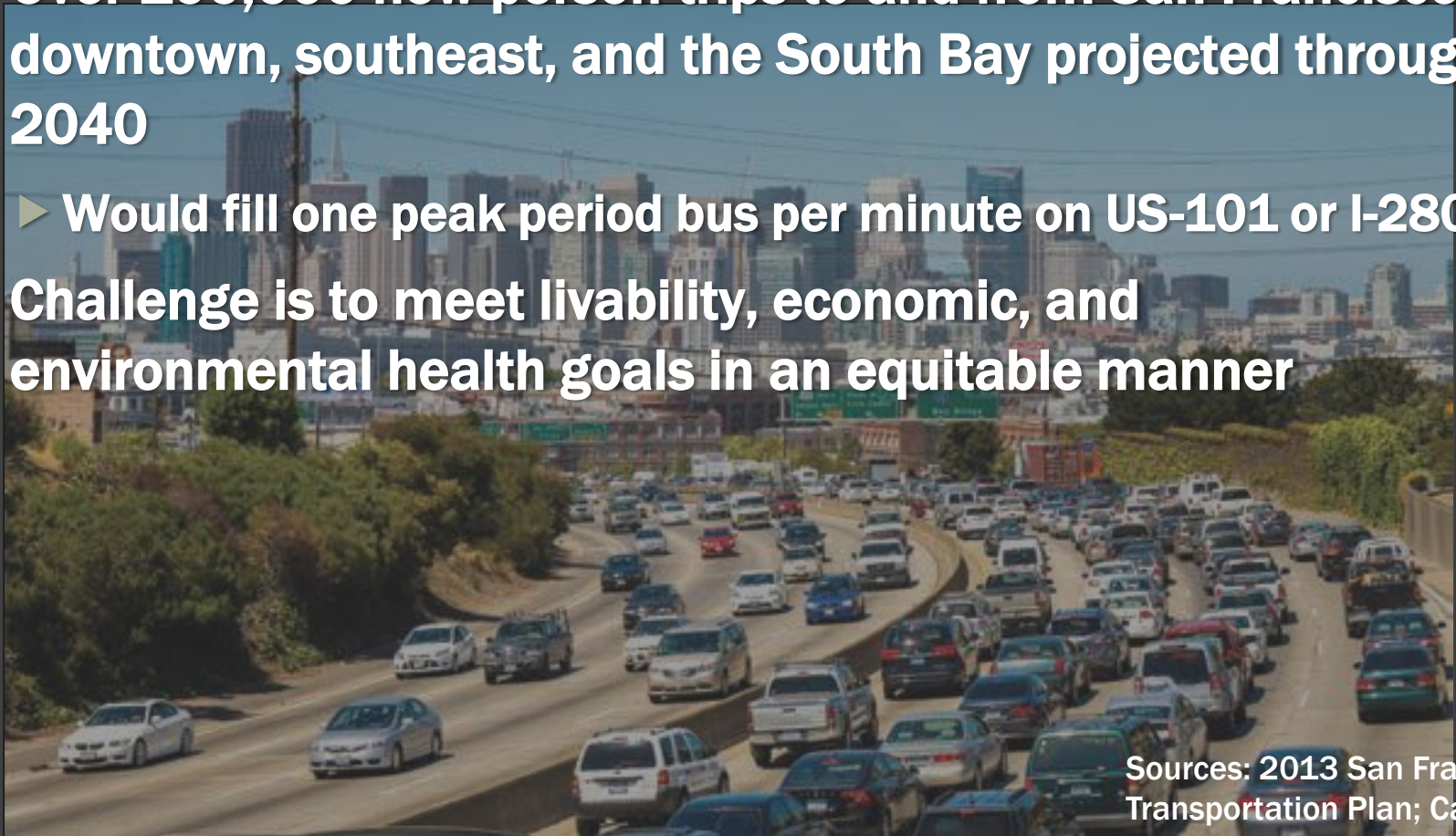


# Why a San Francisco Freeway Corridor Management Study?



WHY AN SF FCMS? > APPROACH AND GOALS > POTENTIAL STRATEGIES > NEXT STEPS

- ▶ **Over 100,000 new person-trips to and from San Francisco's downtown, southeast, and the South Bay projected through 2040**
  - ▶ **Would fill one peak period bus per minute on US-101 or I-280**
- ▶ **Challenge is to meet livability, economic, and environmental health goals in an equitable manner**



Sources: 2013 San Francisco Transportation Plan; Caltrans 2014

# Other agencies' US-101 corridor management efforts

- ▶ Valley Transportation Authority US-101 Express Lanes
- ▶ San Mateo US-101 High Occupancy Vehicle (HOV) Lanes
- ▶ Ramp metering throughout Peninsula
- ▶ El Camino Real "Smart Corridor"



**Also underway:**

- MTC's Regional Managed Lanes Implementation Plan
- Caltrans Statewide Managed Lanes Master Plan

Existing and planned regional projects related to San Francisco's I-80, US-101, and I-280 corridors

- Park-and-Ride Lot
- Conversion of Existing HOV to Express Lane
- Planned HOV Lane
- Planned Ramp Metering
- Existing Ramp Metering
- ITS/SMART Corridors
- MTC Transit Core Capacity Study
- I-280 Management Study
- Caltrain Electrification

# SF Fwy Corridor Management Goals and Objectives



WHY AN SF FCMS? > **APPROACH AND GOALS** > POTENTIAL STRATEGIES > NEXT STEPS

GOALS	OBJECTIVES
Move people to support economic competitiveness	Improve freeway corridor productivity, utilization, & efficiency Increase vehicle occupancy levels Reduce recurrent delay
Travel reliability	Reduce non-recurrent delay Improve travel time predictability
Travel choices	Increase transit competitiveness Provide better information
Coordination across jurisdictions	Coordinate recommendations with other citywide and regional projects & programs
Reduce traveler emissions	Reduce per capita vehicle tripmaking Reduce per capita vehicle emissions
Balanced effects: Avoid disparities, minimize impacts on neighborhoods	Mitigate the impact of through-trips on local streets Ensure safety and equitable access Avoid disparities in distribution of benefits / impacts

# Potential Freeway Corridor Management Strategies



WHY AN SF FCMS? > APPROACH AND GOALS > **POTENTIAL STRATEGIES** > NEXT STEPS

- Caltrain Electrification and DTX
- Muni T-Third
- Express bus
- Shuttle services

**Transit  
Alternatives**

**Travel  
Demand  
Management  
(TDM)**

- Employer-based incentives (flex time, parking cash-out)
- First / last mile solutions

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**Transit Alternatives**

- Employer-based incentives (flex time, parking cash-out)
- First / last mile solutions

**Travel Demand Management (TDM)**

**Lane Management**

- Ramp metering
- Weave / merge guidance
- High Occupancy Vehicle (HOV) Lanes
- Express Lanes

**Operations Technologies**

- Adaptive signal control
- Real-time and advance information
- Dynamic speed advisories



# Operations Technology Strategies: Real Time Information



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- ▶ **Also known as Advanced Traffic Management Systems (ATMS)**
- ▶ **Uses real-time info and changeable message signs to guide drivers**
- ▶ **Example goal: shift drivers to other routes or modes**
- ▶ **Operated by Caltrans at some locations along US-101 and I-280**
- ▶ **Award-winning 2009 Caltrain info pilot (see image)**



Image source:  
Caltrans, 2009

# Operations Technology Strategies: Adaptive Signal Timing

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- ▶ **Technology at intersections sends continuous data to a Transportation Management Center (TMC)**
- ▶ **Example goal: manage system more efficiently in real time**
- ▶ **Many cities deploy adaptive signal timing; TMCs operated by numerous state, regional, countywide, and local jurisdictions**
- ▶ **SFMTA's SFgo signal technology and new TMC allow for adaptive signal control**

Image: SFMTA TMC,  
2014

# Operations Technology Strategies: Adaptive Ramp Metering

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- ▶ **Uses signals and real-time information to limit number of vehicles entering a freeway**
- ▶ **Example goal: increase freeway speed**
- ▶ **In-place along much of US-101 in San Mateo and Santa Clara; planned for the remainder in these counties**
- ▶ **Planned in SF for Treasure Island ramps**



Image source:  
Federal Highway  
Administration<sup>11</sup>

# Managed Lanes Strategies: High Occupancy Vehicle (HOV) Lanes

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- ▶ **Prioritize ramps or lanes for transit and vehicles with many passengers**
- ▶ **US-101 has HOV lanes in Santa Clara; planned for San Mateo**
- ▶ **HOV in San Francisco**
  - ▶ **Essex Street on-ramp, SOMA**
  - ▶ **I-280 from Alemany to 6<sup>th</sup> Street, 1975 – 1989**



Images: WS DOT,  
FHWA

# Recommendations and Next Steps



WHY AN SF FCMS? > APPROACH AND GOALS > POTENTIAL STRATEGIES > NEXT STEPS

- ▶ **Complete Scope of Work for FCMS Phase 2**
  - ▶ **Technical analysis based on Phase 1**
  - ▶ **Outreach**
- ▶ **Initiate FCMS Phase 2 technical work and outreach in parallel with regional and state efforts**
- ▶ **Participate in regional coordination forums**
  - ▶ **Express Lanes Executive Steering Committee**
  - ▶ **Managed Lanes Leadership Team**
  - ▶ **Arterial Operations Committee**

# Schedule



WHY AN SF FCMS? > APPROACH AND GOALS > POTENTIAL STRATEGIES > NEXT STEPS

	2014		2015				2016		
	Jul	Oct	Jan	Mar	Jul	Oct	Jan	Mar	Jul
SF FCMS									
Phase 1									
Phase 2									
Agency coordination									
Public outreach									
Related Studies									
C/CAG US 101 PSR									
MTC Managed Lanes Implementation Plan									
Caltrans Managed Lanes Master Plan									

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