

Metropolitan Transportation Commission Operations Committee

October 9, 2020

Agenda Item 6c

Bay Area Express Lanes Strategic Plan – Approaches to Minimize Greenhouse Gas Emissions While Completing the Regional Express Lanes Network

Subject: Update on the Bay Area Express Lanes Strategic Plan and presentation of approaches to minimize Express Lane Network Project increases in greenhouse gas emissions or vehicle miles traveled to be described in a forthcoming white paper. Discussion of trade-offs between express lane projects that convert existing travel lanes compared to those that construct new capacity to fill gaps and complete the network. Report on recommendations for the Strategic Plan.

Background: A working group of Bay Area Express Lane providers and Caltrans regularly meets to work on the Bay Area Express Lanes Strategic Plan (Strategic Plan). In December 2020, staff presented to this Committee a two-track effort to advance the express lane network. Using agreed upon program goals, Track 1 identified recommendations for the California Transportation Commission's 2020 Senate Bill 1 (SB1) project endorsements. Initial programming of the Regional Measure 3 Express Lanes Program was also presented to the Programming and Allocations Committee in May as MTC Resolution No. 4411, Revised.

Track 2 was to originally develop a 10-year strategy for implementing express lane projects. Due to timing related to Plan Bay Area 2050, staff pivoted to more directly align with Plan Bay Area 2050 development. Track 2 encompasses:

1. An express lane network that reflects key policies and goals of the Plan Bay Area 2050 over 30 years. Staff presented the recommended Regional Express Lane Network to the Operations Committee in June; and
2. A Strategic Plan that sets forth agreed upon goals, policies, and strategies to guide implementation of the network.

The Strategic Plan involves additional research on several topics that have emerged as important focus areas in Plan Bay Area 2050 and through staff presentations to MTC. These include greenhouse gas emissions/vehicle miles traveled reduction, express bus, financing strategies, strategic funding principles and cost effectiveness, consistent tolling policies, and relation to a future all-lane tolling study. Staff has substantially completed the first white paper, which describes approaches to minimize and address increases to greenhouse gas/vehicle miles traveled and will present a summary and recommendations to this committee.

1. Greenhouse Gas and Vehicles Miles Traveled in the Bay Area

The Bay Area Express Lanes Network is a transportation infrastructure project that seeks to improve the efficiency of the regional highway network while also helping to achieve regional greenhouse gas target of 19% per capita reduction from 2005 levels by 2035. Today, the region has 210 express lane miles in operation or under construction (see Attachment A). To complete the network and provide seamless travel for express buses and carpools, it will be necessary to connect existing segments and close gaps.

The consideration of greenhouse gas reduction and completing the network together presents trade-offs between lane conversion and new-lane express lane projects. Projects that add capacity will likely be subject to recently revised guidelines for the California Environmental Quality Act (CEQA) in accordance with Senate Bill 743

(SB 743). SB 743 does not explicitly require analysis of greenhouse gas emissions. However, the guidelines require that vehicle miles traveled be used to analyze transportation impacts as a means to meet the state's greenhouse gas reduction goals. Projects that add capacity are likely to increase vehicle miles traveled, requiring mitigation, while projects that convert existing lanes are not.

The current plan for the express lane network is unlikely to be able to be completed with conversion projects alone. Practically, some gaps in the network may only be able to be filled by increasing capacity. At the same time, it is imperative to close gaps and provide a connected network since the connected network is critical to make transit and carpooling fast and reliable.

The diversity of express lane projects and the heterogeneous characteristics of the Bay Area mean that different types of projects have different considerations when it comes to greenhouse gas and vehicle miles traveled impacts. It is important to acknowledge that these considerations are general, and that specific project-level analysis is required to determine whether recommendations are appropriate.

2. Different Project Types have Different Greenhouse Gas/Vehicle Miles Traveled Reduction Strategies

Determining whether to close gaps by converting an existing lane or building a new lane has potential wide-ranging effects on greenhouse gas emissions.

- **Lane conversion:** Converting a high-occupancy vehicle (HOV) lane or a general purpose lane to an express lane is unlikely to increase vehicle miles traveled. However, without improving transit, carpooling, and transportation demand management (TDM), general purpose lane conversion in particular may lead to short-term increases in congestion, possibly affecting greenhouse gas emissions.
- **New construction:** Building new capacity introduces challenges with increases in vehicle miles traveled that may need to be mitigated. While in the short-term, congestion may be expected to ease, within a few years, highways with new capacity can be expected to return to a congested state due to induced demand, resulting in possible increased greenhouse gas emissions. As with lane conversion, congestion and/or VMT reduction with new construction likely requires improving transit, carpooling, and transportation demand management (TDM).

3. Operational, Political and Financial Implications

While lane conversions can be expected to have the best long-term outcomes for greenhouse gas/vehicle miles traveled reduction, they have several challenges to implementation. Similarly, new construction presents challenges of its own.

- **Lane conversion:** Challenges with conversion arise primarily when considering converting general purpose lanes. Conversion of general purpose lanes to express lanes has no significant historical precedent in the United States, but conversion of general purpose lanes to HOV lanes has been unpopular historically due to short-term increases to congestion in general purpose lanes. These may be overcome by investment in transit and promoting other TDM strategies, however investments will likely need to be rigorous to be effective, increasing costs. Conversion of general purpose lanes to express lanes also faces barriers in current state and federal statutes.

- **New construction:** Under SB743, capacity increases require mitigation for increases in vehicle miles traveled. In addition to the expense of mitigation, the fact that this statutory requirement is relatively new means that there are few established options to for mitigation. Emerging concepts of vehicle miles traveled exchanges and banks may help in this regard eventually.

Issues:

It is unlikely that the network can be completed solely through lane conversion. While mitigations for increases in vehicle miles traveled must occur at the project level under CEQA, it is important to consider the network as a regional system and try to identify potential regional approaches to minimize increases in greenhouse gas emissions. Staff recommends MTC consider the following steps to advance greenhouse gas reduction goals while fostering regional cooperation and supporting completion of the Express Lanes Network:

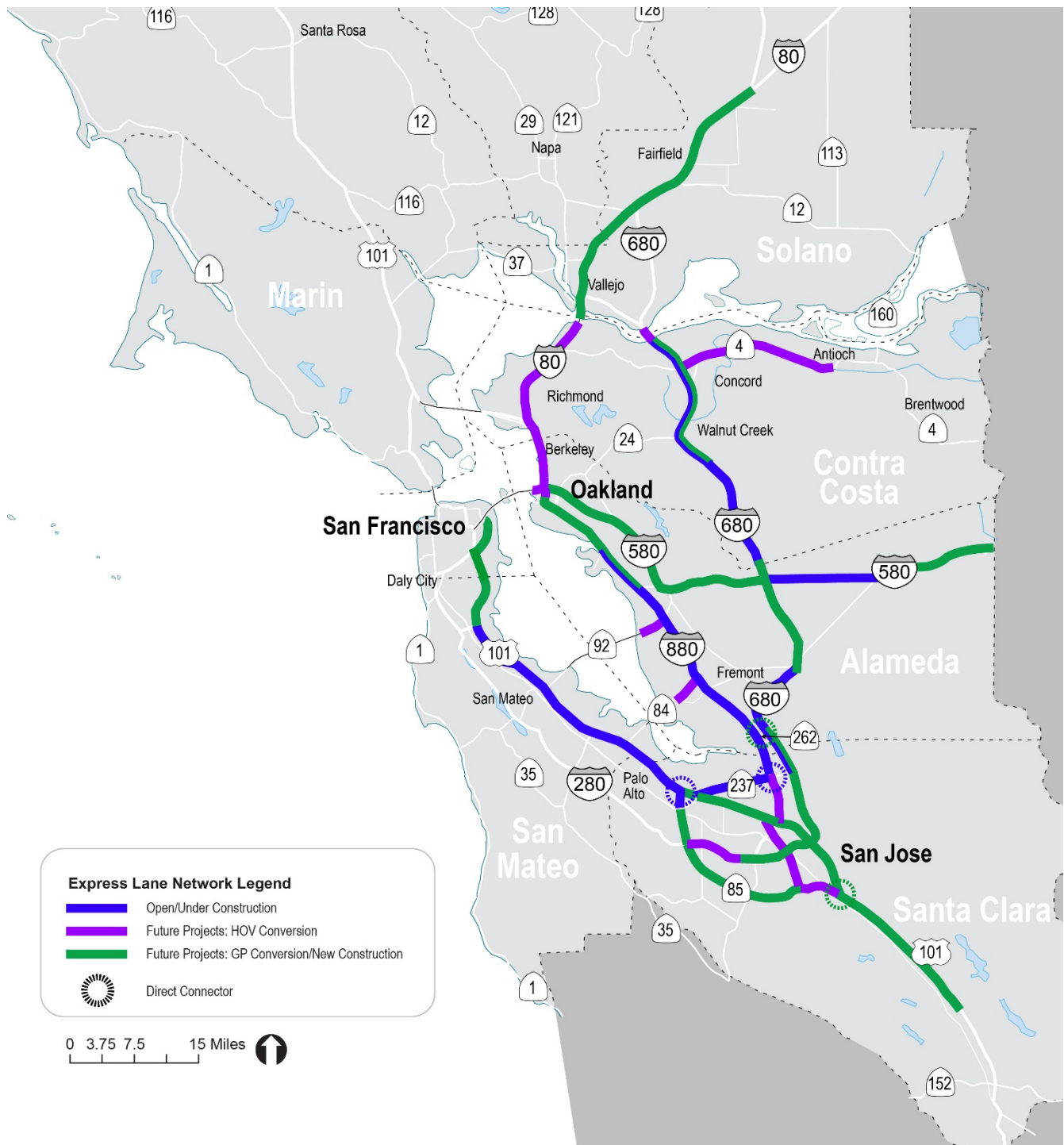
- **Participate with partners in regional mitigation solutions:** MTC and express lanes partners should closely track and contribute to the SB 743 implementation process and to the development of mitigation tools such as vehicle miles traveled exchanges and banks. MTC may have a role in the promotion or development of a regional vehicle miles traveled bank or exchange to help enable off-site mitigations. It should be noted that such an effort would be a considerable undertaking;
- **Advocate for legislation:** MTC and express lane partners should advocate for clear laws and policies that allow testing pilots or implementation of general purpose lane conversion; and
- **Consider encouraging lane conversion projects through funding principles:** MTC may want to incentivize lane conversion projects through strategic funding principles. Staff will explore this further with the Committee in a future presentation on strategic funding principles.

MTC is currently awaiting feedback from express lanes partners on the final draft of the white paper. Changes may need to be implemented in consideration of this feedback. On completion of editing, the paper will be made available for review.

Attachments: Attachment A: Bay Area Express Lanes Network Map by Project Type
Attachment B: Presentation: Bay Area Express Lanes White Paper – Minimizing and Addressing Increases in Greenhouse Gas Emissions/Vehicle Miles Traveled


Therese W. McMillan

Bay Area Express Lanes Network Map by Project Type



Operations Committee Presentation: Bay Area Express Lanes White Paper Minimizing and Addressing Increases in Greenhouse Gas Emissions / Vehicle Miles Traveled

October 9, 2020



METROPOLITAN TRANSPORTATION COMMISSION

Background:

Simultaneous Efforts, in Concert with Partners

Summer 19

Fall 19

Winter 19

Spring 20

Summer 20

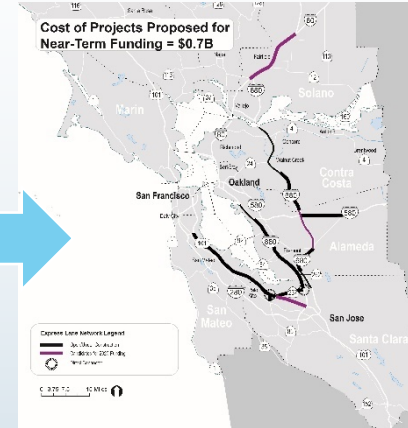
Track 1: Near-Term Funding



Identify express lane candidates for 2020 SB1 Cycle 2 Congested Corridors & Trade Corridors Programs

MTC adopts RM3 and SB1 programs

Sponsors submit applications to CTC



Track 2: Plan Bay Area 2050



Develop 10-year plan express lanes implementation plan

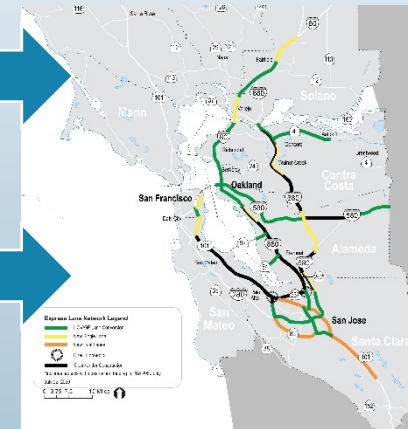
Transition to 15/30-year implementation

Finalize network, commitment letter

Consider emerging Plan Bay Area 2050 policy issues

- Reduce congestion
- Incentivize HOV
- Timeliness
- Cost Effectiveness

- Equity
- GHG/VMT Reduction
- Express Bus



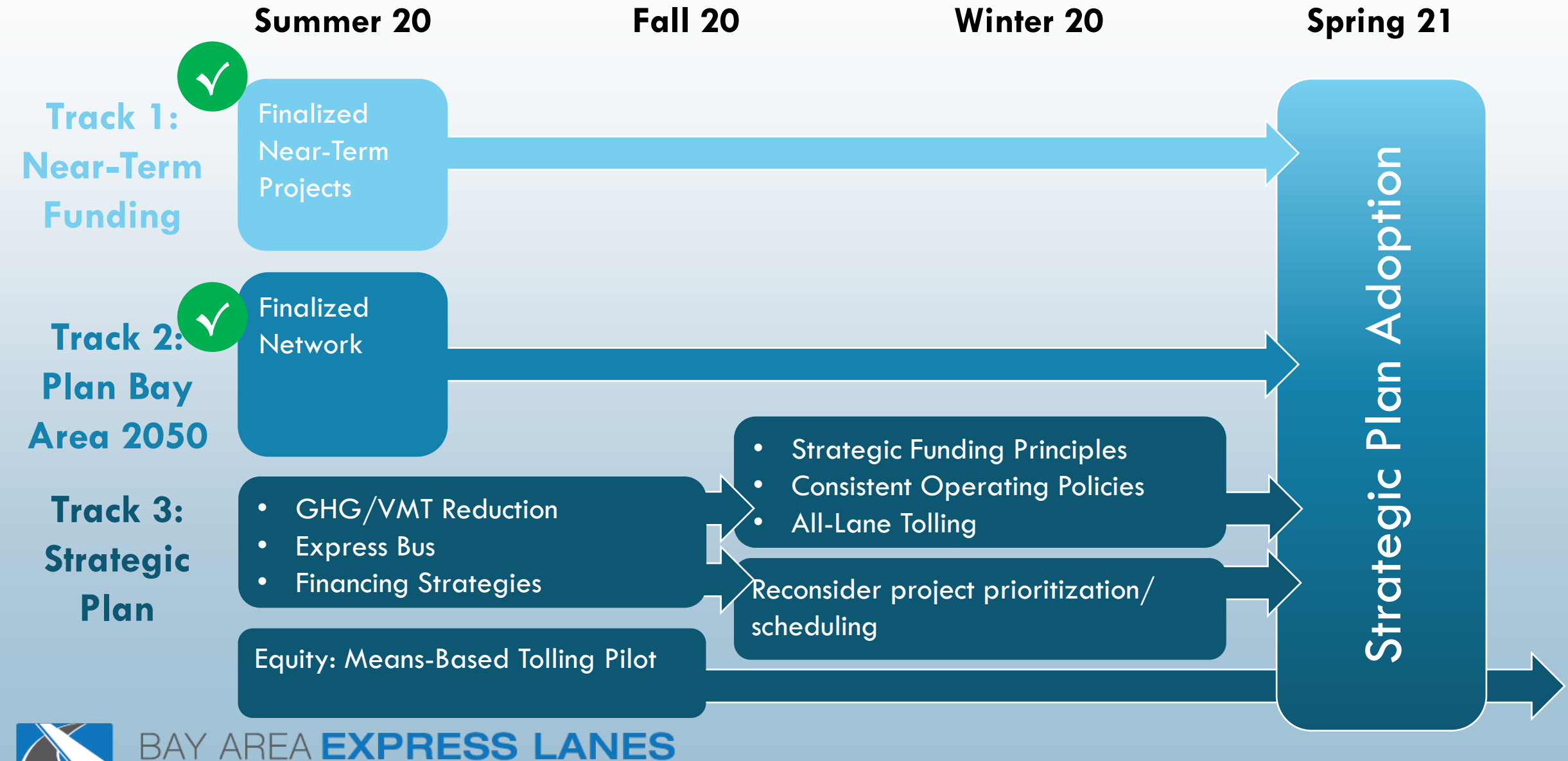
Track 3: Strategic Plan

White Papers

Equity: Means-Based Tolling Pilot

Background:

Simultaneous Efforts, in Concert with Partners



Greenhouse Gas/Vehicle Miles Traveled Paper

Question

How do we ensure project flexibility to fill in network gaps while meeting greenhouse gas reduction goals?

Goal

- Identify approaches that reduce greenhouse gas/vehicle miles traveled
- Recommend steps MTC and partner agencies can take to reduce greenhouse gas/vehicle miles traveled while completing the network

Organization

- HOV/General Purpose Lane Conversion
- New Lane Construction

5

- 5



Tradeoffs Between Project Types

		Benefits	Challenges
Lane Conversion	New Lane Construction	<ul style="list-style-type: none">• Smaller increase to vehicle miles traveled• Uses existing capacity• Incentivizes HOV/transit• Faster and cheaper construction	<ul style="list-style-type: none">• Legislative ambiguity• Not feasible for every project• Success could depend on driver adoption of congestion mitigation strategies (transit, carpool and other transportation demand management)
		<ul style="list-style-type: none">• Short-term congestion relief• May be needed to close gaps• Dual lanes may improve operations for cars and transit	<ul style="list-style-type: none">• Vehicle miles traveled impact analysis and mitigation (SB 743)• Long-term increases to congestion, greenhouse gas, and vehicle miles traveled



GHG/VMT Reduction Recommendations

1. Participate with Partners in Regional Mitigation Solutions

SB 743 has just gone into effect. In the near-term, closely track results of vehicle miles traveled impact analysis for upcoming projects, participate in mitigation strategies, and add to the vehicle miles traveled toolbox.

Contra Costa

Innovate 680

- Offsets capacity increase with bus efficiency, transportation demand management, etc.
- Vehicle Miles Traveled Mitigation Tool

CalTrans Sustainable Communities – Technical Grant: Development of Vehicle Miles Traveled Mitigation Program

Alameda

Adapting SANDAG Vehicle Miles Traveled Reduction Calculator

VTA & CCAG

Vehicle Miles Traveled Mitigation Tool

Regional Advance Mitigation Planning Program pilot (MTC + SCC)

Regional Conservation Investment Strategies (MTC)

- East Bay
- Santa Clara

SCAG

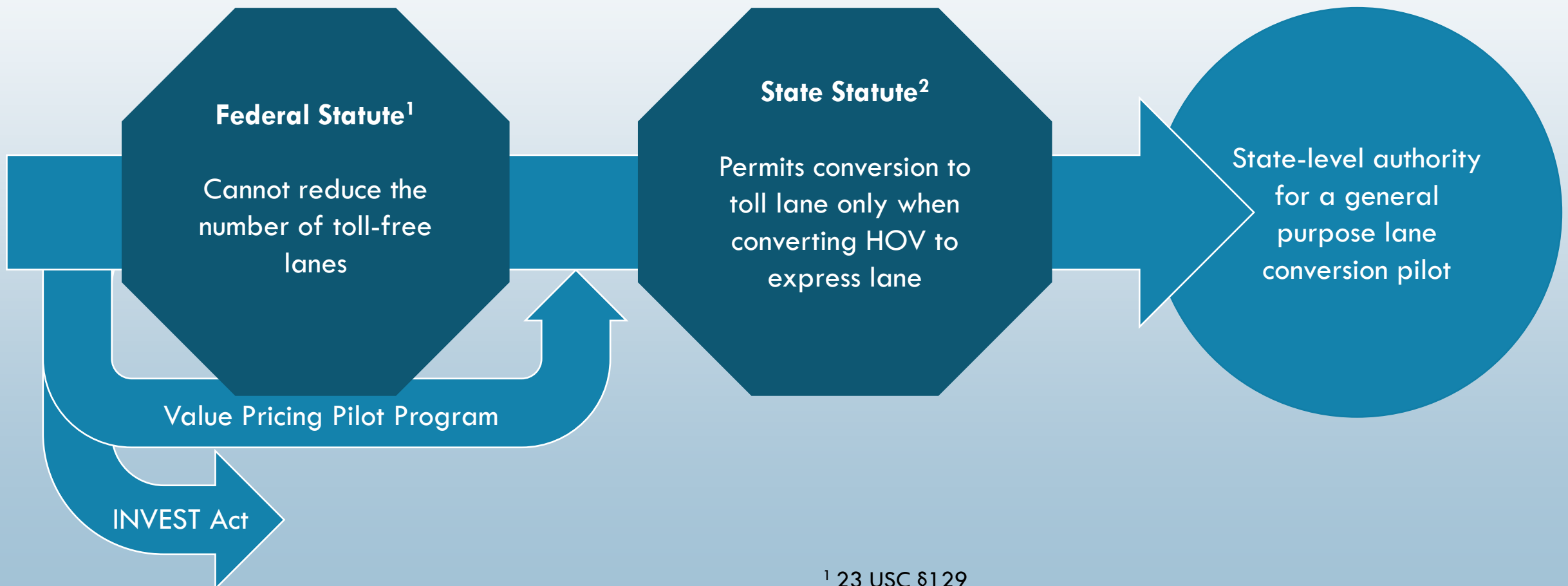
Caltrans

SB 743 Guidelines



GHG/VMT Reduction Recommendations

2. Advocate for legislation: MTC should advocate for clear opportunities to test or implement general purpose lane conversion



¹ 23 USC §129

² Streets & Highway Code §143(q), §149.7(m); Government Code §64112(b)

GHG/VMT Reduction Recommendations

3. Consider encouraging lane conversion projects through funding principles:

- Environmental impact analysis will likely have varied results for general purpose lane conversions. To avoid analysis becoming a checkmark toward new lane construction, MTC may want to further encourage general purpose lane conversion through funding principles
- Recommendations on Funding Principles under development

