

EXPLORING THE PAST, PRESENT, AND FUTURE OF HIGHWAYS

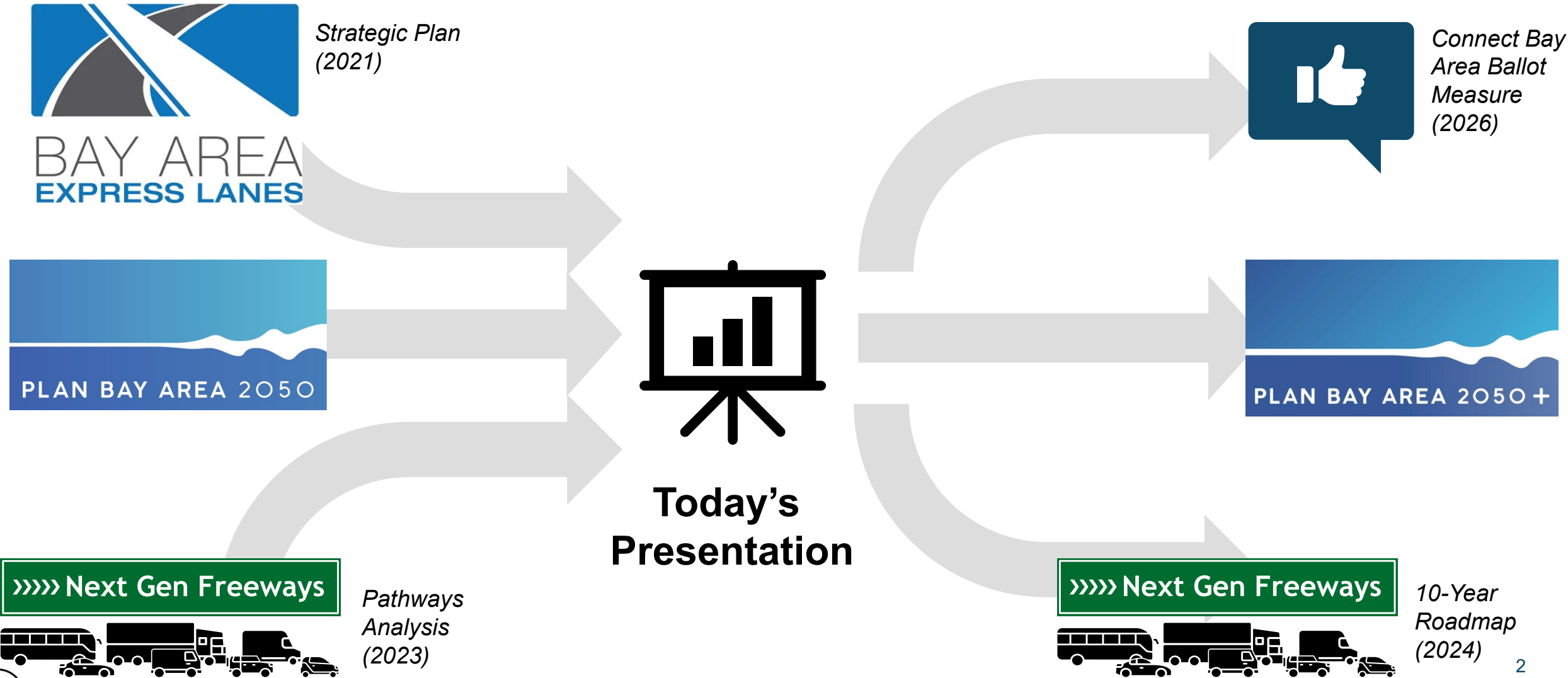
Planning Committee
April 12, 2024



METROPOLITAN
TRANSPORTATION
COMMISSION



Key decisions about how to improve our region's heavily-utilized highway network span across multiple initiatives.



While highways enhanced regional mobility, their construction and expansion contributed to social inequities, dividing communities.

Pre-World War II



Case Study: West Oakland
Post-World War II



21st Century

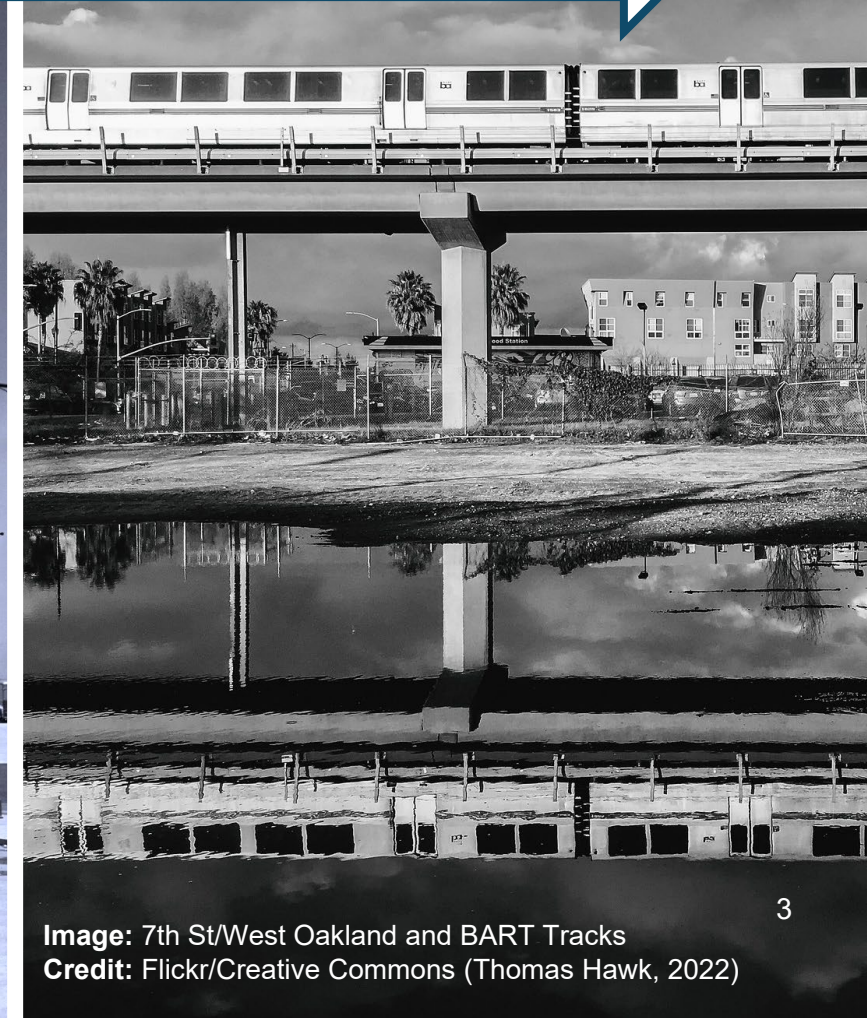
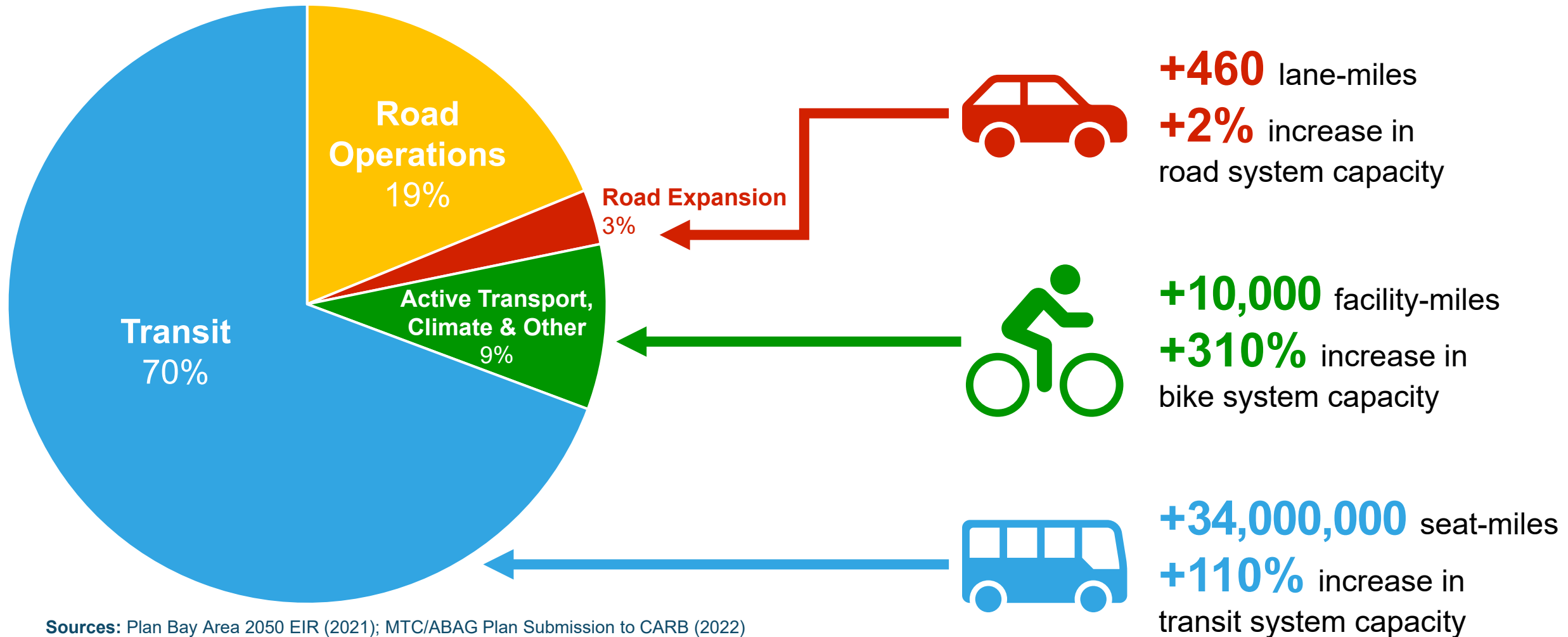


Image: 7th St/West Oakland
Credit: OaklandWiki

Image: I-880/West Oakland
Credit: Caltrans

Image: 7th St/West Oakland and BART Tracks
Credit: Flickr/Creative Commons (Thomas Hawk, 2022)

Compared to decades past, road expansion projects represent a small share of forecasted transportation spending through 2050.



Sources: Plan Bay Area 2050 EIR (2021); MTC/ABAG Plan Submission to CARB (2022)

Note: reflects Transportation Element, plus Environment Element strategies funded with transportation monies

Public agencies across the Bay Area have been seeking to balance longstanding voter commitments with emerging priorities.



Pavement & Bridge Rehabilitation



Traffic Safety



Express Lanes



Interchange Modernizations



Goods Movement



Climate Resilience



Looking into the decades ahead, MTC and Caltrans have been exploring how expanded pricing can accelerate progress.

Inclusion of equitable pricing strategies in Plan Bay Area 2050, such as all-lane tolling, was critical in meeting regional climate targets set by the State – and it preserved our region’s eligibility for key Senate Bill 1 funding programs.

Late 2022: Round 1 Engagement

Next Gen Freeways



Mid-2023: Round 1 Analysis

Late 2023: Round 2 Engagement

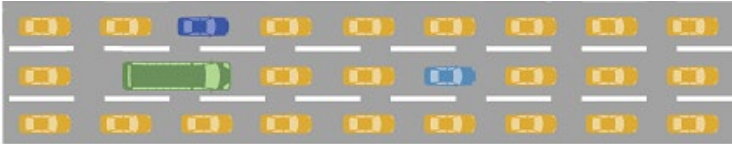
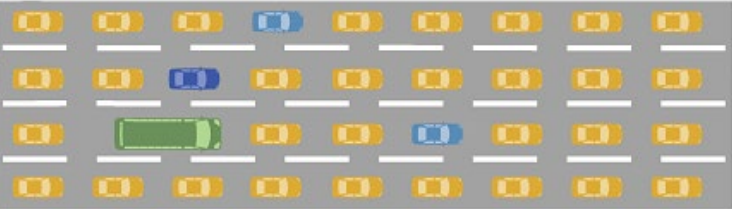


Early 2024: Round 2 Analysis

Late 2024: Implementation Roadmap

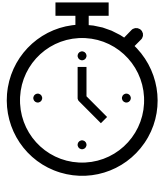


Image: Orange County All-Lane Tolling
Credit: The Toll Roads

How do different types of highway improvements compare in terms of key planning concepts?

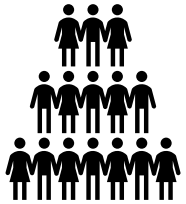
Project Type	Definition	Initial Capital Cost		
General Lane: New Capacity	Building an additional highway lane for all travelers with no price applied to it.	\$ \$ \$		25 mph 25 mph 25 mph
Express Lane: New Capacity	Building an additional highway lane available to carpools and transit for free, as well as toll-paying single-occupant vehicles.	\$ \$ \$ \$		30 mph 30 mph 30 mph 30 mph
Express Lane: Conversion	Pricing an existing highway lane, while making it available to carpools and transit for free.	\$		45 mph 25 mph 25 mph
All-Lane Tolling	Pricing all existing highway lanes, while retaining one lane for transit with discounts for carpools.	\$		50 mph 50 mph 50 mph

How do different types of highway improvements compare in terms of key planning concepts?



Reliability

Does the project provide reliable travel times when travelers need it most?



Mobility

Does the project maximize the number of people who can get to their destination?



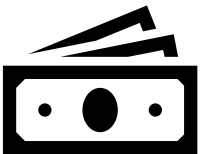
Climate

Does the project align with state climate goals that require reductions in miles driven?



Transit

Does the project integrate transit services that can grow ridership and advance equity?



Affordability

Does the project ensure that all travelers can get where they need to go affordably?



Pricing one or more highway lanes can provide a reliable option for travelers.

Widening highways to add general-purpose lanes may improve travel time and reliability in the short term, but experience in our region has shown that over time, congestion (and unreliability) inevitably return.

Express lanes have largely succeeded at providing reliable travel times to travelers when they need it most, but all-lane tolling presents opportunities to expand that benefit to all users.

14 out of 16

express lane toll zones were fully reliable (>45 mph)

10%

reduction in highway travel times under all-lane tolling

Source: BAIFA Express Lanes, 2023

Source: MTC/NextGen Freeways Round 1, 2023

Project Type	Reliability Impacts
General Lane: New Capacity	<i>Negligible</i>
Express Lane: New Capacity	++
Express Lane: Conversion	++
All-Lane Tolling	+++



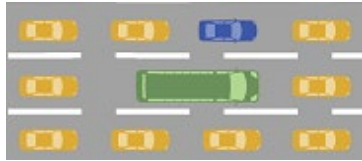


Paired with robust enforcement, pricing can encourage mode shift, increasing **mobility** (person-throughput).

Source: MTC Conceptual Analysis, 2024; assumes occupancy of 1.1, 1.3, 1.4, and 1.5 for four respective project types shown on right

~4,000

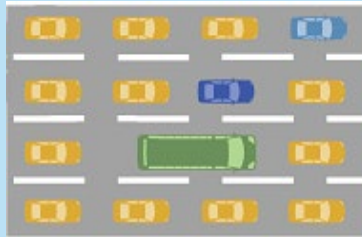
person-throughput per hour



Existing Conceptual Corridor

~6,000

person-throughput per hour



General Lane: New Capacity

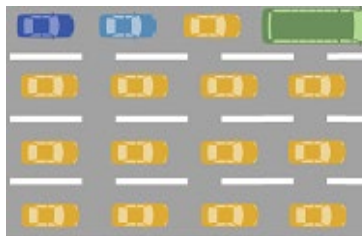
=



Express Lane: Conversion

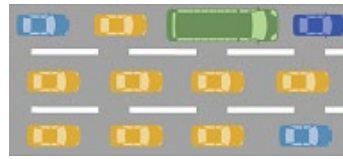
~8,000

person-throughput per hour



Express Lane: New Capacity

=



All-Lane Tolling

Project Type	Mobility Impacts
General Lane: New Capacity	+
Express Lane: New Capacity	++
Express Lane: Conversion	+
All-Lane Tolling	++



Roadway capacity expansions can increase vehicle miles traveled, negating climate benefits of major transit projects.



Rail Megaprojects:

-1.2 million daily VMT

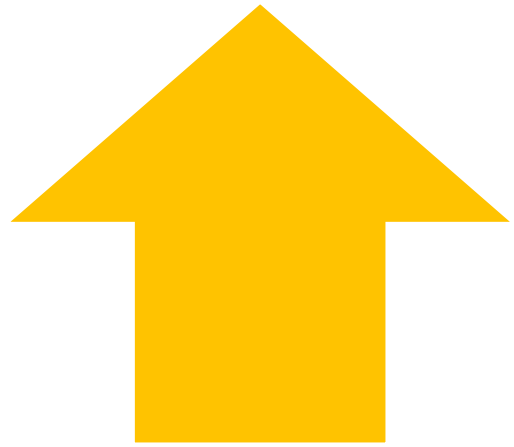
- BART Core Capacity
- BART to Silicon Valley Phase 2
- Caltrain Portal
- Valley Link
- Dumbarton Rail



Express Lanes:

+1.2 million daily VMT

- Bay Area Express Lanes Network (*full buildout across all operators; mix of new lanes & conversions*)



Project Type	<u>Climate Impacts</u>
General Lane: New Capacity	■ ■ ■
Express Lane: New Capacity	■ ■
Express Lane: Conversion	■
All-Lane Tolling	+ + +

Source: Plan Bay Area 2050 Project Performance, 2020; RTFF Future

Note: VMT increase from Express Lanes is likely underestimated due to induced land use; VMT reduction from rail projects are likely overestimated due to post-pandemic effects








Adding more highway transit service may only partially mitigate the environmental impacts of new capacity.






Los Angeles: J Line (Silver)
~14,000 weekday riders (2023)

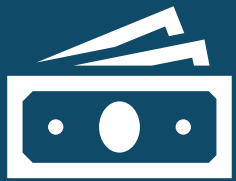
-  **Connectivity** with the region's densest urban center
-  **Direct access ramps** to enable easy access to express lanes
-  **Minimal direct competition** from parallel rail services



Bay Area: Express Lane Corridors
Limited express bus utilization

-  **Limited connectivity** to the region's densest urban centers
-  **No direct access ramps** to enable easy access to express lanes
-  **Direct competition** (in many corridors) from parallel rail services, including BART and Caltrain

Project Type	Transit Impacts
General Lane: New Capacity	— —
Express Lane: New Capacity	—
Express Lane: Conversion	+
All-Lane Tolling	++



Without meaningful equity strategies, affordability concerns remain a real roadblock.

The Bay Area faces many challenges today – but issues of crime, homelessness, and affordability have eclipsed pre-pandemic frustrations with traffic congestion.

Using pricing to manage congestion does not address residents' top issues and arguably risks being perceived as a burden, rather than a benefit, by the public.

28%

of Bay Area residents identified affordable housing or cost of living as top issue

6%

of very-low income households would pay >\$300 per year in all-lane tolls


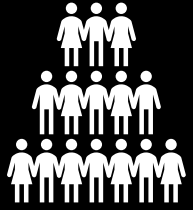


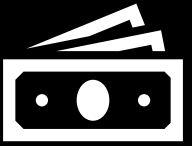
Source: 2026 Transportation Rev. Measure Poll, 2023

Source: MTC/NextGen Freeways Round 1, 2023

Project Type	Affordability Impacts
General Lane: New Capacity	<i>Negligible</i>
Express Lane: New Capacity	■
Express Lane: Conversion	■
All-Lane Tolling	■ ■



All highway project types involve tradeoffs and prioritization between key policy goals.

Project Type	Initial Capital Cost	 Reliability	 Mobility	 Climate	 Transit	 Affordability
General Lane: New Capacity	\$ \$ \$	<i>Negligible</i>	+	- - -	- -	<i>Negligible</i>
Express Lane: New Capacity	\$ \$ \$ \$	+ +	+ +	- -	-	-
Express Lane: Conversion	\$	+ +	+	-	+	-
All-Lane Tolling	\$	+ + +	+ +	+ + +	+ +	- -

Note that equity intersects with all of these policy lenses; upcoming analyses for the Next Generation Freeways Study and Plan Bay Area 2050+ will further quantify impacts for equity priority populations, including lower-income households.

What are some key observations that can inform policy decisions in the the year ahead?

1

The State is pushing regions to grapple with highway investment tradeoffs – simply mitigating adverse impacts isn't so simple given financial constraints.

2

Investing in transit along highway corridors does not guarantee mode shift, but expanded pricing options present more opportunities for reinvestment.

3

Optimizing our existing infrastructure – rather than building new capacity – can advance near-term goals and remain relevant in a future with expanded pricing.

4

Reduced transportation revenue forecasts in Plan Bay Area 2050+ will require more challenging tradeoffs than past cycles, including for highway projects.

Notable Upcoming Analyses to Inform Policy Dialogue:

- **Spring 2024:** Plan Bay Area 2050+/Transit 2050+ Project Performance Findings
- **Summer 2024:** Next Generation Freeways Study Round 2 Findings