

»»»» Next Gen Freeways



PLAN BAY AREA 2050



STRATEGY T5  
FREEWAY TOLLING



METROPOLITAN  
TRANSPORTATION  
COMMISSION

In partnership with  Caltrans

# Next Generation Bay Area Freeways Study

*Round 2 Analysis Findings*

Policy Advisory Council  
November 2024



# Context on Road Pricing

Road pricing was essential in achieving Plan Bay Area 2050's climate mandate.



Various state plans call for congestion pricing as a transportation demand management strategy.



Next Generation Freeways Study serves as an early-stage planning study.



## Study Objective

Collaboratively develop **equitable** and **politically acceptable** pathways toward a priced, modern and multimodal next-generation freeway network.

# Study Process



## Study Kickoff

Spring 2022



## Round 1 Engagement

Fall 2022



## Round 1 Analysis

Winter/Spring 2023



## Exploration of Operational Deployment 2023



## Round 2 Engagement

Fall 2023



## Round 2 Analysis

Spring/Summer 2024



## Summary Report

Spring 2025

*Today's Focus*

## Collaboration with Stakeholders

The team has collaborated extensively with a staff-level and an executive-level advisory groups, composed of members from Caltrans, county agencies, non-profit, business, labor, youth, academia and the Policy Advisory Council.

## Next Generation Freeways Goals

Overarching Goal:  
Advance outcomes that support equity priority populations.



Reliable



Efficient



Affordable



Reparative



Safe

**Past presentations to Policy Advisory Council**

# Round 2 Engagement

## What Challenges Did We Seek Input On?



### Enhancing Affordability

- Cost structures should be simple and predictable for lower income drivers
- Lower income drivers should receive discounts, but everyone should pay something
- Strong support for monthly toll caps, over exemptions, discounts and advance credits



### Limiting Diversion

- Investments in safety infrastructure and enforcement on local streets are critical



### Increasing Mode Shift

- First/last mile connections are important
- Transit will never be convenient for many for various reasons; focus investments to achieve greatest return on investment, mainly local transit in more urban areas
- Carpool incentives should be easily attainable, with preference for discount at 2+ threshold

# What did Round 2 analysis focus on?

## Pathway 1: Highway All-Lane Tolling



**Where?** Per-mile tolling on all highways in the region

**When?** Peak hours on weekdays only

**How?** License plate recognition with video cameras at all entrance/exit ramps

### Carpooling incentives

- 50% HOV2+ discounts
- Maintain first lane as HOV-only lane

## Pathway 2: Regional Mileage-Based User Fee

Multiple options to report miles, ranging from third-party odometer readers to GPS technology

020620



**Where?** Per-mile fee on all Bay Area roads

**When?** All hours, everyday

**How?** Leans on state's implementation of Road Charge, which is intended to replace the gas tax

### Carpooling incentives

Maintain existing Express/HOV lanes

### For both pathways:

### Cost burden mitigation

Monthly caps on toll expenditure

- Households <200% FPL: \$30
- Households 200-300% FPL: \$60

*FPL: Federal Poverty Level ~\$30K for family of four*

### Net revenues re-invested back into transportation



50% Transit







35% Local Road



15% Community-Scale Reparative Investments

# Translating Pricing into Real-Life Stories

Pathway	ALEXA	BELLA	CARLOS	DEVON
	<ul style="list-style-type: none"> <li>Lives in <b>Concord</b> and commutes to <b>Downtown Oakland</b></li> <li>Travels via <b>highways</b> [<b>~20 miles each way</b>] at <b>peak periods 3x a week</b></li> <li><b>Drives 16K miles/year</b></li> </ul> 	<ul style="list-style-type: none"> <li>Lives in <b>San Jose</b> and primarily works from home, with medical appointments at <b>Stanford</b> 3x a week</li> <li>Travels via <b>highways</b> [<b>~20 miles each way</b>] at <b>midday</b></li> <li><b>Drives 8K miles/year</b></li> </ul> 	<ul style="list-style-type: none"> <li>Lives in <b>West Oakland</b> and works in <b>Emeryville Bay Street Mall</b></li> <li>Travels via <b>local roads</b> at <b>peak periods</b> [<b>~3 miles each way</b>]</li> <li><b>Drives 12K miles/year</b></li> </ul> 	<ul style="list-style-type: none"> <li>Drives for small jobs from <b>Tracy</b> to all over Bay Area</li> <li>Travels via <b>highways</b> [<b>~60 miles</b>] spanning <b>all periods of the day everyday</b></li> <li><b>Drives 40K miles/year</b></li> </ul> 
<b>Pathway 1</b> Highway All-Lane Tolling	18% reduction in travel time +\$150 in monthly costs <i>(or switch to using BART)</i>	No change in travel time ~\$0 monthly costs	3% increase in travel time ~\$0 monthly costs	8% reduction in travel time +\$200 in monthly costs
<b>Pathway 2</b> Regional Mileage-Based Fee	3% reduction in travel time +\$70 in monthly costs	No change in travel time +\$35 in monthly costs	No change in travel time +\$50 in monthly costs	1% reduction in travel time +\$170 in monthly costs

*Note: Assumes all of these individuals are ineligible for monthly caps on tolls*

# Key Affordability Outcomes

## Pathway 1: Highway All-Lane Tolling

More drivers pay less, as over 50% of households do not drive on highways during peak hours on a regular basis.

Only the most frequent highway users pay more, although this is limited by toll caps for low-income households.

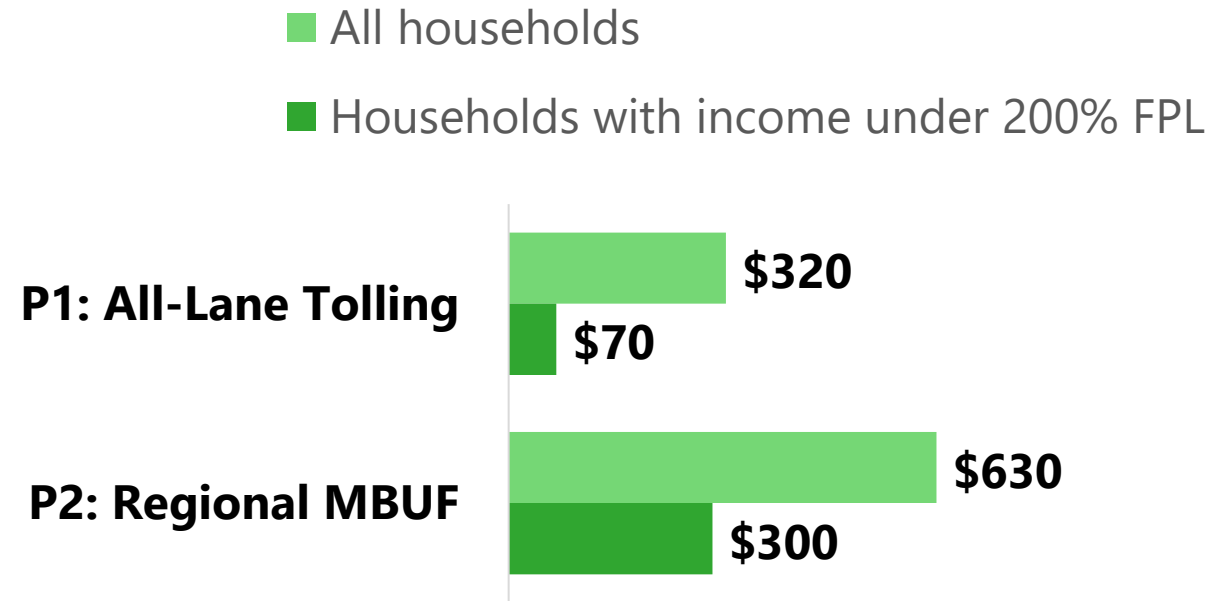
## Pathway 2: Regional Mileage-Based User Fee

All drivers pay an amount that is closely correlated with how much they drive in general.

Costs to drivers are ~2x higher across all households and ~4x higher for households with low incomes.

The flipside: generates significantly higher revenues (~4x net revenues) that can enable more robust investments in transit, complete streets and other local priorities.

## Average Annual Household Toll Costs (2023\$) for Auto-Oriented Households<sup>1</sup>



*1: Auto-oriented households refers to households that are not transit-dependent and primarily rely on driving.*



# Key Transportation Outcomes

## Pathway 1: Highway All-Lane Tolling

Reduces highway traffic and drives more mode shift away from single-occupancy auto.

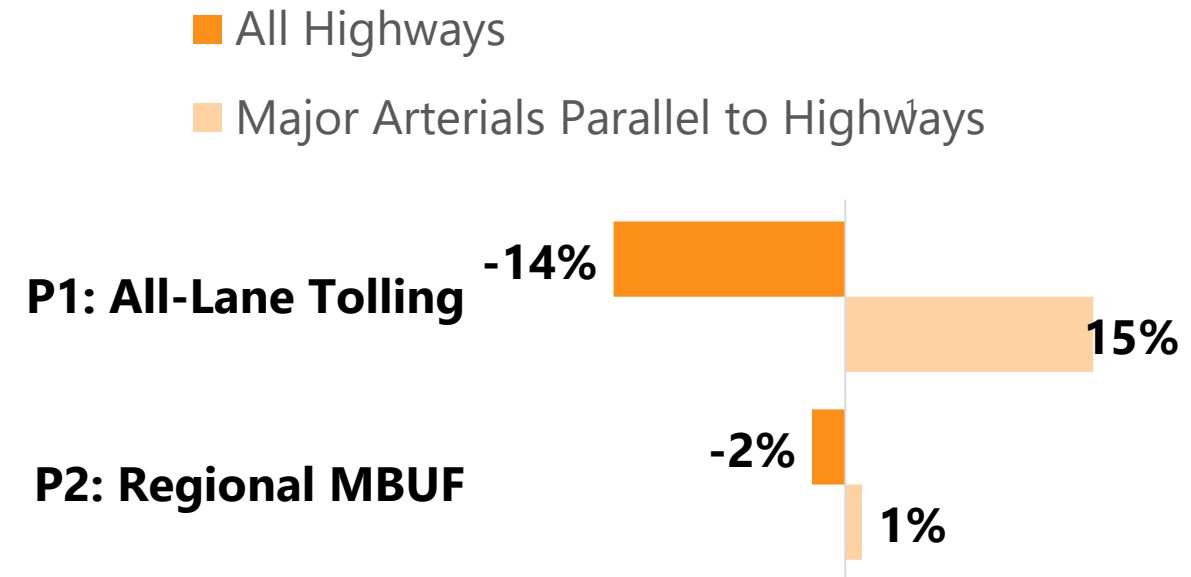
Has an unintended consequence of diversion to major parallel arterials that must be managed and needs to be a key focus of future efforts.

## Pathway 2: Regional Mileage-Based User Fee

Does not meaningfully reduce congestion or improve travel times, as prices are not sufficiently high on any given facility to incentivize a significant behavior shift.

However, significant revenues are generated that can be reinvested into transit to drive ridership growth.

## Change in Peak Period Travel Times (relative to Baseline)



*1: Refers to a subset of major local roads that run parallel to highways*



# Key Environmental Outcomes

## Pathway 1: Highway All-Lane Tolling

Advances VMT/GHG reduction goals, with a better performance on overall VMT reduction.

## Pathway 2: Regional Mileage-Based User Fee

Advances VMT/GHG reduction goals.

### GHG/VMT Reduction relative to Baseline (year 2035)

#### Greenhouse Gas Emissions

P1: All-Lane Tolling

-2%



P2: Regional MBUF

-2%



#### Vehicle Miles Traveled (VMT)

P1: All-Lane Tolling

-4%



P2: Regional MBUF

-2%



# Key Equity Considerations

	P1: Highway All-Lane Tolling	P2: Regional Mileage-Based User Fee
Are there affordable travel options for those with limited means?	<p><b>++</b></p> <ul style="list-style-type: none"> <li>• Travel during off-peak hours remains “free”</li> <li>• Local roads remain “free”</li> <li>• Highways have more transit alternatives</li> </ul>	<p><b>+</b></p> <ul style="list-style-type: none"> <li>• Costs are relatively higher</li> <li>• Fewer transit alternatives as there is a fee for travel on all roads</li> </ul>
Are travel time savings worth the incremental costs for low-income drivers?	<p><b>+</b></p> <ul style="list-style-type: none"> <li>• Toll caps equalize cost-effectiveness of tolls for low-income highway users with that for high-income drivers</li> </ul>	<p><b>-</b></p> <ul style="list-style-type: none"> <li>• More likely perceived as a burden rather than cost-effective without a tangible direct benefit of time savings</li> </ul>
Are local streets in Equity Priority Communities disproportionately burdened?	<p><b>+</b></p> <ul style="list-style-type: none"> <li>• No disproportionate burden in Equity Priority Communities</li> </ul>	<p><b>+++</b></p> <ul style="list-style-type: none"> <li>• No unintended consequence of diversion to local streets</li> </ul>
Are incremental costs regressive to those with limited means?	<p><b>++</b></p> <ul style="list-style-type: none"> <li>• Not regressive at an overall level as benefits exceed costs (ratio is 4.0)</li> <li>• Relatively lower share of revenues is paid for by lower income households</li> </ul>	<p><b>+</b></p> <ul style="list-style-type: none"> <li>• Not regressive at an overall level as benefits exceed costs (ratio is 2.8)</li> <li>• Drivers in areas with low transit access may perceive this fee as more regressive</li> </ul>

# How do we move forward?

- Road pricing continues to be an essential component in meeting the state-mandated GHG reduction target of Plan Bay Area 2050+, which currently faces a three-point gap
- We have a more robust understanding of opportunities and challenges of pricing strategies than we did four years ago
- This early-stage study has identified effective (and less effective) strategies to make progress on some challenges, but others are not sufficiently resolved – primarily diversion with all-lane tolling, and affordability with the regional mileage-based fee

## **Staff Recommendation:**

### **Plan Bay Area 2050+**

- Maintain highway all-lane tolling as a strategy in the plan, updated with latest strategy specifics to better balance tradeoffs between mobility, environmental, and equity outcomes
- Identify actions in the implementation plan for second-stage studies with a primary focus on these challenges, such as corridor-specific studies

### **Plan Bay Area 2060**

- Reconfirm that the strategy meets the moment given potential changes in policy, funding, and mobility landscape (e.g., SB 375 framework, transportation revenue measure, work-from-home dynamics, traffic congestion) and shift direction if warranted

## »»»» Next Gen Freeways



## Next Steps:

Finalize Study Findings

Late Fall 2024

Craft 10-Year Implementation Roadmap

Winter 2025

Develop Summary Report

Spring 2025

Thank You.

## Questions?

Anup Tapase

Next Generation  
Freeways Study  
Project Manager

Email:

[atapase@bayareametro.gov](mailto:atapase@bayareametro.gov)