

# Next Generation Bay Area Freeways Study

## Road Pricing Pathways: Round 2 Analysis Findings

The Next Generation Bay Area Freeways Study is an early-stage planning study exploring the potential of road pricing strategies in shaping the future of freeways. By incentivizing more efficient, healthy and sustainable ways of getting around, pricing strategies have the potential to shift current driving patterns, reduce congestion and advance state-mandated climate goals while generating revenues for system improvements. Pricing strategies in isolation would present significant affordability and equity challenges. This study is exploring pricing strategies, in conjunction with a meaningful suite of complementary strategies that can manage affordability and promote equity, to identify equitable and politically acceptable pathways forward.



### What are the study's goals for Next Generation Freeways?

The future freeway network and the broader transportation system should be reliable, efficient, affordable, reparative and safe, advancing outcomes that support Equity Priority Communities. These five goals were developed through community and stakeholder input during the first year of the study in 2022.

### What pathways are being studied?

The study is exploring a portfolio of six pathways in the second round of analysis. Three of the pathways integrate new pricing strategies: highway all-lane tolling, a regional mileage-based user fee and a combination of the two. The remaining three pathways expand on existing Bay Area express lanes, an approach which was incorporated into the study's second round of analysis in early 2024. These pathways were developed based on learnings from the first round of analysis (which also explored additional pricing strategies that have since been eliminated), as well as community and stakeholder engagement.

### What is a "pathway"?

Pathways are combinations of a road pricing strategy and complementary strategies that are designed to advance the Next Generation Freeways goals. Complementary strategies would be funded by net revenues from the pricing strategy.

	Pricing Strategy	Complementary Strategies Relative \$ Amount of Tolling Revenues <sup>1</sup> (net tolling revenues to enable complementary strategies)		
Pathway 1	Highway All-Lane Tolling	50%	35%	15%
Pathway 2	Regionwide Mileage-Based User Fee	50%	35%	15%
Pathway 3	Highway All-Lane Tolling + Mileage-Based User Fee	50%	35%	15%
Pathway 4	Express Lanes: PBA2050 Network Scope			
Pathway 5	Express Lanes: Conversion only			
Pathway 6	Dual Express Lanes			

<sup>1</sup> This diagram was developed prior to the analysis; relative revenue extents are symbolic and not to scale with revenues estimated in the analysis.



## How was the analysis conducted?

The impacts of the six pricing pathways were forecasted using MTC's Travel Model 1.6, an activity-based regional travel model that simulates activities of all Bay Area residents on a typical weekday, applying external force assumptions and land use projections for 2035. High-level outcomes summarized in this document were determined relative to a "No New Pricing" baseline, which includes express lanes currently under operation or construction, a statewide road charge that replaces and is revenue-neutral with the gas tax, and major transportation projects and policies anticipated for completion and implementation by 2035.

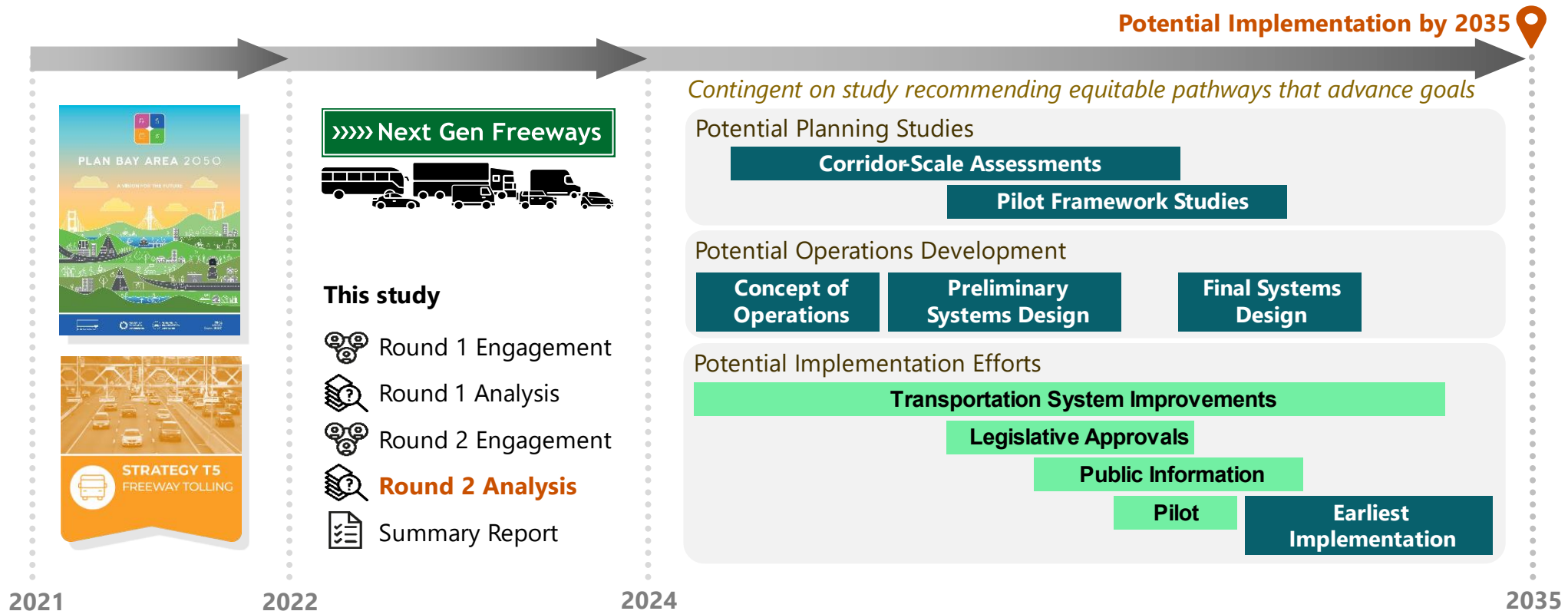


## Who did MTC staff engage in this process?

MTC staff conducting the study are advised by staff-level and executive-level advisory groups composed of representatives from Caltrans, county transportation agencies, non-profits, business and labor groups, and MTC's Policy Advisory Council. Staff have also conducted two rounds of community and stakeholder engagement that included small group discussions with residents of varying income levels and occupations, public webinars, stakeholder workshops and one-on-one briefings.














## What are the next steps?

Analysis findings will be considered by the advisory groups and policymakers to recommend pricing strategies for inclusion in the [Plan Bay Area 2050+ Final Blueprint](#), as well as to advance future efforts. Future efforts upon completion of this study may include more comprehensive studies at the regional and corridor scale, pilots, operations design studies, legislative actions and other steps toward implementation of recommendations. Staff will collaborate with stakeholders during the final phase of the study to chart out a high-level 10-year implementation roadmap.








## What pathways are being evaluated in Round 2 Analysis?

The study is evaluating the potential of three pathways with new road pricing strategies for advancing the Next Generation Freeways goals.

<b>Pathway 1</b> Highway All-Lane Tolling		 <b>Where?</b>  <b>All major highways</b> Vehicles tolled at on/off ramps and at regional entry points; Lane 1 reserved for HOV2+ or HOV3+ based on demand	 <b>When?</b>  <b>Weekday rush hours</b> 6-10 a.m., 3-7 p.m. No tolls during mid-day and night; No tolls on weekends	 <b>How Much?</b>  <b>Preliminary rates</b> Minimum toll: 50¢ <b>Congested highways:</b> 30¢ per mile <b>Other highways:</b> 10¢ per mile HOV2+ discount: 50%
<b>Pathway 2</b> Regionwide Mileage-Based User Fee		 <b>Where?</b>  <b>All roads</b> Fee based on miles driven on all Bay Area roads; Existing express lanes remain	 <b>When?</b>  <b>All hours</b>	 <b>How Much?</b>  <b>Preliminary rates</b> 5¢ per-mile fee
<b>Pathway 3</b> Regionwide Mileage-Based User Fee + Highway All-Lane Tolling		 <b>Where?</b>  <div> <b>All-Lane Highway Tolling</b> <b>Congested highways</b> </div> <hr/> <div> <b>Mileage-Based User Fee</b> <b>All roads</b> </div>	 <b>When?</b>  <div> <b>Weekday rush hours</b> </div> <hr/> <div> <b>All hours</b> </div>	 <b>How Much?</b>  <b>Preliminary rates</b> 30¢ per mile HOV 2+: 50% discount
 <b>Toll Affordability</b> <div> <b>Income &lt;200% FPL:</b> Monthly toll costs to not exceed \$30           <b>Income 200-300% FPL:</b> Monthly toll costs to not exceed \$60         </div>				

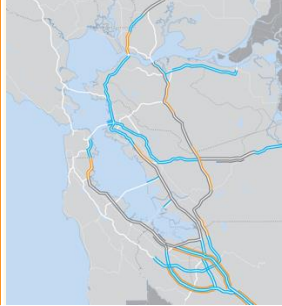
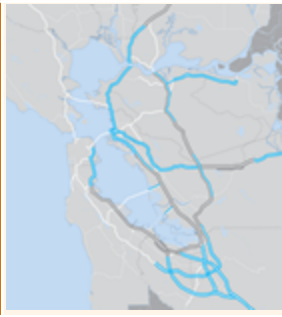
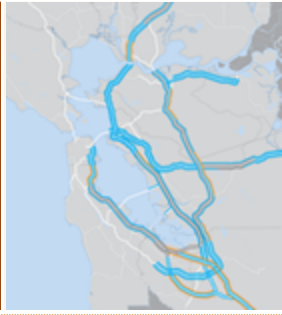
## Complementary Strategies

All net revenues would be reinvested into the transportation system, prioritizing Equity Priority Communities.

50% Transit	35% Local Roads	15% Reparative Infrastructure
 <b>Frequency Boosts</b> <ul style="list-style-type: none"> <li>Major bus routes</li> <li>Feeder bus routes to rail/ferry</li> </ul>  <b>Improved First and Last Mile Connections</b> <ul style="list-style-type: none"> <li>Shuttle connections in Equity Priority Communities</li> </ul>	 <b>Road Safety</b> <ul style="list-style-type: none"> <li>Safety design improvements</li> <li>Bike lane/sidewalk improvements</li> <li>Enforcement of unsafe driving</li> </ul>  <b>Transit-Friendly Streets</b> <ul style="list-style-type: none"> <li>Transit priority infrastructure</li> <li>Reallocation of roadway space</li> </ul>	 <b>Focused in Low-Income Freeway-Adjacent Communities</b> <ul style="list-style-type: none"> <li>Road pavement improvement</li> <li>Pedestrian crossing improvements</li> <li>Urban greening</li> </ul>

## What pathways are being evaluated in Round 2 Analysis?

The study is also evaluating the relative performance of a regional express lane network. Pathway 4 is identical to the express lanes network included in Plan Bay Area 2050, while Pathway 5 and 6 are alternate versions.

<b>Pathway 4</b> <b>Regional Express Lane Network</b> w/lane conversions and widening		<b>? Where?</b> <b>Most major highways</b> Full network: 670 directional miles 773 lane-miles <i>Future lane-miles:</i> 514 Lane Conversion: 374 Widening: 140	<b>🕒 When?</b> <b>Weekdays 5 a.m. to 8 p.m.</b>	<b>💰 How Much?</b> <b>Dynamic toll rates to achieve 45 mph speeds</b> Minimum toll: 50¢ HOV 3+: Free HOV 2: 50% discount
<b>Pathway 5</b> <b>Regional Express Lane Network</b> w/lane conversions only		<b>? Where?</b> <b>Most major highways</b> Full network: 670 directional miles 668 lane-miles <i>Future lane-miles:</i> 428 Lane Conversion: 428 Widening: 0	<b>🕒 When?</b> <b>Weekdays 5 a.m. to 8 p.m.</b>	<b>💰 How Much?</b> <b>Dynamic toll rates to achieve 45 mph speeds</b> Minimum toll: 50¢ HOV 3+: Free HOV 2: 50% discount
<b>Pathway 6</b> <b>Regional Dual Express Lane Network</b> w/lane conversions and widening		<b>? Where?</b> <b>Most major highways</b> Full network: 670 directional miles 1282 lane-miles <i>Future lane-miles:</i> 1022 Lane Conversion: 882 Widening: 140	<b>🕒 When?</b> <b>Weekdays 5 a.m. to 8 p.m.</b>	<b>💰 How Much?</b> <b>Dynamic toll rates to achieve 45 mph speeds</b> Minimum toll: 50¢ HOV 3+: Free HOV 2: 50% discount
<b>🏷️ Toll Affordability</b> <b>Income &lt;200% FPL: 50% Discount</b>				

## Complementary Strategies

Net revenues, if any, would be reinvested back into transit, prioritizing Equity Priority Communities.

## What are the initial findings from Round 2 Analysis?

High-level outcomes in 2035 relative to the baseline "No New Pricing" scenario are shown below, along with sketch-level cost and net revenue estimates. *Note: Pathway 3 analysis is on hold given resource constraints.*

	Pathway 1 Highways All-Lane Tolling		Pathway 2 Regionwide Mileage-Based User Fee		Pathway 4 Regional Express Lane Network w/lane conversions and widening		Pathway 5 Regional Express Lane Network w/lane conversions only		Pathway 6 Regional Dual Express Lane Network w/lane conversions and widening	
Modeled Outcomes relative to 2035 Baseline <sup>1</sup>										
Vehicle Miles Travelled	Overall	-4%	Overall	-2%	Overall	+0.5%	Overall	+0.4%	Overall	+0.7%
	Highways	-16%	Highways	-3%	Highways	+0.8%	Highways	+0.5%	Highways	+0.6%
	Local Streets	+11%	Local Streets	-2%	Local Streets	+0.0%	Local Streets	+0.3%	Local Streets	+0.9%
	EPC Local Streets	+13%	EPC Local Streets	-2%	EPC Local Streets	+0.2%	EPC Local Streets	+0.5%	EPC Local Streets	+1.2%
GHG Emissions	SB375	-2%	SB375	-2%	SB375	+0.5%	SB375	+0.3%	SB375	+0.6%
	All Vehicles	-3%	All Vehicles	-2%	All Vehicles	+0.5%	All Vehicles	+0.3%	All Vehicles	+0.7%
Peak-Period Travel Times	Highways	-14%	Highways	-2%	Highways	-1%	Highways	+0.1%	Highway	+1%
	Goods Routes	-12%	Goods Routes	-2%	Goods Routes	-1%	Goods Routes	+0.4%	Goods Routes	+2%
	Major Arterials	+15%	Major Arterials	+1%	Major Arterials	-0.2%	Major Arterials	+0.0%	Major Arterials	0.0%
Commute Travel Mode Shift	SOV	↓ 1.1%	SOV	↓ 0.4%	SOV	↓ 0.3%	SOV	↓ 0.2%	SOV	↑ 0.2%
	HOV	↑ 0.8%	HOV	↓ 0.5%	HOV	↑ 0.4%	HOV	↑ 0.3%	HOV	↑ 0.1%
	Transit	↑ 0.3%	Transit	↑ 0.7%	Transit	↓ 0.2%	Transit	↓ 0.2%	Transit	↓ 0.2%
Annual Incremental Expenditure for Driving Households	All Households \$320		All Households \$630		n/a since driving on priced lanes is a choice					
	Households with Income <200%FPL	\$70	Households with Income <200%FPL	\$300						

(Continued...)



## What are the initial findings from Round 2 Analysis? (continued)

High-level outcomes in 2035 relative to the baseline “No New Pricing” scenario are shown below, along with sketch-level cost and net revenue estimates. *Note: Pathway 3 analysis is on hold given resource constraints.*

	Pathway 1 Highway All-Lane Tolling		Pathway 2 Regionwide Mileage-Based User Fee		Pathway 4 Regional Express Lane Network w/lane conversions and widening		Pathway 5 Regional Express Lane Network w/lane conversions only		Pathway 6 Regional Dual Express Lane Network w/lane conversions and widening	
Cost and Revenue Estimates (2023\$) <sup>2</sup>										
Capital Cost to Implement	\$2,300M		\$0M		\$3,800M		\$2,200M		\$5,400M	
Annual Costs	O&M	\$410M	O&M	\$500M	O&M	\$180M	O&M	\$160M	O&M	\$300M
	R&R	\$260M	R&R	\$0M	R&R	\$160M	R&R	\$140M	R&R	\$240M
Net Annual Revenues	\$550M		\$2,000M		\$0		\$0		\$0	

1. Outcomes are forecasted using MTC’s Travel Model 1.6, an activity-based regional travel model that simulates activities of all Bay Area residents on a typical weekday, using external factor and land use projections for year 2035.

GHG Emissions SB375: Greenhouse gas emissions from cars and light duty trucks excluding fuel efficiency gains, as per SB375 guidelines

GHG Emissions All Vehicles: Emissions from all vehicles, including fuel efficiency gains

Peak-Period: Time periods 6am-10am and 3pm-7pm; the four-hour extent of these periods is a modeling constraint.

EPC: [Equity Priority Communities](#)

SOV: Single-occupancy vehicles

HOV: High-occupancy vehicles with 2+ persons

FPL: [Federal Poverty Level](#)

2. Pathway 1 Highway All-Lane Tolling capital costs were estimated for pre-construction, infrastructure, toll system integration, signage, and data servers. Operations and Maintenance (O&M) costs were calculated based on number of tolled trips as well as other fixed costs, and estimated for system maintenance, trip building & manual image review, account management, payment processing (incl. inter-agency), HOV verification app fees, public information, performance management and enforcement. Rehabilitation and Replacement (R&R) costs are annualized and based on a 7-year lifecycle for tolling equipment and 30-year lifecycle for infrastructure components.

Pathway 2 Regional Mileage-Based User Fee costs assume no capital investment; O&M costs are based on an administrative cost assumption of 20% of revenues.

Pathway 4/5/6 Regional Express Lane Network capital and operating costs are based on estimates provided by project sponsors and per-mile cost averages of past express lane projects.

Revenue estimates are based on modeled outcomes for year 2035 and represent systemwide revenues. Net annual revenues subtract out O&M and R&R costs from the annual gross revenues.