Agenda

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Meeting: Transportation Policy Alternatives Committee (TPAC) Workshop on Regional Congestion Pricing Study
Date: Wednesday, July 22, 2020
Time: 9:00 a.m. – 11:30 a.m.
Place: Virtual meeting – Please click the link below to join the webinar:
https://us02web.zoom.us/j/81844168844
Password: 012773
Phone: 877-853-5257 (Toll Free)

9:00 am	**1.**	**Introductions**	**Tom Kloster, Chair**
9:15 am	**2.**	**Overview of Congestion Pricing and Case Studies**	**Jennifer Wieland, Nelson\Nygaard**
9:30 am	**3.**	**Equity and Congestion Pricing: A National Perspective**	**Chris Lepe, TransForm**
9:45 am	**4.**	**Equity and Congestion Pricing: The Local Context**	**Elizabeth Mros-O'Hara, Metro**
9:55 am	**5.**	***Discussion: What would it take for congestion pricing to advance equity? What kind of outcomes would it need to achieve? General discussion***	**Tom Kloster, Chair**
10:10 am		**Five Minute Break**	
10:15 am	**6.**	**Portland update on Pricing for Equitable Mobility**	**Emma Sagor & Shoshana Cohen, Portland**
10:20 am	**7.**	**ODOT update on I-205 and I-5 Tolling Projects**	**Lucinda Broussard, ODOT Mat Dolata, WSP Heather Wills, WSP**
10:25 am	**8.**	**Metro Regional Congestion Pricing Study** • Update on schedule and process • Performance measures • Pricing scenarios	**Matt Bihn & Elizabeth Mros-O'Hara, Metro**
10:50 am	**9.**	***Discussion: Questions? Where should the project team consider analyzing priced parking, cordons, corridors and/or tolls in the Portland Metro Region?***	**Elizabeth Mros-O'Hara, Metro**
11:25 am	**10.**	**Schedule and Next Steps**	**Elizabeth Mros-O'Hara, Metro**
11:30 am	**11.**	**Adjourn**	**Tom Kloster, Chair**

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Metro

Memo

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Date: July 22, 2020
To: Transportation Policy Alternatives Committee and Interested Parties
From: Elizabeth Mros-O'Hara, RCPS Project Manager
Subject: Regional Congestion Pricing Study – Workshop Summary

Purpose
The workshop is intended to provide TPAC an opportunity for a detailed discussion of the Regional Congestion Pricing Study (RCPS) including: best practices and equity considerations, evaluation tools and performance measures, and initial pricing scenarios being analyzed.

Request to TPAC
Provide input and comment on the congestion pricing analysis and scenarios being tested.

Scope of Work

The RCPS is evaluating the efficacy and performance of different pricing concepts through testing a series of modeling scenarios, research, technical papers, and feedback from experts in the field. The study is evaluating congestion pricing as a tool to accomplish the four primary transportation regional priorities identified in the 2018 Regional Transportation Plan (RTP): addressing climate, managing congestion, getting to Vision Zero (safety), and reducing disparities (equity).

This analysis will provide a foundational understanding of how congestion pricing tools could perform with our region's land use and transportation system. The intent is to inform policy makers and existing and future projects in our region.

Project Goal**:** *To understand how our region could use congestion pricing to manage traffic demand to meet climate goals without adversely impacting safety or equity.*

Performance Measures

Metro staff is using performance measures from the system evaluation of the 2018 RTP and those measures associated with the 2018 RTP priorities. Table 1 illustrates the crosswalk between the 2018 RTP priorities, outcomes being measured, and performance measures. The 2018 RTP performance measures serve as a starting point for potential performance measures for this study, and others may be considered and added based on advice and suggestion from outside expertise and if other tools and resources are available.

The performance measures in Table 1 below include outputs that can be derived from the regional transportation model, the Motor Vehicle Emissions Simulator (*MOVES)* model, and geographic information systems (GIS) analysis to demonstrate how well the different congestion pricing scenarios perform with regard to the four 2018 RTP priorities.

Table 1. Crosswalk between 2018 RTP Priorities and Regional Congestion Pricing Study Performance Measures

2018 RTP Priority	Outcome Being Measured	Performance Measure Proposed for Congestion Pricing Tools
Equity	Accessibility	• Access to jobs (emphasis on middle-wage) • Access to community places • System completeness of active transportation network
Safety[1]	Eliminate fatal and severe injury crashes for all modes of travel.	• Level of investment in improvements that address fatalities and serious injuries on high injury corridors
Climate Change	Reduce emissions from vehicle	• Percent reduction of greenhouse gases per capita • Percent reduction of criteria pollutants and transportation air toxics • Percent reduction of vehicle miles traveled per capita • Shift in travel behavior
Traffic Congestion	Multimodal travel times Mode split/shift Mode miles traveled (e.g. person miles traveled, vehicle miles traveled)	• Travel time between regional origin-destination pairs during mid-day and evening commute hour peak by mode of travel (e.g. transit, bicycle) • System-wide number of miles traveled (total and share of overall travel) by different modes of travel • Average weekday transit boardings for all transit service providers (e.g. TriMet, SMART, C-TRAN and Portland Streetcar, Inc.)

Evaluation of Different Pricing Concepts

The study is evaluating five different pricing concepts to understand how they would perform in our region with our land use and transportation system. Pricing concepts being assessed are:

- Cordon: vehicles pay to enter a defined boundary (usually a highly congested area)
- Area: vehicles pay to travel within a defined boundary
- Vehicle Miles Traveled/Road User Charge: a charge based on how many miles are traveled
- Roadway: a direct charge to use a specific roadway or specific roadways
- Parking: charges to park in specific areas

To understand how these different concepts could perform, staff is developing modeling scenarios for each concept to run through the regional travel demand model. Some of the pricing concepts will be evaluated multiple times by adjusting the scenarios tested for a single factor and/or for testing performance of certain mitigation strategies. These scenarios will be compared to each other and a Baseline Scenario based on the RTP 2027 Financially-Constrained network.

[1] Because crashes cannot be projected, this performance measure will take an observed approach looking at the level of safety investment and location of safety investment.

Preliminary Congestion Pricing Modeling Scenarios

Table 2 describes the preliminary pricing scenarios developed to test different pricing concepts. The scenario assumptions/components (such as geographies, time of day charged, and prices) will be adjusted to demonstrate how these different pricing concepts could perform. For example, staff may adjust the boundaries for a cordon or area scenario, the geographic areas subject to parking charges, or time of day for charges. Also, the roadways tolled could be adjusted to include key arterials or to remove some freeway segments. Amounts charged to drivers/parkers could also be adjusted to reveal impacts on performance.

Table 2: Preliminary Pricing Scenarios

	VMT (2 runs)	***Cordon***	***Area***	***Parking***	***Roadway (3 runs)***
Description	Toll applied to miles driven regardless of location Two runs: • Representing OReGO gas tax replacement • Higher charge	Toll charged to enter a specific area; no tolls for driving within or exiting the area	Toll charged to operate within an area; charge increases with mileage driven within the area	Parking pricing increased throughout region based on assumptions in the 2018 RTP 2040 FC	Toll charged on freeway links throughout region Three runs (see below)

Assumptions	Applied as higher per mile operating costs (2010$):
	• Run 1: $0.216
	• Run 2: $0.343
	• Base: $0.211
	  • 2010/2011 OR state fuel tax: $0.30 /gallon
	  • Ave 2010 region pass veh fuel economy: 20.4 mpg
	  • Ave 2010 OR state fuel tax: $0.0147/mi
		• Cordon area is downtown Portland and parts of NW Portland (see map below)
		• $7 (2020$) toll to enter the area the cordon area, reflected as $5.63 in the model (2010$). This is the high end of reasonable range of prices based on tolls in other cities
			• Toll area is similar to cordon area
			• E-W distance along Burnside = 1.6 miles
			• Cordon cost / 1.6 = $5/mile.
				• Double all 2040 FC short-term and long-term parking costs (see parking costs section below)
				• Second run may use different costs
					• Run 1: equivalent to VMT2 run on a per mile basis
					• Run 2: double Run 1 cost
					• Run 3: triple Run 1 cost

Geography	**Region (MPA)** See Figure 1	See Figure 2	See Figure 3	See Figure 4	**Region (MPA)**

Figure 1. Metropolitan Planning Area Boundaries

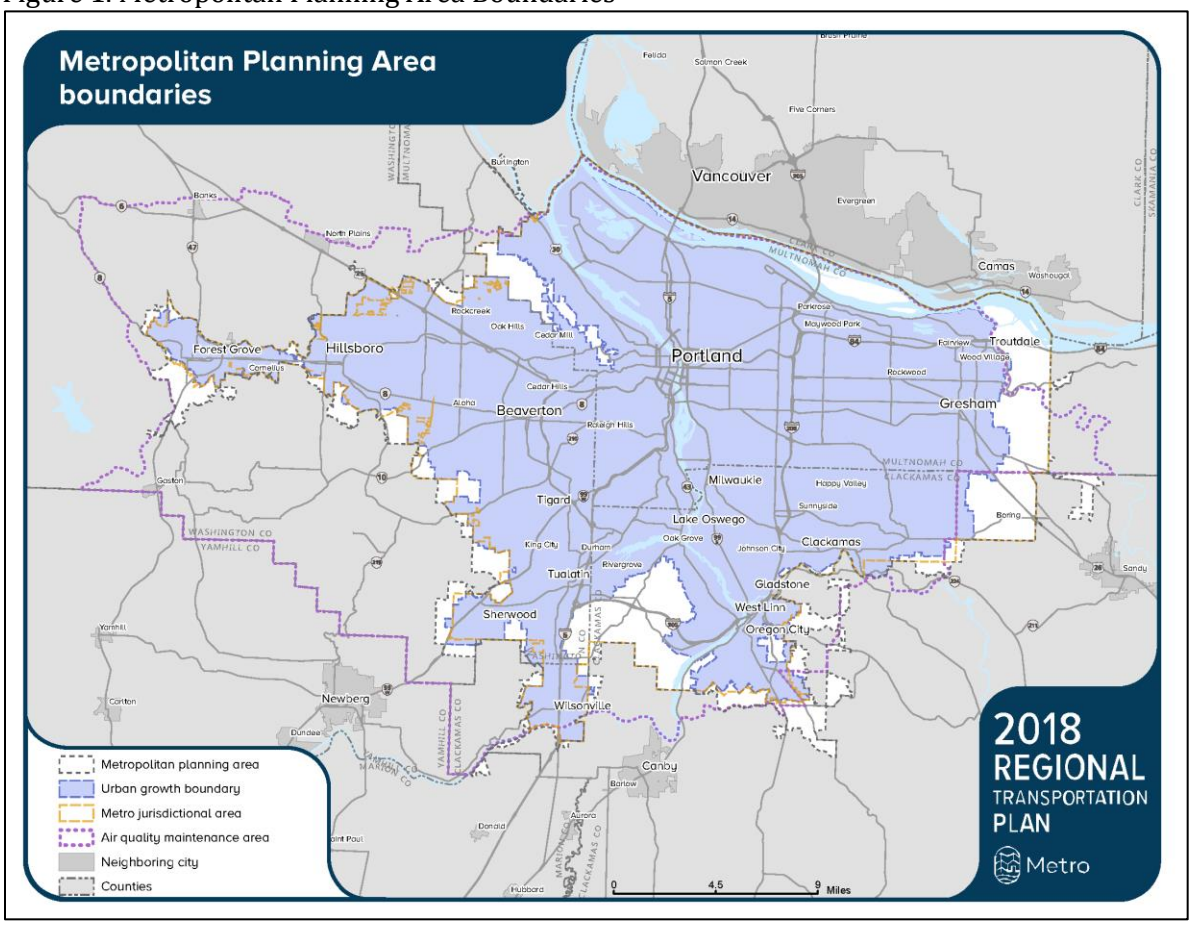


Figure 2. Preliminary Cordon Scenarios tolled links

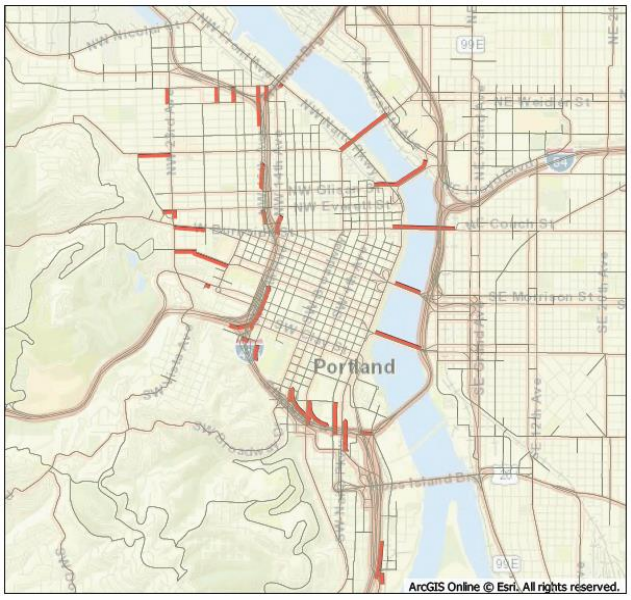


Figure 3. Preliminary Area Scenarios tolled links

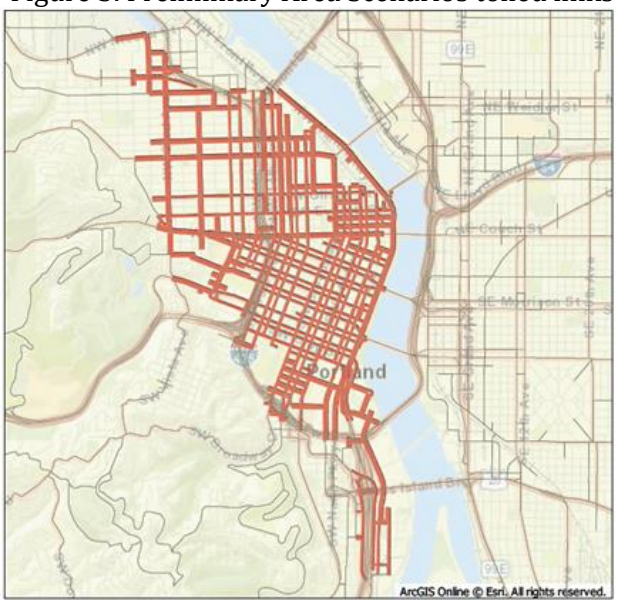
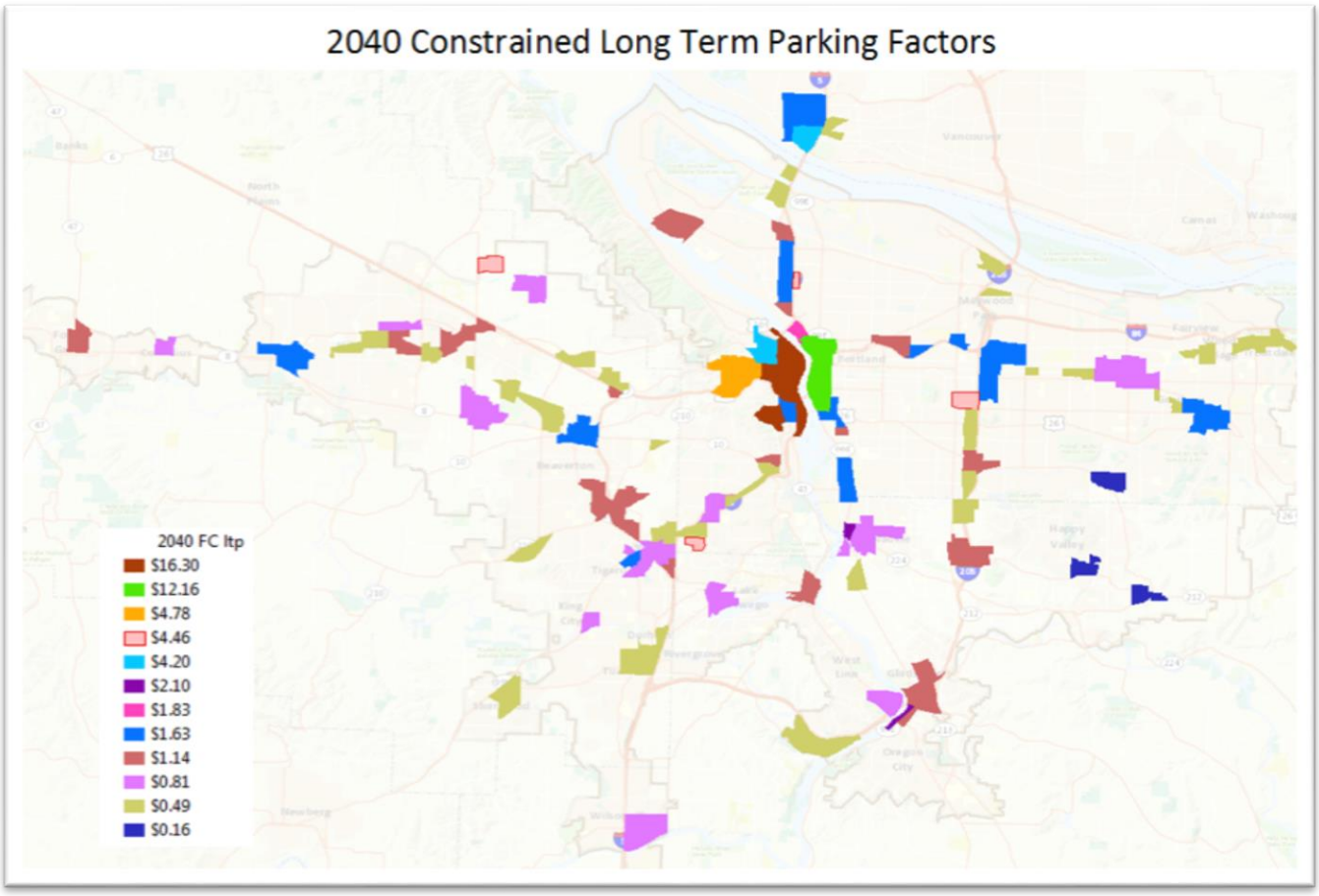


Figure 4: Preliminary Parking Scenarios Parking Charge Locations



TPAC Discussion Questions

- What questions or comments do TPAC members have on the approach, performance measures, tools, or geographies for the Regional Congestion Pricing Study?
- Are there other geographies we should consider for the cordon, area, or parking concepts?
- Are there other roadways we should consider tolling for the roadway concept?

Next Steps

Metro and the consultant team will continue to analyze the preliminary scenarios' modeling outputs to understand their performance. Based on their findings and feedback from TPAC and project partners, Metro staff will adjust the scenarios and model and test revised scenarios.

RCPS staff will return to TPAC in the fall to share the findings from the adjusted scenario analyses and gather further input. The TPAC discussion will include an assessment of the performance of the different pricing concepts based on the model and any off-model analysis. In addition, any updates related to the tools, performance measures, and any possible modifications to the analysis approach will be discussed. After gathering input from TPAC, the findings will be refined and shared with a panel of pricing experts that will provide feedback in winter 2020.

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METRO REGIONAL CONGESTION PRICING STUDY

EXPLORING CONGESTION PRICING FOR THE REGION

JULY 2020

Metro

NELSON NYGAARD


ONE WAY
ONE WAY
MORRISON
TAYLOR
ONE WAY
ONE WAY
Stone Center

WHAT IS THIS STUDY?

The Metro Regional Congestion Pricing Study is exploring whether congestion pricing can benefit the Portland metro region. Metro is looking at many different pricing tools to understand how pricing could support an equitable, safe and sustainable transportation system.

Congestion pricing was documented as a high priority, high impact strategy in the 2018 Regional Transportation Plan (RTP). A range of scenarios testing different congestion pricing tools will help Metro understand if pricing can help the region meet four of the goals set out in the RTP.

Congestion pricing was identified in the RTP as a high impact strategy

Four RTP goals will be used to evaluate the pricing scenarios:

EQUITY
Reduce disparity

SAFETY
Getting to Vision Zero

CLIMATE SMART
Reduce emissions

CONGESTION
Reduce traffic

What is Metro's timeline?

The study is planned to take about 18 months with findings released in early 2021. Leaders around the region may use these findings to inform policies and other transportation projects such as Oregon Department of Transportation's (ODOT) I-5 and I-205 Tolling Project and Portland's Pricing Options for Equitable Mobility (POEM). The findings may also provide information for policymakers who want to propose new congestion pricing projects at the local level.

2019 — 2020 — 2021

PROJECT START-UP
SUMMER 2019 - WINTER 2020

EXISTING CONDITIONS
WINTER 2020 - SPRING 2020

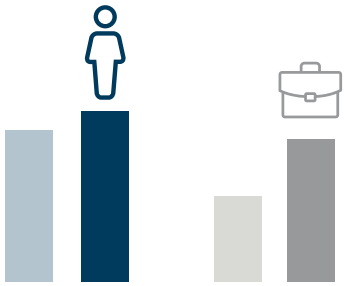
SCENARIO DEFINITION
SPRING 2020 - SUMMER 2020

SCENARIO ANALYSIS
SUMMER 2020 - LATE 2020

NEXT STEPS
EARLY 2021

Why this study?

Congestion is a problem in the Portland metro region. Changing travel patterns and a growing population mean more traffic and less freedom to travel reliably around the region. Congestion also has devastating economic, social and environmental impacts.



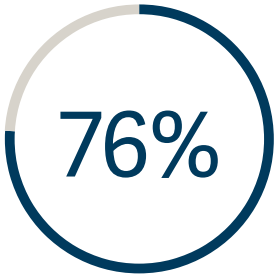
The region expects 600,000 new residents and 350,000 new jobs by 2040.

Source: 2018 RTP

Due to increasing congestion, TriMet must add service each year to get residents and employees to their destinations on time.

Source: 2018 City of Portland Enhanced Transit Corridors Plan

+$1-2 MILLION



of the region's residents think congestion is a serious problem.

Source: 2019 Oregon Transportation Survey

Portland metro is the 8th most congested region in the country.

Source: 2019 Inrix Global Scorecard

1 BOSTON
2 CHICAGO
3 PHILADELPHIA
4 NEW YORK CITY
5 WASHINGTON, DC
6 LOS ANGELES
7 SAN FRANCISCO
8 PORTLAND
9 BALTIMORE
10 ATLANTA

In 2019, people in the Portland metro region spent 89 hours stuck in traffic.

Source: 2019 Inrix Global Scorecard

89 HRS =

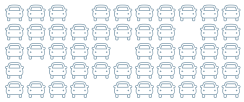
$1,300

PER PERSON

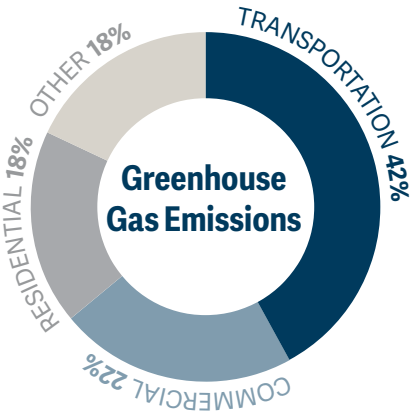
Congestion got 10% worse between 2018 and 2019.

Source: 2019 Inrix Global Scorecard

2018



2019



Transportation accounts for over 40% of Multnomah County's greenhouse gas emissions.

Source: Multnomah County 2017 Carbon Emissions and Trends, Portland Bureau of Planning and Sustainability

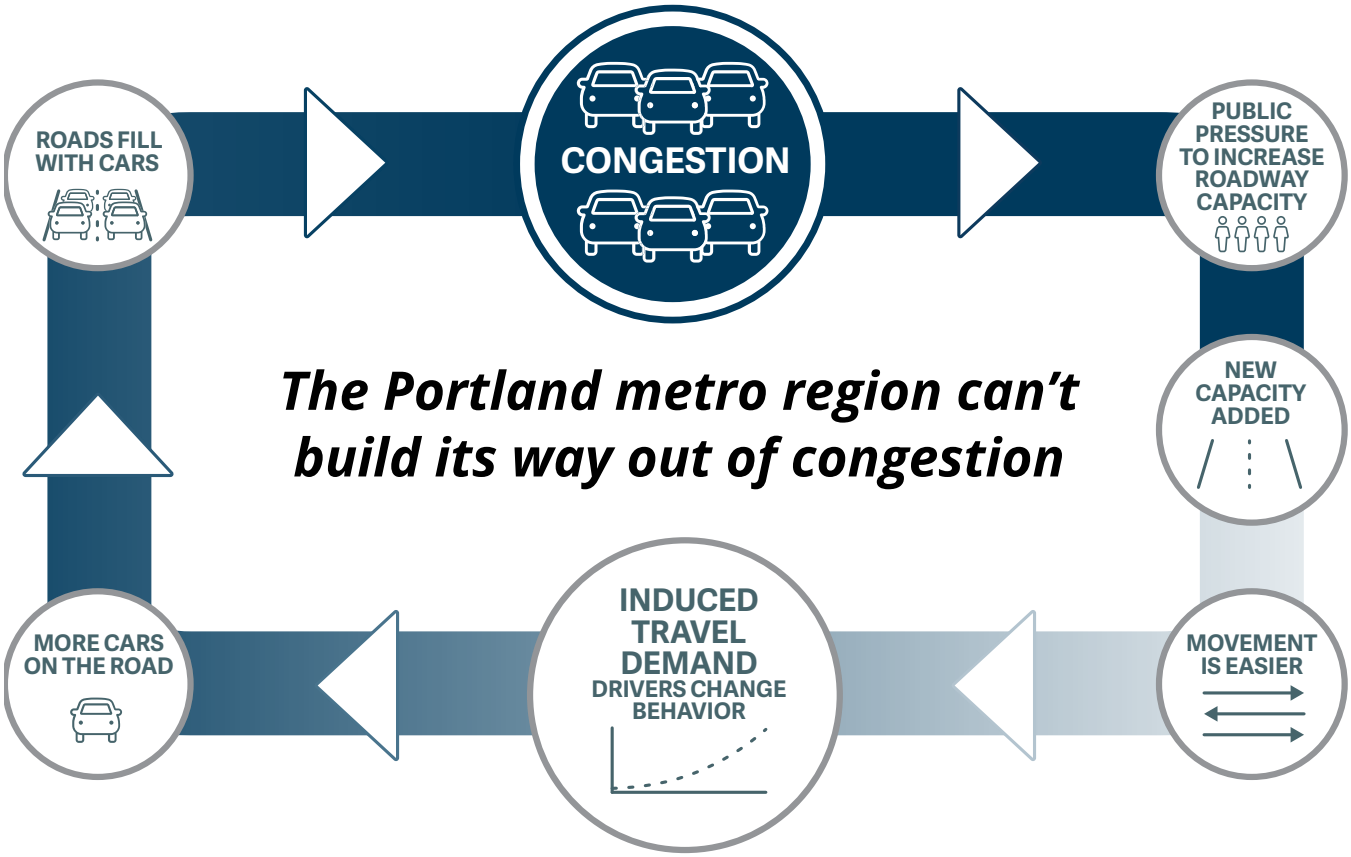
CONGESTION & COVID-19

With stay-at-home orders related to COVID-19, congestion in the Portland metro region has declined significantly. But as businesses reopen and the region goes back to work, congestion will return and may be worse if more people choose to drive. As income disparities and unemployment worsen, inequities in the transportation system will be more important than ever to address.

In the Portland region, the 10 lowest income and 10 highest minority neighborhoods experience more exposure to toxic air than the average neighborhood.

Source: 2012 Portland Air Toxics Solutions Committee Report and Recommendations, Oregon Department of Environmental Quality

The Cycle of Congestion



What pricing strategies is Metro exploring?

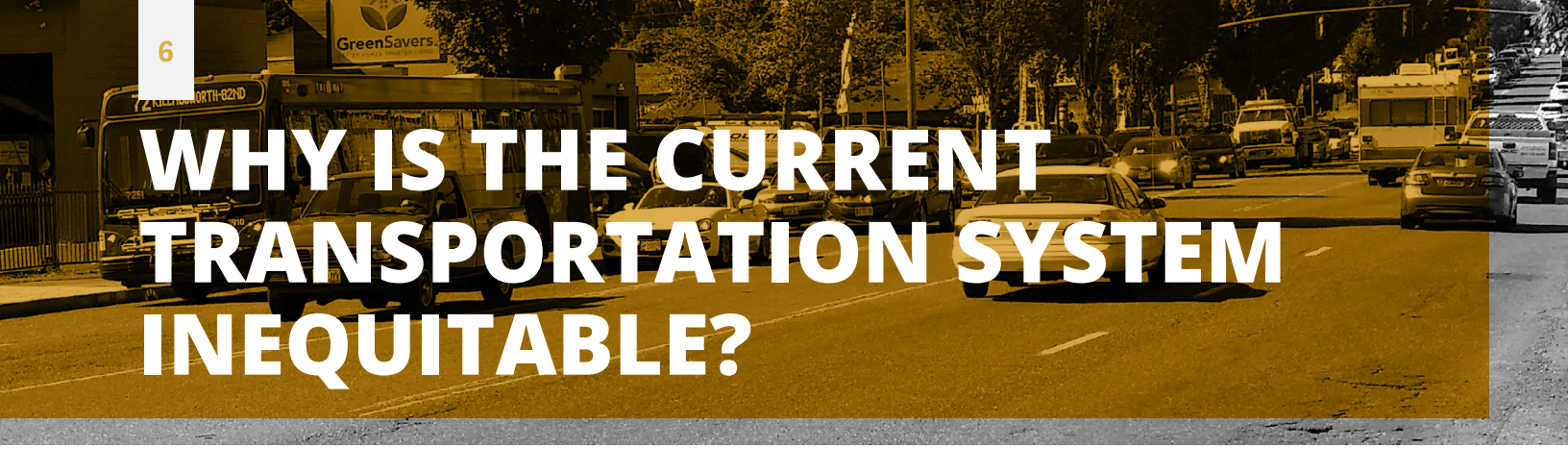
Metro is exploring if and how four congestion pricing strategies can support the region's priorities to **provide an equitable transportation system.** Each of the pricing strategies could vary by time of day, by area, by types of drivers on the road and by income levels.

VEHICLE MILES TRAVELED FEE
Drivers pay a fee for every mile they travel

CORDON PRICING
Drivers pay to enter an area, like downtown Portland (and sometimes pay to drive within that area)

CORRIDOR PRICING
Drivers pay a fee to drive on a particular road, bridge or highway

PARKING PRICING
Drivers pay to park in certain areas



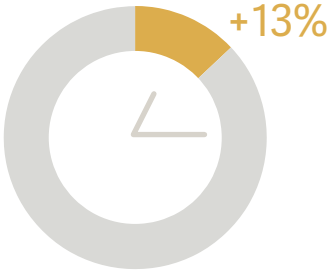
WHY IS THE CURRENT TRANSPORTATION SYSTEM INEQUITABLE?

Transportation investments in the Portland metro region have a long history of contributing to racial inequity and neighborhood displacement. Decades ago, public agencies planned and built new highways that cut through Black communities, splitting neighborhoods and contributing to poor air quality, noise pollution and safety issues. Recently, transit investments have been made without complementary affordable housing strategies, leading to gentrification and further displacement.

Today, while the region's residents all feel the impacts of congestion, historic inequities in the transportation system amplify impacts on people of color and low-income people:

- Housing costs are increasing faster than incomes, making travel distances longer for people of color and low-income people.
- Communities of color and low-income communities have longer commutes, made slower and more unreliable when roadways are congested.
- Major roads and freeways often run through communities of color and low-income communities, resulting in disproportionately high rates of air pollution and chronic illnesses.

In the Portland region, average commute times for Black commuters are 13% longer than white commuters.



The lowest income households spend 35% of their income on transportation. Those with the highest income spend 13% or less.

Source: U.S. Bureau of Transportation Statistics

Funding is limited for travel options that communities of color and low-income communities depend on:

FEDERAL, STATE AND LOCAL GAS TAXES AND FEES PROVIDE REVENUE

INFLATION AND HIGH-EFFICIENCY VEHICLES SHRINK POTENTIAL REVENUES

MOST REVENUES ARE SPENT ON **PRESERVING AND BUILDING STREETS**

REMAINDER CAN BE SPENT ON **TRANSIT, BICYCLE AND PEDESTRIAN PROJECTS**

How can congestion pricing advance equity?

Congestion pricing strategies have the potential to enhance racial equity and benefit historically marginalized communities (people of color, people with limited English proficiency and people in poverty), as well as all residents of the region. This largely depends on how people are charged and how revenue from congestion pricing strategies is spent.

AFFORDABILITY

Unlike sales taxes, fuel taxes and many other transportation funding sources, congestion pricing programs can offer discounts, set caps (the maximum amount that someone might need to pay), provide rebates or fully exempt certain drivers based on income level or other characteristics.

SAFER STREETS

Pricing revenues can be invested in enhanced bicycle and pedestrian networks to improve street safety and provide benefits to historically disadvantaged communities. Pricing can also decrease the number of cars on the road, increasing safety for people walking and biking.

HEALTHIER COMMUNITIES

Pollution from cars and trucks is tied to increased rates of asthma, heart disease and impaired lung function. In the Portland region, urban low-income neighborhoods and communities of color are disproportionately exposed to air pollution. Congestion pricing can help reduce traffic and the associated health risks to these groups.

BETTER MOBILITY OPTIONS

Revenue from congestion pricing strategies can help to fund a variety of mobility options, such as more transit service, roadway improvements to make transit travel times more predictable, carpool and vanpool programs and new mobility programs to increase choices for people who spend more time in traffic.

PROGRAMS FOR SENIORS AND PEOPLE WITH DISABILITIES

Special programs for those with limited mobility can ensure that seniors and people with disabilities can travel around the region. These programs can be funded by revenues from congestion pricing.

WHO ELSE PRICES?

This study will build on lessons learned from other cities to explore whether pricing makes sense for the region. Many European cities have had congestion pricing programs in place for decades, and major North American cities are now studying whether pricing could help to ease their congested streets.

For cities that have implemented congestion pricing programs:

- Their programs have built on aggressive transportation demand management programs, much like Metro's Regional Travel Options program, which provides grants and supports efforts that increase walking, biking, ridesharing, telecommuting and public transit use.
- The goals of congestion pricing programs are wide ranging—they are not just about reducing the number of vehicles on the road. They're also focused on improving air quality and equity.
- Most programs provide a revenue stream that funds transportation options and services. In many cases, this means significant increases in public transit investments that serve people of color and low-income people.
- Public and business acceptance typically increases dramatically after implementation.

Congestion pricing programs in place or under study

What benefits have international cities seen?

STOCKHOLM

- The congestion pricing program has reduced traffic by 22% and reduced greenhouse gas emissions by 14%. *Source: SFCTA, Mobility, Access, and Pricing Study: Case Studies: Stockholm and London, 2010*
- Program revenues have funded 18 new regional bus lines and 2,800 new regional park-and-ride spaces. *Source: SFCTA, Mobility, Access, and Pricing Study: Case Studies: Stockholm and London, 2010*
- After congestion pricing was implemented, the number of acute asthma cases in young children dropped by about 50%. Source: *Simeonova, E, et al., Congestion Pricing, Air Pollution and Children's Health, 2018*

LONDON

- Prior to congestion pricing, traffic in central London averaged 2-5 mph. Since implementation, the average traffic speed has increased to 10 mph. *Source: SFCTA, Mobility, Access, and Pricing Study: Case Studies: Stockholm and London, 2010*
- London increased bus service in the pricing zone by 27%, adding more predictability and faster trips. As a result, bus ridership increased 38% in two years. *Source: Congestion Charging Central London, Impacts Monitoring Second Annual Report, 2004*

What can Metro learn from North American studies?

NEW YORK CITY

In 2019, New York City implemented a congestion zone surcharge on for-hire vehicles (like taxis, Uber and Lyft) in Manhattan as part of its phased approach to pricing. Future phases, planned for implementation in 2021, include a vehicle fee for crossing into a specified zone. A portion of the revenue will be reinvested in the city's subway system.

SAN FRANCISCO

In 2019, the San Francisco County Transportation Authority (SFCTA) began to explore how a fee to drive downtown could achieve congestion, climate, equity and safety goals. The study builds on a 2010 Study, which evaluated the applicability of congestion pricing to San Francisco.

VANCOUVER B.C.

A 2018 study considered how congestion pricing could reduce traffic congestion, promote fairness and support transportation investment. A second phase of study is developing a more detailed approach to a pricing program.

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Metro

TransForm

Our communities. Our transportation. Our future.

A Report and Toolkit to Help Communities Advance a More Equitable and Affordable Transportation System

PRICING **ROADS,** ADVANCING **EQUITY**

PRICING **ROADS**, ADVANCING **EQUITY**

TransForm promotes walkable communities with excellent transportation choices to connect people of all incomes to opportunity, keep California affordable, and help solve our climate crisis. With diverse partners we engage communities in planning, run innovative programs, and win policy change at the local, regional, and state levels.

www.transformca.org

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Contents

INTRODUCTION

Pricing Roads, Advancing Equity Report and Toolkit

Inequities have long been ingrained in our transportation system. Vulnerable communities—which include low-income households, people of color, and those disadvantaged due to ability, age, or other factors—have long borne the brunt of negative transportation impacts while paying a proportionally larger share of their income to get where they need to go.

Meanwhile, in response to worsening road congestion, inadequate funding for transportation, and the climate crisis, cities and regions across North America have begun implementing road pricing programs, primarily on highways. While equity issues are often analyzed when setting up these programs, the primary focus has been on minimizing negative and disproportionate impacts on vulnerable communities as opposed to maximizing benefits and redressing historic or systemic inequities.

A host of major US cities, including New York and several on the West Coast, are now considering "congestion pricing," as it is commonly called, in or around their downtowns. Many of them will undertake major studies in 2019 where equity will be considered a cornerstone of the program. These cities want a clear focus on social and racial equity, based on concerns that road pricing programs may burden low-income drivers with new costs, potentially deepening existing inequities.

These concerns are both valid and helpful. TransForm believes that if public agencies prioritize equity goals and deep community engagement to guide road pricing studies from the beginning, the ultimate programs can greatly benefit vulnerable communities. Road pricing and smart investment strategies can lead to more frequent and affordable public transit, safer pedestrian and bicycle routes, and improved health outcomes for vulnerable communities. Discounts and exemptions for low-income households can create progressive pricing structures. In short, pricing can deliver a wider range of mobility options that are fast, frequent, and affordable, improving access to economic, recreational, social, and other opportunities.

The goal of this report is to challenge policymakers and equity advocates to act on this key proposition: that structural inequity in our transportation system may be remedied in part by effective, equitable road pricing. The companion toolkit complements the report and is designed to help planners implement equitable road pricing strategies.

Chapter 1 of this report explains the need for road pricing and the forms it can take, as well as the equity concerns involved. It looks especially at HOT (High-Occupancy Toll) Lanes and Cordon or Area Pricing. HOT lanes are free for carpools, while any excess capacity may be used by solo drivers willing to pay a toll, which typically varies based on supply and demand. Cordon

or Area Pricing, is where autos pay a charge to enter and/or circulate within a defined zone. This is often referred to as congestion pricing, but recent nomenclature includes “decongestion pricing” (Vancouver, Canada) and “Go Zones” (California). Cordon or Area Pricing has not yet been implemented anywhere in North America but is of growing interest as a means of decongesting city centers and similarly dense zones. London, Stockholm, and Singapore have used this kind of pricing to achieve positive transportation, public health, and even equity outcomes.

Chapter 2 looks at examples of cities in the U.S. and Canada that have studied road pricing, both as an alternative to road expansion and to manage downtown congestion, and further looks at how equity concerns were incorporated into these studies.

Chapter 3 examines a range of strategies to achieve equitable outcomes, focused on full participation in the planning process as a way to achieve greater affordability, access to opportunity, and community health. There is no shining example, yet, of road pricing done as a way to redress transportation inequities. Still, the report provides examples of strategies that are being implemented in cities in the US and around the world that can form the building blocks of an equitable road pricing program.

Chapter 4 introduces the companion toolkit, which outlines five key steps for implementing a pricing program. Each step includes questions to ask, sample performance measures, and references to additional resources. While the toolkit is primarily intended for policymakers and equity advocates that are actively considering a road pricing strategy, it includes many case studies and tools that are interesting and useful in their own right for a variety of audiences.

Road pricing is increasingly being looked at to help solve the interrelated problems of traffic congestion, climate change, transit sustainability, and economic vitality. The *Pricing Roads, Advancing Equity* report and toolkit offers a roadmap to ensure that vulnerable populations can derive real, tangible benefit from road pricing projects—no matter what the other goals of these projects may be.

CHAPTER 1

How Can Road Pricing Advance Equity?

Transportation has reinforced inequality

America's transportation investments and policies have helped to create—and reinforce—racial and social inequities. Since the 1950s, the emphasis on moving cars quickly, combined with sprawling land use patterns, has imposed real costs on *vulnerable communities*. Those within such communities—which include low-income households, people of color, immigrants, and those disadvantaged due to ability, age, or other factors—are less likely to own cars and are more reliant on walking and public transit. Yet the combination of unsafe walking and bicycling conditions and inadequate public transportation has limited access to opportunities for those who need it most.[1] A recent Harvard study found that such access (measured as commuting time) was the *single strongest factor* shaping whether people can escape poverty.[2]

Transportation investments have not only favored those with the resources to own, operate, or otherwise gain access to a motor vehicle; they have often funded roads that ripped right through vulnerable communities. Many of these investments have left multi-generational scars that include physical division of the community, safety issues due to high-speed traffic, and lower property values. Vulnerable communities have also borne the brunt of air quality impacts, with elevated rates of asthma and other illnesses triggered by air pollution.[3] Racial inequities, in particular, are deep, pervasive, and persistent in the United States, and the transportation sector is no exception.

Lower-income families also spend a much higher percentage of their income on transportation.[4] Transportation spending will likely continue to increase for these families, as low-income renters are increasingly priced out of walkable neighborhoods near public transit. This displacement itself can decrease access to opportunities and increase costs as families rely on private vehicles for more and longer trips.

The right transportation policies and investments, along with real and effective participation of vulnerable communities in decision-making, are critical to overcoming some of the most important barriers that limit too many people from finding and keeping a good job, getting an education, and being healthy.

Regions are searching for new transportation strategies

Planning agencies increasingly acknowledge transportation inequities. Cities and metropolitan regions, however, face a host of other transportation challenges that demand attention and

investment, such as traffic congestion, flat or declining transit ridership, growing maintenance costs, and the need to reduce greenhouse gas emissions.

Traffic congestion often tops the list of public grievances and it is getting worse in almost every region.[5] New roads and wider highways don't solve the problem—they just invite more driving.[6] Even the massive Katy Freeway in Houston has seen congestion levels return to what they were before its expansion to 23 lanes, with afternoon commute times on the 29-mile stretch from Pin Oak to Downtown increasing 55% between 2011 and 2014.[7]

Many investments in public transit over the past few decades have also not fully realized their potential. Most bus and some light rail systems get caught in congestion, leading to higher operating costs. Most U.S. systems are losing ridership—and fare revenue—as passengers opt for faster options.[8] It is worth noting, though, that in places like Seattle that are working to get buses out of traffic, bus ridership is growing.

Building our way out of these transportation challenges is an increasingly dim prospect. Almost every city and region in North America is struggling with higher costs to operate and maintain aging road and transit infrastructure (and maintenance backlogs often play out inequitably, hitting vulnerable communities hardest). It is also increasingly expensive to add highway lanes and new rail lines, especially in areas that are already developed.

More recently, the threat of climate change is motivating action. Transportation is now the country's largest source of climate pollution and continues to be a top source of local air pollution, especially in urban areas and areas adjacent to freeways.[9] In transportation planning, climate considerations are rising on the policy agenda.

To overcome these challenges, planning agencies across North America are desperately searching for tools – and few are as powerful as road pricing.

What is road pricing?

The U.S. already has over 5,000 miles of tolled roadways.[10] While tolling has traditionally been applied to whole roads, bridges, and tunnels, two relatively new forms of pricing, aimed specifically at managing demand, are taking center stage in North America: *HOT lanes* and *cordon and/or area pricing*.

HOT lanes are quickly expanding across the country. These "High-Occupancy Toll" lanes, often called express lanes, are essentially carpool lanes that also allow solo drivers in for a fee, when there is unused capacity. The revenue from express lanes is often used to fund the highway expansion needed to create the lane, although sometimes existing carpool or HOV lanes or road shoulders are converted to create the HOT lane. These lanes can be more efficient overall than carpool lanes since there is a way to make use of unused capacity.

Cordons are a form of pricing that charge a fee every time a vehicle enters or exits a defined area or zone. ***Area pricing*** is similar, except that vehicles are charged for circulating *within* that

zone as well. Cities such as Stockholm, Milan, and Singapore have cordon pricing to enter their downtowns, while London employs area pricing for driving within its central zone.

Types of Road Pricing	
Cordon pricing	Cordon pricing is typically applied to a Central Business District or other similar traffic-congested zone; motorists pay a charge to enter the zone, typically using an electronic transponder in the vehicle or license plate readers at entry points.
Area pricing	Similar to cordon pricing, except vehicles that travel *within* the designated zone also pay a fee.
Congestion point charging	Vehicles pay a charge or toll when crossing select key points.
Distance-based charging	Vehicles are charged based on distance traveled. Sometimes referred to as a VMT (vehicle miles travelled) fee.
Full-facility tolling	All users of the facility pay the toll. A "facility" may be a highway, a bridge, a tunnel, or any other roadway.
Managed lanes	Typically located within freeways, a lane or lanes for which access is restricted to HOVs or those paying a toll. Toll pricing on managed lanes may vary in response to changing congestion conditions, and HOVs may travel free or at discounted tolls.
HOT lanes	"High Occupancy/Toll" lanes are for use by carpools, with excess capacity available to single-occupancy cars that pay a toll. HOT lanes use electronic toll collection and traffic information systems to provide variable, real-time toll pricing. Drivers decide whether or not to use the HOT lanes or the general-purpose lanes based on price levels and travel conditions received via message signs.
Express lanes	Express lanes are toll lanes, available for any car paying a toll which varies with demand. Unlike HOT lanes, Express lanes charge all vehicles (including HOVs) for passage. In some cases, discounts may be given to HOVs. Enforcement is simpler and less costly than HOT lanes because there is no need to enforce vehicle occupancy. (Note that some places like the Bay Area now use the moniker "express lanes" for their HOT lanes, conflating these two definitions).
Flat rate tolls	These are toll rates that do not change, such as $5 to cross a toll bridge regardless of time of day or demand.
Dynamic or variable pricing	Rates vary with demand: when the tolled facility is lightly used, rates are low; as the lane begins to fill, rates rise to ensure that fewer cars enter the facility (usually to maintain free-flow speeds).

London exempts many vehicles from paying the congestion charge, including those belonging to and/or driven by people with disabilities, low-emission vehicles, and for-hire-vehicles such as taxis and ride-hailing services. Rapid growth of the latter, though, has contributed to new congestion and is forcing a reevaluation of the pricing strategy to keep it current and effective.[11]

Both New York and San Francisco have considered cordon pricing as a way to reduce congestion, but neither has yet moved forward, in part due to equity concerns.[12] Vancouver

(Canada), Seattle, Auckland (New Zealand), and Los Angeles are also starting to consider congestion pricing in or around their downtowns and other congested zones.

Pricing strategies are gaining traction

Road pricing can be a powerful tool for helping achieve transportation system goals; it can simultaneously reduce demand during peak times, make more efficient use of infrastructure, and create a new source of funding for more equitable transportation solutions. It can significantly improve the efficiency of a transportation system that is reeling from overuse and severe capacity constraints.[13]

Road pricing is based on a fundamental economic principle: ***when people have to pay the true cost for something, they use it more efficiently.*** The true costs of driving are not just reflected in construction and maintenance costs, or what people pay in taxes; they also include the *external* costs of congestion, pollution, collisions, etc. When road pricing reflects some or all of these costs, some people make changes to at least some of their trips. They may move some to off-peak times, choose different destinations, switch modes (whether occasionally or regularly) or consolidate their trip-making, reducing the pressure on roadways.[14] Those that pay enjoy a faster, more reliable trip. Even a relatively small reduction in the number of vehicles on a congested road can improve a road's throughput, significantly reducing delays for *everyone*.

Yet pricing can generate its own set of issues. ***If implemented without a clear focus on social and racial equity, it can deepen existing inequities in our transportation system and in society at large.*** It can burden low-income commuters with new costs, just when skyrocketing housing costs are forcing some to move out of transit-rich urban centers and rely on private vehicles for more and longer trips. If the revenue raised by road pricing is used primarily to build new roads, pricing could end up inviting yet more driving, increasing emissions and climate pollution, and limiting the potential to support alternatives.

It is important to evaluate the impact and efficacy of road pricing not in a vacuum, but in comparison to viable alternatives or the status quo. For example, sales taxes and parcel taxes—which we often use to fund transportation—are not only *regressive,* but also *inefficient,* since they make it seem like use of the roads is free, and thus induce excess driving.[15] Road pricing charges are paid only by users, rather than the entire public, so they don't impose an unfair burden on non-driver households (which are often low-income people of color).

Equity and sustainability concerns with road pricing

Some equity concerns are common to road pricing strategies. The most potent is that they might be regressive. Another is whether the mechanics of toll payment (such as requiring users to front sums of money or have bank accounts to link to their transponders) limit access for low-income people.

Perhaps the biggest affront for many people is that road pricing can appear to create a two-tier transportation system. For HOT lanes that means those who can afford it are able to drive quickly while those on limited budgets are relegated to sit in traffic congestion (hence the moniker "Lexus Lanes" that has stuck in some areas). While people of all incomes do use the lanes and surveys show that people of all incomes appreciate the choice of using the lanes when needed, it is also true that middle- and upper-income drivers use them more frequently.

For cordon or area pricing, there is often concern that people from vulnerable communities might be unable to afford to make trips they currently make, especially their regular commute. For some people this may lead to detours, shifting modes or their time of travel, or even changing their designation to avoid the new charges. It may also create new costs with regard to both time and increased gas and vehicle use.

London's program has received the most attention in the U.S. London has conducted regular analyses of equity impacts both before and after implementing area pricing. Concerns about the equity of the London program center on whether it is *progressive* overall (due to the focus on expanding and improving public transit links) or *regressive* (as low-income drivers who drive into the central zone pay the congestion charge).[16]

Cordon and area pricing have generally reduced driving by 15-20% and congestion by 30% or more.[17] Several of these programs started as pilots since they were not popular when first proposed. In Stockholm just a third of the public was in favor of the program before the pilot. After the pilot was implemented, support eventually rose to two-thirds as people came to understand the policy and enjoy the benefits.[18]

In some cases, HOT lanes have reduced average vehicle occupancy as some carpoolers opt to drive solo and pay the charge—especially when there is a conversion of HOV-2 (HOV lanes open to cars carrying at least 2 people per vehicle) to HOT-3 (lanes open to cars carrying at least 3 people or to those in other vehicles willing to pay the toll).[19]

These concerns are all valid. Yet it is also possible to design a system that overcomes them. It is possible to harness the efficiency of road pricing to move public transit more quickly, support new mobility choices, and decrease driving and pollution. With targeted discount and exemption programs, it is even possible that people from vulnerable communities who still need to drive can *benefit* from the decrease in congestion and increase in reliability.

CHAPTER 2

More Regions Are Considering Pricing

Most road pricing projects implemented in North America, to the extent they truly considered social equity, have focused on mitigating harm. Out of all the projects reviewed, Los Angeles' HOT lane implementation took equity issues most seriously and this report's companion toolkit features several of Los Angeles' strategies.

Discussed below are six efforts that suggest a new model for using the efficiency of pricing as a tool to advance social and economic equity. While the examples are all in coastal states, some of the good work being done in places like Dallas/Fort Worth (featured in the toolkit) points to the potential for a wide range of geographies and political environments.

One thing is certain, though: ***we will not effectively resolve inequities in our transportation system unless improving equity is a major project goal for road pricing proposals.*** Such concerns need to help drive and lead the agenda, not follow it. This report focuses on two major ways road pricing can advance an equity agenda: as an alternative to highway widening and as a tool for managing congestion in downtowns and similarly dense urban areas.

Pricing as an alternative to highway widening

Portland, Oregon, offers an interesting example of the potential for road pricing to serve as an alternative to highway expansion—and some of the obstacles. When the Oregon Department of Transportation (ODOT) proposed expanding capacity on the I-5, I-205 and 217 freeways, a broad range of groups, spearheaded by the Nature Conservancy with the Oregon Environmental Council (and including business groups, Metro, and the Port of Portland), recommended that ODOT look into congestion pricing as a way to manage demand. This recommendation was incorporated into the state's $5.3 billion transportation funding package which passed in April 2017.[20] In addition to various fees and taxes, it directs the Oregon Transportation Commission to develop a proposal for congestion pricing on I-5 and I-205.[21]

To advise the pilot pricing projects on the two freeways, ODOT formed a 24-member advisory committee including representatives of local governments, business, highway users, and equity, transit, and environmental advocates.[22] The group made a host of recommendations in 2018, aimed at expanding public transportation and other travel choices as well as asking for a more detailed set of equity mitigations for low-income commuters, to be studied in future phases.

In addition, a group of organizations came together as the No More Freeways Coalition to oppose the widenings with a particular focus on a 1.7-mile section in the Rose Quarter. The added capacity would run right past a historically black middle school and cost over $450 million. Groups from the Sierra Club's Oregon Chapter to NAACP Portland Branch signed on.

Many of the coalition members argued that "decongestion pricing" should be tried as a way to manage demand. The group continues to battle this widening.

There is growing support for pricing at the city and regional level. The Portland City Council passed a resolution calling for implementation of congestion pricing and TDM options "as soon as feasible and prior to opening of this (Rose Quarter) project."[23] In a clear indication of how complex transportation-decision making can be, in February 2019, the Metro Council (Portland's regional planning agency) informed ODOT of its plan to move forward with a complementary pricing study—one that would consider a broader range of pricing strategies including cordon pricing and full freeway tolling.[24] Although Metro does not have the legal authority to implement road pricing at this time, several of their planning documents seek to "expand use of pricing strategies to manage travel demand."

As the Oregon studies move forward, they are faced with a paradox: while many of the agencies see pricing as a way to reduce the need for future road widenings, the State's constitution requires that toll funds be spent on roadway projects (though there can be exceptions for rebates to fund transportation allowances).[25] For equity groups, there may be a strong benefit in working to amend the constitution, or at least in ensuring that pricing is part of a larger package of transportation measures that has overall equity benefits.

San Francisco Bay Area. TransForm has led a multi-year campaign in the Bay Area to fight the proposed widening of eight-lane Highway 101 between San Jose and San Francisco, and instead promoted the conversion of an existing general purpose lane in each direction to HOT-3.

TransForm made the case that the financial savings from converting rather than widening, in addition to HOT lane revenues, should be used to expand and improve transit options and to provide incentives for vanpooling and carpooling. TransForm also pushed for an equity strategy to expand successful programs like free transit passes for service workers. The regional transportation planning agency, MTC, performed a study in 2015 that confirmed the effectiveness of this approach: a convert and optimize strategy had strong mobility benefits, but without the negative impacts of widening. [26]

While the Environmental Impact Report (EIR) that began in 2015 included the conversion alternative, the lead agencies couldn't model all of the interrelated elements of TransForm's proposal, such as the transportation demand management and new mobility strategies, only including some new express bus service in the model. Another critical component of the alternative, San Francisco's study of lane conversion all the way to their downtown, was not far enough along in the planning process to include. As a result, the EIR's conversion alternative routed the express buses through highly congested lanes once they neared San Francisco, resulting in too little improvement in mobility and reducing the apparent viability of the alternative. The conversion alternative was thus rejected by planning staff (even though congestion would also increase significantly in the widening alternative that was adopted).[27]

While that particular proposal for conversion rather than widening on 13 miles was rejected, three elements of TransForm's framework for equitable pricing are moving forward:

- Both San Mateo and San Francisco counties will soon initiate equity analyses for the Highway 101 corridor.

- Two of the agencies are analyzing conversion of general purpose lanes along the corridor; SamTrans for the Dumbarton Bridge[28] and the SFCTA for the San Francisco portion of the corridor. MTC is also now analyzing the potential for lane conversion to create a complete regional express network. [29],[30]

- Six transportation agencies have agreed to develop a 101 Mobility Action Plan to optimize the use of the lanes. Equity-driven solutions and the potential for social mobility are key parts of the project mission.

Congestion pricing for downtowns

Congestion pricing for downtowns is not yet practiced in North America, but as big cities get more congested and as climate concerns rise on their policy agendas, it is of growing interest. The authors' review of downtown pricing proposals suggests that these have greater potential to advance equity than HOT lanes—in part because the vast majority of low-income commuters into city centers are not driving their personal vehicles, but would gain mightily from expanded, faster, and more reliable transit. Four current efforts to implement congestion pricing are briefly described below.

New York City has seen several congestion pricing proposals since 2006. In 2014, former Traffic Commissioner Sam Schwartz—looking to overcome opposition to Mayor Bloomberg's pricing plan that drew the ire of the outer boroughs—proposed a "Move NY" plan that focused on both geographic and income equity. The chart on the next page is adapted from Move NY's infographic explaining the proposal; it highlights how the charge could produce real and significant benefits to low-income New Yorkers through support of transit and travel discounts. State-level legislation to implement Move NY was introduced in 2016 but did not pass.

In response to continued overcrowding and delays on subways and buses another plan was developed in 2018.[31] The Fix NYC Advisory Panel Report directly linked congestion pricing to new investments in transit, particularly for the outer boroughs and suburbs—recommending that such investments begin even before the implementation of a cordon charge.

The phased approach included a proposal, adopted by the state legislature, to charge $2.50 for taxis, $2.75 for Uber, Lyft or other for-hire vehicles, and 75 cents for app rides that are shared. This charge was first levied in February, 2019. The final phase of the plan included a new congestion charge for other vehicles entering downtown and was expected to raise between $810 million and $1.1 billion annually, much of which would be invested in the public transit system where it would provide benefits for many of the city's low-income residents.[32]

At the end of 2018, the bipartisan city/state Metropolitan Transportation Sustainability Advisory Group released a report recommending a congestion pricing zone in the Manhattan

commercial district with all proceeds going to the MTA for transit capital and operations.[33] Governor Cuomo, in his 2019 state budget proposal, has called for congestion pricing to be finally adopted for New York City.[34] In February 2019, Mayor de Blasio also came out in support of congestion pricing, greatly increasing its odds of passage.

Move NY's Solution to Get NY Moving Again[35]			
THE PROBLEM	**For far too long transportation needs of New Yorkers have gone unanswered.**		
	Our roads are clogged with traffic and ridden with potholes.	**Our transit** is outdated and buses are overcrowded, service is scarce in parts of the city.	**Our tolls & fares** are skyrocketing with little return on our investment.
THE SOLUTION	**Create a sustainable, dedicated revenue stream for our transportation system.**		
	Adopt A fairer tolling system that reduces tolls where there's less traffic and fewer transit options and adds them where traffic is heaving and transit options are plentiful.	**Empower** communities and their representatives to make local transit investment decisions.	**Safeguard** the revenue through bond covenants to avoid robbing Peter to pay Paul.
INVESTMENTS	**PayGo** Total: $1.465 billion per year	**Bonded** Total: $15 billion	
CITYWIDE BENEFITS	Extend citywide commuter rail discounts for 7 days a week Create new discounted monthly pass for combined commuter rail, subway, and bus rides $2.8 billion per year in increased economic activity Fair Fares (discounted metro cards for low-income New Yorkers)	Faster travel inside & outside the Central Business District New ferry service 30,000+ new, local jobs Improved roads and bridges Toll relief on 7 MTA bridges $1 off all Express Bus fares	
THE NUTS & BOLTS	**Reduce tolls up to 48%** Toll savings on Triboro, Throgs Neck, Gil Hodges, Henry Hudson, Cross-Bay, Whitestone & Verrazano **Equalize entrance into CBD (Central Business District)** Tolls on East River Bridges and across 60th Street same as Brooklyn Battery and Midtown Tunnels **Treat "For-Hire Vehicles" equally** Uniform surcharge within Manhattan taxi zone; CBD toll exemption **Protect small businesses** Tolls capped at one round-trip per day; 2-3 more daily deliveries or service calls possible per business due to less traffic **Adopt variable pricing** Drivers avoid higher tolls by opting to travel during off-peak hours		

San Francisco completed a study of downtown cordon pricing in 2010, and with congestion rising quickly since then, the San Francisco County Transportation Authority (SFCTA) is again studying the strategy. The 2010 study found that a cordon around the city's northeast quadrant, encompassing the Central Business District (CBD) as well as several congested neighborhoods, would be the most practical. The study found that less than six percent of peak period travelers to the focus area were low-income drivers. SFCTA proposed a 50% discount for those commuters as well as for people with disabilities. The vast majority of low-income travelers would be accessing the area by other modes and would benefit significantly from expanded, faster, more reliable transit, as well as better walking and bicycling infrastructure.

SFCTA is also moving forward with another tolling strategy for Treasure Island, an ex-naval base in the middle of San Francisco Bay. Massive development is proposed for the island, even though the only way to *drive* on and off the island is via the heavily congested Bay Bridge. SFCTA plans to charge all vehicles coming onto Treasure Island beginning in 2021. Details of their equity strategy for the project are described in the next chapter.

Vancouver has been exploring regional congestion pricing through a careful and deliberate process, which has identified two potential road pricing alternatives for further consideration—distance-based charges and congestion point charges, the latter a form of cordon pricing.

Three overarching objectives are guiding their process: reducing traffic congestion, promoting fairness, and supporting transportation investment. Equity considerations are embedded in the principle of promoting fairness and have been a primary part of the planning process from the beginning. Impacts on vulnerable communities are among the core issues being addressed, including estimating the level of revenues that would need to be reinvested in low-income communities so that the pricing element of any plan would not be regressive.

Seattle is exploring the use of pricing to reduce congestion, address climate change goals, and generate new revenues. At the same time, the City of Seattle has embraced equity as central to transportation planning, having established a Transportation Equity Program in 2017. This program "provides safe, environmentally sustainable, accessible, and affordable transportation options that support communities of color, low-income communities, immigrant and refugee communities, people with disabilities, people experiencing homelessness or housing insecurity, LGTBQ people, women and girls, youth, and seniors..."[36]

Funded through the Seattle Transportation Benefits District, the Transportation Equity Program allocates up to $2 million annually to support equity programs, including:

- Subsidized and youth transit passes;
- Partial rebate on vehicle licensing fees;
- Discounted car-share memberships and driving minutes; and
- Ongoing community consultation.

Funding from a road pricing project could be used to help maintain or expand these programs, as well as enhance transit services.

CHAPTER 3

Achieving Equitable Outcomes

Defining equity outcomes

To understand how road pricing strategies can drive an equity agenda, the desired outcomes need to be clearly understood. There are dozens of papers describing different types of equity outcomes in relation to congestion pricing.[37] These include overall ideas of fairness, such as by geography, not just those related to vulnerable communities. ***This report focuses on two dimensions of equity: Process Equity and Outcome Equity.***

For **Process Equity**, the key measure is the full participation of vulnerable communities in planning, implementation, and project follow-up. Process Equity is central to the long-term task of making transportation systems more equitable for all people while addressing *historical inequities* that continue to affect vulnerable communities. For **Outcome Equity**, TransForm identifies three key measures: affordability, access to opportunities, and community health. Step #2 of the Toolkit has more detailed explanations of each measure as well as sample indicators for each.

Type of Equity:	*Key Measures:*
Process Equity	Full Participation
Outcome Equity	Affordability
	Access to Opportunity
	Community Health

This chapter lists sample strategies for each of these four measures. Many of these examples are taken from existing pricing programs, while others could easily be introduced as part of a pricing program.

The solutions for each city and region will vary. Some of the most relevant strategies may have been identified previously in local or regional plans, or in recommendations made by community groups for other projects. In such cases, road pricing may become the means to fund promising strategies that otherwise might not get implemented.

Step 4 of the toolkit suggests specific performance indicators that can measure progress towards each of these four outcomes.

Full participation

There are countless resources available for supporting strong public participation from vulnerable communities. The chart below indicates the kinds of participation efforts that are more or less likely to empower communities.

Increasing Degree of Participation[38] →					
Level	**Minimal**	←	→		**Optimal**
Public Participation Goal	Vulnerable Communities are provided information on the project.	Vulnerable Communities provide feedback to the goals.	Solicitation of public concerns and aspirations is ongoing	Agencies closely partner with community groups throughout the project.	Vulnerable communities have a seat at the decision-making table.
Sample Outreach Strategies	• Fact sheets • Websites • Open houses	• Public meetings • Public comment • Focus groups • Surveys	• Workshops • Deliberative polling	• Advisory committees comprised of residents • Consensus building • Participatory decision-making	• Citizen juries • Ballots • Delegated decisions • Formal representation on decision-making groups

The expectations for the level of engagement are somewhat different for different pricing proposals. HOT lanes seem to get the least scrutiny and carry the lowest expectations. This may be because drivers can opt to use the free lanes some or all of the time, and because carpooling, vanpooling, and transit are not charged for entering the lanes.

For cordon or area pricing proposals—like those described above for San Francisco, NYC and Seattle—the bar is typically very high. In part this is because all drivers (unless there are exemptions) would have to pay for something that had been "free." In addition, elected leaders and residents in these cities are increasingly prioritizing social equity, especially as inequality widens. Finally, cordon pricing is still a new and untested concept in the U.S., so there are no domestic examples of its benefits for transit and pollution or direct examples of mitigation measures for its costs.

For cities and agencies engaged in pricing studies, an important consideration is the degree to which they've already developed an effective approach to operationalizing equity in community participation processes. These measures include:

- Having equity experts on staff;

- Developing or adopting general racial and social equity tools;
- Training staff in equity issues and processes; and
- Contracting with members of vulnerable communities as consultants in community participation work.

A major concern with achieving full participation is ensuring that representatives from vulnerable communities are present *from the beginning* on project advisory boards, sharing local knowledge and concerns. Their input is vital at the earliest stages of project visioning to help determine equity needs and community desires and concerns, as well as to identify metrics to help determine project success.

Vancouver: Community engagement around outcomes and indicators. In exploring the use of road pricing in the metro Vancouver region, the Mobility Pricing Independent Commission engaged in extensive community consultation, making a notable effort to reach out to vulnerable communities (see graphic below). Their engagement identified a number of issues related to equity concerns with road pricing, including the need for improved infrastructure for transit and safe bicycling and walking; finding equitable ways to mitigate impacts on seniors, lower income, and/or differently abled people; providing discounted transit fares; and general affordability concerns.[39]

Vancouver's Mobility Pricing Study Public Participation Results[40]

- Conducted **2** rounds of public opinion polling in September 2017 and March 2018 with **2,000** residents across the region
- Launched **2** multilingual public education campaigns on the Commission's work and mobility pricing in the region in **16** local distribution and **11** non-English newspapers and reaching **898,099** residents on Facebook and **65,752** website page-views
- Conducted online public engagement and in-person workshops to inform the principles, hearing from **6,078** residents and **176** stakeholders and government officials in Phase 1 and hearing from **11,474** residents and **130** stakeholders in Phase 2
- Increased accessibility by translating the online platforms into Traditional Chinese, Simplified Chinese, and Punjabi (the region's largest non-dominant languages), receiving **310** completed paper surveys from over **16** regional community offices, and conducting outreach with social service organizations
- Convened a citizen-based User Advisory Panel of **15** members representative of Metro Vancouver (selected through an external recruitment firm) to advise and provide input at key stages of the project

New York City DOT: Street Ambassadors Program. The New York City Department of Transportation created its Street Ambassadors Program to help improve process equity in its planning efforts by stimulating broader public participation in the planning process. Street

Ambassadors are recruited through external temporary employment programs that support the "diversity pipeline" in order to bring in a range of language skills and cultural backgrounds.[41]

The program was designed to be:

- *Equitable*, by intentionally hearing from as many affected people as possible, actively seeking out underrepresented groups, and speaking with them in multiple languages;
- *Flexible*, by meeting people where they were, including at rush hour, in the evenings, and on weekends; and
- *Respectful*, by honoring people's time and not making people go out of their way to participate.

As a measure of the success of the program, in 2016 the program supported 82 street improvement projects with over 32,000 conversations with the public.[42]

TransForm's companion toolkit has a section on full participation that includes indicators to show whether the program is achieving strong participation.

Affordability

At the heart of the affordability question is: Will the proposed pricing project make transportation *more expensive* for some members of vulnerable communities, and by how much? **It is just as important, however, to ask if there are ways transportation can be made *more affordable* through such projects.**

How can road pricing make transportation more affordable, when it seemingly adds a new expense? There are several ways.

- Unlike sales taxes, fuel taxes, and many other *regressive* sources of revenue, pricing programs can offer means-based affordability options that reduce costs for low-income drivers. Sample strategies for this are described below under "Subsidies, discounts, caps, and exemptions for drivers."

- Pricing programs can also provide lower cost options or subsidies and discounts for people who are already using alternatives (for example, by distributing free or discounted transit passes). Sample strategies for this are described below under "Affordability for transit riders and other mobility options" and "Bike share discounts."

- Finally, an improved set of alternative choices—funded by pricing revenues or simply by speeding up public transit—may allow people to save money on gas, car maintenance, and parking, and even reduce the need for vehicle ownership for some.

One way to understand impacts on affordability is to look at *overall* household expenditures on transportation. What percent of a household's income goes to all transportation expenses? The Oakland-based Greenlining Institute, in its *Mobility Equity Framework*, recommends a general

target that households in vulnerable communities devote no more than 20% of their income to transportation.[43] This figure will necessarily vary by region/city, but is a good starting point.

Subsidies, discounts, caps, and exemptions for drivers

The most direct way to mitigate the cost of a pricing program on low-income drivers is to consider a range of subsidies, discounts, credits, caps (the maximum amount that someone might need to pay, usually over a certain period of time), and toll exemptions. While these may benefit those drivers, such discounts, caps, and exemptions need to be carefully weighed against other program goals such as moving traffic more efficiently or reducing greenhouse gas emissions. It is essential to define, up-front, the process for identifying and harmonizing these potential conflicts, including programs to transparently monitor, evaluate, and adjust program elements to ensure that all goals are met.

Some planners have proposed comprehensive transportation subsidies, applicable not only for driving fees or tolls, but for transit and other sustainable options as well. Sometimes referred to as a "mobility wallet," these subsidies could address equity without creating an incentive to drive. While the concept may face implementation hurdles it is worth pursuing as a way to achieve both equity and efficiency outcomes.

Usually, a single threshold is set to qualify for discounts, but it doesn't need to be that way. A Seattle focus group in 2014 suggested tolling should be different for drivers under 30% AMI (Annual Median Income) and those earning 30-60% AMI, to maximize benefits.[44] The following are two examples of existing programs and two that are proposed.

Los Angeles: Transponder Credits. L.A. Metro provides a one-time $25 transponder credit and waives the monthly maintenance fee for L.A. county residents who fall below an income threshold (about twice the Federal Poverty Level).[45] Their transit rewards program, the first of its kind, gives transit riders a $5 credit to use the express lanes for every 16 transit trips during peak hours using the I-10 El Monte Busway or I-110 Harbor Transitway.[46]

London: Exemptions. London offers various discounts and exemptions to disabled drivers. Notably, the London congestion charge includes a 'Blue Badge Program' for drivers with disabilities, which offers a 100 percent discount to them and those driving them. Participants may register up to two vehicles in the program.[47] Refunds are also available for certain people traveling to hospital appointments.[48]

In order to make the congestion charge more politically acceptable, the transportation authority offered many different exemptions. For instance, residents within the charging zone received a 90 percent discount, and there were exemptions for alternative fuel vehicles.[49] The number of exemptions has muted the traffic and emissions reduction benefits, especially as ride hailing services grow. As a result, London has been reviewing and restructuring some of these benefits.

New York City: Caps on Tolls. The Move NY cordon pricing program proposed a cap on tolls for small businesses, essentially permitting multiple crossings of the cordon line in any given day

after the first toll is paid. With the expected reduction in traffic delays, it is estimated that the average business could add an additional two to three deliveries or service calls per day.[50]

San Francisco: Treasure Island Transportation Affordability Program. Beginning in 2021, SFCTA will implement a program that has many characteristics of a cordon price. The Treasure Island Mobility Management Program merges the concepts of cordon pricing and road tolling by charging all vehicles that drive onto Treasure Island, a former naval station that is being redeveloped.[51] The program, to be funded in part by the tolls, will provide new residents of Below-Market Rate (BMR) units a discount on a variety of modes through a multimodal Transportation Affordability Program (TAP), which includes transit and car-sharing. Combined with new or improved transit services and lower transit costs, the program is expected to benefit many more residents than a toll credit of any kind. Longtime households and existing BMR residents would also receive one non-tolled daily round-trip (or an equivalent TAP benefit) until July 2026.[52] The program is expected to both reduce costs and improve mobility for low-income residents of the island, while also reducing congestion, air pollution, and time spent driving.

Affordability for transit riders and other mobility options

New York City "Fair Fares." Means-based fare reductions were proposed as part of the Move NY program in 2015. Implementation started in January 2019, even though the full pricing program has yet to be approved. The program offers half-priced MetroCard transit passes for city residents whose incomes are below the Federal Poverty Line, potentially covering up to 800,000 New Yorkers.[53]

Seattle ORCA fares. After passing a Transportation Equity Resolution, Seattle adopted a number of programs to increase transportation access and equity. Seattle built on the already-established King County ORCA Lift program, which offered half-price transit fares for those who qualify based on income, with the ORCA Opportunity program, providing free, unlimited transit for high school students, income-qualified middle school students at Seattle Public Schools, and Seattle Promise Scholars.[54] Finally, Seattle is starting a low-income car-share program to provide income-eligible residents with discounted car share memberships and driving minutes.[55] While currently funded through other sources, many of these equity programs could be funded through a congestion pricing plan. Places like Seattle that already have such programs in place can more readily expand or deepen them with funds from congestion pricing.

Bike share discounts

As bike share increases in reach and popularity, discounted and improved bike share programs can be an important benefit to vulnerable communities that may be funded, at least in part, through congestion pricing revenues. Bikeshare isn't just an alternative mode on its own; it can be an important element of a transit program, offering people a convenient "first mile/last mile" solution for accessing transit from beyond a comfortable walking distance, extending the reach of a station significantly.

Chicago's bike share program, Divvy, provides a $5 annual membership that allows for cash payment for Chicago residents below 300% of the Federal Poverty Line. The cost goes up every year, reaching a $75 annual membership in year four. Members can add money to their account using cash at participating 7-Eleven, CVS, and Family Dollar stores.[56]

In the Bay Area, a similar Bike Share for All discount, combined with a regionally coordinated equity outreach program, helped increase the number of low-income members from 3% to 20% in the span of a year.[57]

The City of Portland, Oregon, offers highly discounted rates on its bike share program. Low-income residents who qualify can purchase a monthly pass under the Biketown-for-All program for just $3/month (with the first month free), compared to the standard fee of $19/month. Low-income residents can further earn credits to reduce their out-of-pocket costs to zero.[58]

Vancouver, British Columbia, has recently launched its "Vancity Community Pass" bike share program for low-income residents, offering a year of bicycle access for just $20. Qualification piggybacks off other low-income passes, including those offered through the transit agency and community centers, as well as third party referrals from partner organizations, and no credit card is required.[59]

Access to opportunity

Transportation affordability is a central issue, but just as critical of an issue is *access*—can people get to the many and diverse places they need or want to go?

Transportation systems should connect people to *opportunities*, including employment sites, retail centers, medical services, recreational destinations, schools and libraries, social services, friends and family, gathering spots, places of worship, and entertainment sites. When access is limited, people may find fewer jobs within reach, their retail options may be more limited and expensive, and they might incur greater expense, both in time and money, to access important destinations.

A transportation system looking to improve equitable outcomes must provide greater access to opportunities for low-income households and members of historically marginalized groups. Equity advocates should be thinking in terms of an overall strategy to address transportation equity in which road pricing plays a role. This can range from the direct benefits of pricing, such as faster bus service, to a better mix of transportation choices funded by the potential revenue from road pricing.

Bus users, for example, are some of the biggest winners from congestion pricing in London and Stockholm. Both cities increased the number of buses in advance of implementing cordon or area charges, increasing accessibility. In central London, bus wait times fell by 30% and delays due to traffic congestion fell by 60%.[60] In New York City, a recent study suggests that congestion charging would provide significant time savings to riders of express buses.[61]

Los Angeles uses revenues from its Metro ExpressLanes to fund a range of improvements, including express transit routes, commuter routes, and walking and bicycling projects, all targeted within three miles of the two existing ExpressLanes.[62] The transit routes improve access for residents of the corridor to reach major employment centers. Los Angeles is also considering the use of revenues from the ExpressLanes to help convert lanes on additional freeways to express operations.

Twin Cities. Minnesota state legislation requires that one-half of "remaining" money generated through tolled express lanes be dedicated to the expansion and improvement of bus transit services in the related corridors.[63]

Pierce County Transit and Lyft. Ride-hailing services like Lyft and Uber have increasingly started to work with transit agencies to help improve access to and from transit, often referred to as "first- and last-mile solutions." These services could help provide connections to residents of suburban and rural areas who would otherwise have the hardest time accessing public transportation.

Washington's Pierce College Puyallup, for example, partnered with Pierce County Transit and Lyft to bridge first-last miles gaps to both bus and light rail stations. In addition, the project will also provide students at Pierce College Puyallup a grant-funded Lyft ride home from some locations near campus in the evening after transit services have ended. This program demonstrates that there is no one-sized fits all solution, and that creativity is needed to serve a wider range of people that would otherwise be largely car-dependent.[64]

Lyft also recently started working directly through community groups to give qualifying members free-rides.[65] This could help in areas not well served by public transit.

Making sure tolled facilities are accessible

Road pricing programs often assume that people will have the ability to use the priced roads or the transit options, discounts etc. Electronic tolling and transit cards make it efficient to use those facilities, but only if one has the resources to participate. Such systems often depend on:

- *Transponders* that automate the toll collection process;
- *Credit cards* that may be tied to transponders or accounts;
- *Languages* required to understand instructions;
- *Bank accounts* that may be tied to transponders or accounts; and
- *Smartphones* that run the apps used for some services (such as shared rides).

Since many low-income households may not have bank accounts or credit cards, be able to afford the initial deposit on a transponder, or be sufficiently fluent in English, they might not be able to take advantage of either the newly tolled facility or many of the alternatives. It is critical to overcome these barriers (the Los Angeles program described in this report is an example).

All of the examples in this chapter raise the question as to *where and how* the decisions about road pricing programs are made. The answer varies by locale; a good guide to the types of decisions and requirements that apply to different governmental agencies and stakeholders may be found in the National Cooperative Highway Research Program's *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox*.[66]

Community health

Transportation systems too often impose negative health impacts on vulnerable communities. Major roads and freeways are often built in or adjacent to such communities, subjecting them to higher levels of air pollution and the various serious health problems that accompany it. Projects that end up increasing road traffic in vulnerable communities also increase safety hazards for pedestrians and bicyclists. Chronic disinvestment in these communities often means that likely destinations are not within safe walking distance, limiting physical activity and increasing emissions, contributing further to negative health outcomes.

Healthy communities are a clear and major equity goal. Road pricing should reduce overall driving and result in improved air quality when effectively implemented. A clear-cut example of improvements in air quality comes from Sweden, where a Johns Hopkins study found that improvements in air quality in the central zone due to reduced traffic led to a 50% decrease in asthma attacks among young children.[67]

Funding can go to clean air buses as well as improved conditions for walking and bicycling. Even though community health benefits are likely, it is important to analyze the potential (and actual) diversion of traffic so that vulnerable communities do not see an increase in traffic.

Los Angeles: Clean Air Buses. Purchased in part with $1.4 million from the Metro ExpressLanes program, Foothill Transit recently acquired two double-decker electric buses. The buses can hold up to 80 passengers and provide a quieter, less bumpy ride than traditional articulated buses, while reducing GHG emissions by 80-90% compared to diesel buses.[68] L.A. has also invested revenues in bicycle and pedestrian infrastructure along the corridor.

King County, Washington: Prioritizing clean air buses for vulnerable communities. In March 2017, King County Metro released a feasibility plan to achieve a zero-emission fleet. The goals included climate and racial and social equity objectives. The report adopted a methodology for identifying the areas with the greatest vulnerabilities based on air quality, health, and social conditions (such as demographics, linguistic isolation, and rates of high school completion). The analysis revealed where zero-emission bus routes would have the greatest positive impact on equity. The results were meant to both inform near-term decisions and provide an analytic framework that could be used in the future. Since most pricing programs will direct revenues to expanding and potentially cleaning the bus fleet, this methodology provides a strong example of how to maximize equity and health benefits.[69]

CHAPTER 4

Putting It All Together

Equitable pricing can support equitable transportation

This report has outlined many possibilities to work with impacted and vulnerable communities to design systems that make transportation more fast, affordable, and healthy than it is today. So why do road pricing strategies, especially congestion pricing in downtowns, often fail based on concerns about social equity? There are at least three reasons.

First, is the lack of an exemplar for road pricing. That is why our implementation strategies do not highlight just one region, and why the report pulls ideas from places that are implementing pricing as well as some which are considering doing so.

Second, there are usually many layers of decision-making and approvals that are needed to implement pricing strategies, making defeat possible at the local, regional, and state level.

The third is suggested by Professor Michael Manville of UCLA's Department of Urban Planning: that we have a strong human tendency to strictly scrutinize the potential implication of changes.[70] Changes are noticeable and they require an act of commission. The status quo of free roads, with all of their inefficiencies, congestion, and pollution that disproportionately harms vulnerable communities, persist with little or no scrutiny—that's the privilege of the status quo. The failure to act (omission) carries less weight than acts of commission. As a result, people strictly scrutinize harms that arise from changing the status quo, and downplay or overlook harms that arise from the status quo itself.

To counter that, Professor Manville posits a future where all freeways are priced:

> Maybe the best way to think about congestion pricing's fairness is to imagine a world where the roads are already priced—a world where we allocate road space like we already allocate water or electricity or other infrastructure. In this world, drivers would pay for the valuable public land they used; congestion would be far lower and so would pollution; transit would run faster; and governments would use some of the toll revenue to mitigate congestion pricing's burden on low-income drivers.
>
> Now imagine a proposal to make all roads free. Free roads would let the poor and rich drive free, but the rich drive much more than the poor. Congestion would rise, buses would slow, and pollution would increase. The pollution would fall most heavily on the poor, but without tolls, there would be no revenue to redistribute and compensate the people it fell on. Making the roads free would undermine efficiency (the transportation

system would work less well) and equity (free roads would harm the disadvantaged and reward the more advantaged).

In the real world, this unequal proposal is not a proposal at all. It's the status quo, and its normalcy prevents us from thinking about its fairness. It is appropriate to worry that priced roads might harm the poor while helping the rich. But we should also worry that free roads do the same, and think about which form of unfairness we are best able to mitigate. People who worry about harms to the poor when roads are priced, and not when roads are free, may be worried more about the prices than the poor.[71]

We don't live in that future where equitable road pricing is widespread. But it is not far-fetched. In both London and Stockholm, pricing was not popular when first proposed. Once people experienced the benefits, including transit riders who got expanded service and faster rides, pricing became an accepted—even popular—component of the transportation system.

While road pricing is not a panacea, it can be an important piece of the transportation equity puzzle. If we listen to community voices, engage community expertise, and work collaboratively to develop more affordable, accessible, and healthy transportation options, road pricing can contribute to a more just, sustainable world where everyone has the opportunity to thrive.

Pricing and investment strategies: equity impacts

We can sum up the general impacts on equity of a variety of pricing and investment strategies. The following two charts should be useful as a means of understanding the relative impacts of different alternatives.

PRICING STRATEGY EQUITY MATRIX	
PRICING STRATEGY	***EQUITY IMPACTS***
24 hour **Flat-rate pricing**	Likely to be most regressive strategy, charging low-income drivers who often don't commute at peak commute hours. Least efficient at reducing congestion. Used on many tolled facilities.
Dynamic pricing varies with time or congestion	Efficient charging system but may be regressive (though likely less regressive than gas and sales taxes).
Dynamic pricing with some means-based discounts or rebates	Less regressive due to discounts.
Means-based pricing with targeted caps and/or exemptions	System designed specifically not to be regressive. Some loss of efficiency as plentiful discounts, caps and exemptions may limit the congestion and climate benefits.

REVENUE INVESTMENT EQUITY MATRIX	
INVESTMENT STRATEGY	***EQUITY IMPACTS***
Road expansion	Does not add more affordable options.
Mix of road expansion and transit	Some drivers can shift to new, more affordable modes. Transit users also benefit.
Transit, walking, and bike infrastructure with targeted carpool, vanpool, and new mobility options where needed	Allows greater shift to more affordable and sustainable modes.
Transit, walking, and bike infrastructure with an **intensive focus on vulnerable communities**	Significant expansion of commute options and a reduction in user costs (if fares are reduced on transit and other mobility options).

Five steps to equitable outcomes: TransForm's companion toolkit

While this report is the "why," the toolkit that accompanies this report is the "how." It lays out a roadmap of five primary steps to help ensure that road pricing studies improve the equitability of the transportation system.

1. Identify Who, What, and Where
2. Choose Equity Outcome and Performance Indicators
3. Determine Benefits and Burdens
4. Devise Programs to Advance Transportation Equity
5. Provide Accountable Feedback and Evaluation

With several cities and regions considering progressive programs, this is an important time for policymakers and equity advocates engage in road pricing studies to see if we can use road pricing as tool to advance racial and social equity. The toolkit lays out a process for fulfilling this vision.

Notes

[1] Martin Wachs, in his history of transportation planning in Los Angeles, notes that L.A. had for decades planned a relatively balanced set of modal investments, with transit an important component, but the U.S. Federal Interstate Highway Act led to most local and state transportation funds going to freeway building. Martin Wachs, "The Evolution of Transportation Policy in Los Angeles: Images of Past Policy and Future Prospects," in Allen J. Scott and Edward Soja, eds., *The City: Los Angeles and Urban Theory at the End of the Twentieth Century* (Berkeley and Los Angeles: University of California Press, 1996), 106-159.

[2] Mikayla Bouchard, "Transportation Emerges as Crucial to Escaping Poverty," *New York Times* (7 May 2015), p. A3, www.nytimes.com/2015/05/07/upshot/transportation-emerges-as-crucial-to-escaping-poverty.html. Accessed on 2 October 2018. This article is a useful summation of the actual study, which is otherwise quite technical.

[3] American Public Health Association, "Improving Health Through Transportation and Land-Use Policies," policy statement (10 November 2009), www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/31/08/21/improving-health-through-transportation-and-land-use-policies. Accessed 18 October 2018.

[4] Pew Charitable Trusts, "Household Expenditures and Income," chartbook (March 2016), 7, www.pewtrusts.org/-/media/assets/2016/03/household_expenditures_and_income.pdf.

[5] David Schrank, Bill Eisele, Tim Lomax, and Jim Bak, *2015 Annual Urban Mobility Scorecard* (College Station, TX: Texas A&M Transportation Institute & INRIX, August 2015), static.tti.tamu.edu/tti.tamu.edu/documents/mobility-scorecard-2015.pdf.

[6] Susan Handy, "Increasing Highway Capacity Unlikely to Relieve Traffic Congestion," National Center for Sustainable Transportation Policy Brief (October 2015), http://www.dot.ca.gov/newtech/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf

[7] Joe Cortright, "Reducing Congestion: Katy Didn't," CityObservatory (16 December 2015), cityobservatory.org/reducing-congestion-katy-didnt. Accessed 26 September 2018.

[8] Geneviève Boisjoly, Emily Grisé and Ahmed El-Geneidy, "Service Matters: Examining Ridership Trends in 25 North American Cities Over Time," guest blog, *TransitCenter* (29 May 2018), transitcenter.org/2018/05/29/service-matters.

[9] Umair Irfan, "Cars and trucks are America's biggest climate problem for the 2nd year in a row," *Vox* (14 Jan 2018), www.vox.com/energy-and-environment/2018/1/11/16874696/greenhouse-gas-co2-target-2017-paris-trump. Accessed 2 October 2018.

[11] en.wikipedia.org/wiki/List_of_toll_roads_in_the_United_States.

[11] Mobility Pricing Independent Commission, Metro Vancouver Mobility Pricing Study (Vancouver, BC, May 2018), www.translink.ca/~/media/Documents/plans_and_projects/regional_transportation_strategy/Research/Metro_Vancouver_Road_Pricing_Research_Study_Report.ashx

[12] www.sfcta.org/mobility-access-and-pricing-study-about. Accessed on 2 October 2018. And Bruce Schaller, "New York City's Congestion Pricing Experience and Implications for Road Pricing Acceptance in the United States" *Transport Policy 17* (August 2010), www.nyc.gov/html/dot/downloads/pdf/schaller_paper_2010trb.pdf. It should be noted that New York is indeed moving closer to congestion pricing just in 2019: Winnie Hu, "Your Taxi or Uber Ride in Manhattan Will Soon Cost More," *New York Times* (31 January 2019), www.nytimes.com/2019/01/31/nyregion/uber-taxi-lyft-fee.html. Accessed on 14 February 2019.

[13] John Rennie Short, "Are Traffic-Clogged US Cities Ready for Congestion Pricing?" *The Conversation* (7 February 2018), theconversation.com/are-traffic-clogged-us-cities-ready-for-congestion-pricing-90814. Accessed on 27 August 2018.

[14] A 2008 study gave 275 household in Seattle a cash sum to spend on driving trips. They were then charged tolls linked to traffic congestion levels, and at the end of the study they could keep money they did not spend. The results showed that pricing affected behavior: travelers altered their schedules, took different routes or collapsed multiple trips into single journeys, suggesting that if these tolls were implemented regionally, they'd dramatically reduce congestion at peak time and increased average travel speeds (though the tolls would have to be quite high in some places to achieve that result). Eric Pryne, "Wide use of tolls could unclog roads, Seattle study says," *Seattle Times* (24 April 2008), www.seattletimes.com/seattle-news/wide-use-of-tolls-could-unclog-roads-seattle-study-says/. Accessed on 2 October 2018.

[15] Regressive in their incidence, or how people pay. It is feasible to shape a measure that includes significant funds for local transit and other expenditure that can create an overall benefit for vulnerable communities.

[16] For a more detailed discussion, see David Levinson, "Equity Effects of Road Pricing: A Review," *Transport Reviews* (University of Minnesota: Nexus Research Group, Working Papers 30, 2010).

[17] Booz Allen Hamilton and Seattle Department of Transportation, *Seattle Variable Tolling Study* (May 2009), www.seattle.gov/Documents/Departments/SDOT/About/DocumentLibrary/Reports/FINALTollingStudyreportrevised6.25.10.pdf. An excellent chart comparing the cities may be found on pages 75-80.

[18] Jonas Eliasson, "The Stockholm congestion charges: an overview," CTS Working Paper (Stockholm: Center for Transport Studies, 2014), www.transportportal.se/swopec/cts2014-7.pdf

[19] Mark Burris, Negin Alemazkoor, Rob Benz, and Nicholas Wood, "The Impact of HOT Lanes on Carpools," *Research in Transportation Economics 44* (2014), ceprofs.civil.tamu.edu/mburris/Papers/The%20Impact%20of%20HOT%20Lanes%20on%20carpools.pdf.

[20] Gordon R. Friedman, "$5.3 billion transportation upgrades plan passes Oregon House," *The Oregonian/Oregon Live* (5 July 2017), www.oregonlive.com/politics/2017/07/53_billion_plan_to_upgrade_ore.html. Accessed on 11 March 2019.

[21] Oregon Department of Transportation, "Congestion (Value) Pricing," *Oregon.gov,* www.oregon.gov/ODOT/Pages/VP-Feasibility-Analysis.aspx. Accessed on 11 March 2019.

[22] Oregon Department of Transportation, "Get Involved: Portland Metro Area Value Pricing Policy Advisory Committee," *Oregon.gov,* www.oregon.gov/ODOT/Get-Involved/Pages/Value-Pricing-Committee.aspx. Accessed on 11 March 2019.

[23] https://www.portlandoregon.gov/cbo/article/671511

[24] Lynn Peterson, letter to Tammy Baney, Oregon Transportation Commission, on behalf of Metro Council (20 February 2019), www.documentcloud.org/documents/5749663-Metro-letter-to-OTC.html.

[25] http://cityobservatory.org/is-oregons-road-tax-limit-a-paper-tiger/

[26] Kittleson & Associates, "San Mateo US 101 Express Lane Feasibility Study," prepared for the Metropolitan Transportation Commission (Oakland, California, October 2014). Charts from the document are viewable in this blog post: www.transformca.org/transform-blog-post/mtc-analysis-confirms-optimized-hot-best-choice-highway-101.

[27] Chris Lepe, "Proposed Express Lanes Won't Fix Traffic on 101….What Will?" TransForm Blog (20 December 2017), www.transformca.org/transform-blog-post/proposed-express-lanes-wont-fix-traffic.

[28] San Mateo County Transit District, *Dumbarton Transportation Corridor Study,* Final Report (November 2017), p. 12-2.

[29] San Francisco County Transportation Authority, "Addressing Congestion on San Francisco's Freeways," Fact sheet (November 2017), www.sfcta.org/sites/default/files/content/Planning/FCMS/FreewayCorridorMgt_fact_sheet_11.21.17c.pdf.

[30] The two regional agencies did a call for transformative projects. Over 500 were submitted and 12 were chosen. These will be analyzed and considered for inclusion in the Regional Transportation Plan. The agencies selected an Optimized Highway Network that converts general purpose and HOV lanes into an uninterrupted regional express network, put forth by TransForm and SPUR. https://mtc.ca.gov/whats-happening/news/big-bold-visions-dozen-mtc-and-abag-announce-transformative-project-finalists

[31] Fix NYC, *Fix NYC Advisory Panel Report* (January 2018).

[32] Hannah Frishberg, "Congestion pricing in NYC, explained," *Curbed New York* (14 March 2018), ny.curbed.com/2018/3/14/17117204/new-york-congestion-pricing-cuomo-subway-uber. Accessed on 4 October 2018.

[33] Metropolitan Transportation Sustainability Advisory Workgroup, "Metropolitan Transportation Sustainability Advisory Workgroup Report" (New York, December 2018), pfnyc.org/wp-content/uploads/2018/12/2018-12-Metropolitan-Transportation-Sustainability-Advisory-Workgroup-Report.pdf.

[34] Ameena Walker, "Cuomo details plans for MTA, congestion pricing, and more in State of the State," *Curbed New York* (16 January 2019), ny.curbed.com/2019/1/16/18184024/new-york-andrew-cuomo-state-of-the-state-mta-congestion-pricing-marijuana. Accessed on 23 January 2019.

[35] Adopted from Move NY's infographic at http://iheartmoveny.org/. Accessed on 4 October 2018.

[36] Seattle Department of Transportation, Transportation Equity Program, www.seattle.gov/transportation/projects-and-programs/programs/transportation-equity-program. Accessed on 30 August 2018.

[37] See, for example, Brian Taylor, "How Fair is Road Pricing? Evaluating Equity in Transportation Pricing and Finance," (National Transportation Policy Center, 29 September 2010), and Committee on Equity Implications of Evolving Transportation Finance Mechanisms, "Equity of Evolving Transportation Finance Mechanisms," Special Report 303 (Washington, DC: Transportation Research Board, 2011).

[38] National Cooperative Highway Research Program (NCHRP), *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox* (Washington, DC: National Academies Press, 2018), and International Association of Public Participation," IAP2 Spectrum of Public Participation" (2007).

[39] Mobility Pricing Independent Commission, "Metro Vancouver Mobility Pricing Study: Findings and Recommendations for an Effective, Farsighted, and Fair Mobility Pricing Policy," (May 2018), www.itstimemv.ca/uploads/1/0/6/9/106921821/mpic_full_report_-_final.pdf.

[40] Metro Vancouver Mobility Pricing Study. The Advisory Panel was selected to be a representative group of Metro Vancouver residents from different cultural and employment backgrounds, ages, municipalities, and users of different transportation modes. In addition, a series of outreach meetings were held with local First Nations and with the Union of BC Indian Chiefs.

[41] New York City DOT, "The Best Person for the Job: Recruiting a Diverse Talent Pool" (2 October 2018), nacto.org/wp-content/uploads/2018/07/Joe-Jarrin.pdf

[42] New York City DOT, "Beyond the Workshop: NYC DOT Street Ambassadors," presentation to the WTS Annual Conference, 18 May 2017.

[43] Hana Creger, Joel Espino, and Alvaro S. Sanchez, *Mobility Equity Framework: How to Make Transportation Work for People* (Oakland, California: Greenlining Institute, undated), 12. Lower-income households both spend a larger share of their income on transportation expenses and saw that share increase from 9% in 2009 to nearly 16% in 2014. Pew Charitable Trusts, "Household Expenditures and Income," chartbook (March 2016), 7.

[44] PRR, Inc., *Equity and Transportation Funding: Outreach Summary*, prepared for the Transportation Futures Task Force (December 2015), www.thefuturestaskforce.org/wp-content/uploads/2016/02/TFTF_Outreach-Summary-Report_02-05-16-FINAL.pdf.

[45] www.metroexpresslanes.net/en/about/plans_lowincome.shtml

[46] www.metroexpresslanes.net/en/about/transit.shtml

[47] https://tfl.gov.uk/modes/driving/congestion-charge/discounts-and-exemptions

[48] Transport for London, "Are You Eligible for Congestion Charging NHS Reimbursement?" pamphlet (May 2014), content.tfl.gov.uk/tfl-cc-nhs-leaflet.pdf.

[49] Georgina Santos, Kenneth Button and Roger G. Noll, "London Congestion Charging," *Brookings-Wharton Papers on Urban Affairs* (2008), 177-234, www.jstor.org/stable/25609551.

[50] "Move NY has a solution to Get NY Moving again," http://iheartmoveny.org/. Accessed on 10 October 2018.

[51] Treasure Island Mobility Management Agency, "Resolution Approving the Treasure Island Mobility Management Study Toll Policy Recommendations," Board Resolution No. 17-03 (2017), www.sfcta.org/sites/default/files/R17-03%20Toll%20Policy%20Recommendations.pdf.

[52] San Francisco County Transportation Authority, "Treasure Island Transportation Plan | Key Features," www.sfcta.org/TIMMA_key_features. Accessed on 18 October 2018.

[53] Lauren Glassberg, "Fair Fares: New York City budget includes $106 million for discount MetroCard program," *WABC-7 News* (12 June 2018), abc7ny.com/politics/fair-fares-nyc-budget-includes-discount-metrocard-program/3594517. Accessed on 2 October 2018

[54] www.seattle.gov/transit/orca-lift and www.seattle.gov/transit/orca-opportunity. Accessed on 2 October 2018.

[55] www.seattle.gov/transportation/projects-and-programs/programs/transportation-equity-program. Accessed on 2 October 2018.

[56] www.divvybikes.com/pricing/d4e.

[57] MTC and TransForm," Ford Gobike Is a Model for Equitable Bike Share Access in the US, Thanks to Community Engagement," press release (20 September 2018), www.transformca.org/landing-page/ford-gobike-model-equitable-bike-share-access-us-thanks-community-engagement. Accessed on 19 October 2018.

[58] "Biketown for All," www.biketownpdx.com/pricing/biketown-for-all. Accessed on 16 November 2018.

[59] Details at www.mobibikes.ca/en/community-pass. Accessed on 26 November 2018.

[60] Transport for London, "Congestion Charging Central London—Impacts Monitoring: Second Annual Report," (April 2004), 39. http://content.tfl.gov.uk/impacts-monitoring-report-2.pdf

[61] Gersh Kuntzman, "Congestion Pricing Would Cut Weekly Express Bus Commute Times By Hours: Report," *StreetsblogNYC* (29 October 2018), nyc.streetsblog.org/2018/10/29/congestion-pricing-would-cut-express-bus-commute-times-by-hours-report/. Accessed on 26 November 2018.

[62] Los Angeles County Metropolitan Transportation Agency (LACMTA), Metro ExpressLanes "Net Toll Revenue Reinvestment Program: Approved Project Locations," map (undated), media.metro.net/projects_studies/expresslanes/images/ExpressLanes_Round1-Map_with_Approved_Project_Locations.pdf. Also, LACMTA, "Metro I-110 and I-10 ExpressLanes Net Toll Revenue Reinvestment Program: Recommended Project Locations," map (undated), https://media.metro.net/projects_studies/expresslanes/images/ExpressLanes_Round2-Map_with_Approved_Project_Locations.pdf.

[63] Gregory L. Newmark, "HOT for Transit? Transit's Experience of High-Occupancy Toll Lanes," *Journal of Public Transportation 17,* No. 3 (2014), p. 108.

[64] "How Lyft Works With Public Transit Agencies Across the Country to Eliminate Transportation Barriers," *Lyft Blog* (6 June 2018), blog.lyft.com/posts/2018/6/6/how-lyft-works-with-public-transit-agencies-across-the-country-to-eliminate-transportation-barriers. Accessed on 2 October 2018.

[65] Dara Kerr, "Lyft pledges $1.5M to give free rides to low-income people," *CNET* (2 May 2018), www.cnet.com/news/lyft-pledges-1-5m-to-give-free-rides-to-low-income-people/. Accessed on 2 October 2018.

[66] NCHRP (2018). See in particular Steps 2 and 3 as well as the Reference Tables on pages 339-349 of the document.

[67] Patrick Ercolano, "Study: Stockholm traffic tax helps kids in Sweden breathe easier," *HUB* (2 March 2017), hub.jhu.edu/2017/03/02/health-effects-for-children-sweden-traffic-tax/. Accessed on 26 November 2018.

[68] Claire Tran, "Electric Double-Decker Buses Are Coming to L.A.," *CityLab* (12 July 2018), www.citylab.com/transportation/2018/07/electric-double-decker-buses-are-coming-to-la/565016. Accessed on 2 October 2018.

[69] King County Metro, *Feasibility of Achieving a Carbon-Neutral or Zero-Emission Fleet* (Seattle, March 2017), kingcounty.gov/~/media/elected/executive/constantine/news/documents/Zero_Emission_Fleet.ashx?.

[70] Michael Manville, "Is Congestion Pricing Fair to the Poor," Medium, (14 August 2017), medium.com/100-hours/is-congestion-pricing-fair-to-the-poor-62e281924ca3.

[71] Manville (2017).

TransForm

Our communities. Our transportation. Our future.

A Companion to the *Pricing Roads, Advancing Equity* Report

TOOLKIT

PRICING **ROADS,** ADVANCING **EQUITY**

EQUITY TOOLKIT

Contents

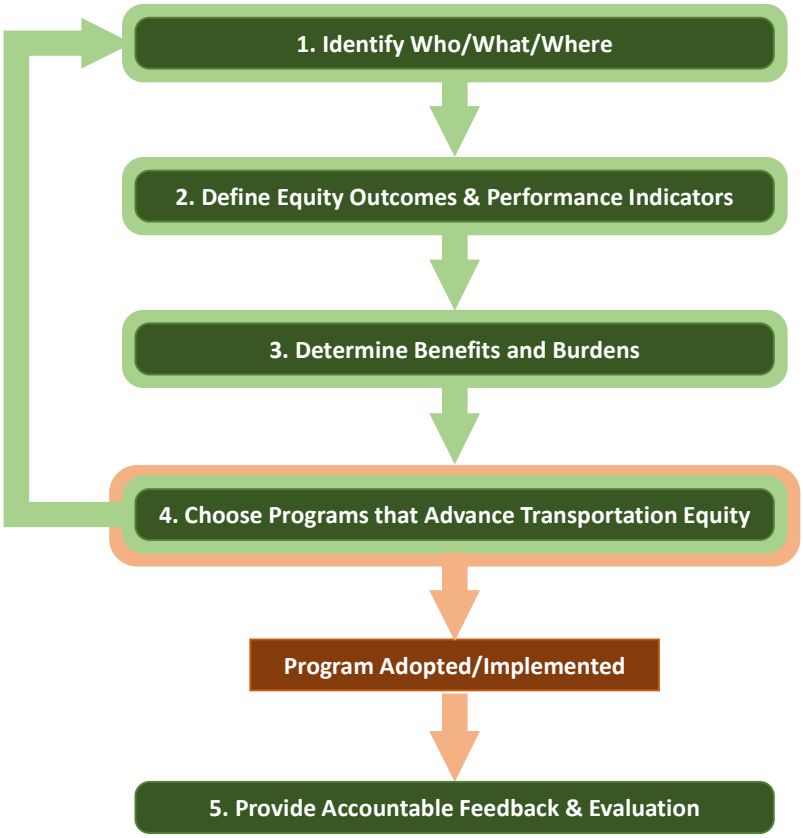
EQUITY TOOLKIT

Introduction

Five Steps Toward Equitable Outcomes

TransForm's report, *Pricing Roads, Advancing Equity,* suggests that road pricing strategies have the potential to produce notable benefits for vulnerable communities by addressing historic inequities (such as slow, infrequent, and unreliable bus transit). For these benefits to happen it is important to develop a clear sense of what a more equitable system might look like and then understand how a road pricing project can help get our communities closer to that system.

This toolkit is designed to help both equity advocates and decision-makers better understand how to effectively engage at key steps in the planning process. The toolkit is built on five *iterative* steps that form a conceptual framework, as shown in the graphic below.



As a pricing and investment strategy advances, it will be necessary to revisit earlier steps. For example, once a comprehensive strategy emerges from Step #4, it will be necessary to test it against the three earlier steps with an eye to further *refining* and *optimizing* the program along key indicators. In some cases, especially with cordon or area pricing proposals, as many as 5-10 iterations may be required to arrive at a solution worth implementing.[1] For HOT lanes and similar projects, fewer iterations are typical.

Strong participation and deep engagement from the most vulnerable communities is critical throughout the process, from inception through implementation and beyond. That's why this toolkit does not have a stand-alone step for "public participation." Indeed, the focus of the toolkit is to support equity advocates and decision-makers in achieving full participation at each step. Equity advocates can help planners reach vulnerable communities by helping develop the Public Involvement Plan component of the study, which is discussed in greater detail in this toolkit's companion report. Equity advocates should ensure that representatives of vulnerable communities are incorporated at every phase of a road pricing project.

An excellent guidebook and toolbox for planners that are leading road pricing studies is the National Cooperative Highway Research Program's (NCHRP), *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes.* With an intended audience of practitioners such as agency staff and consultants, the document is long and can be quite technical. Yet it has many excellent examples of where a particular tool, analysis, or strategy has been used to help advance equity.[2]

NCHRP's Tool #4, "Preparing, Implementing, and Assessing a Public Involvement Plan," for example, has a useful table with strategies that can address challenges to participation. While many of these strategies may be obvious to community members, they may not be as obvious to planners and other public officials. It can very useful to delineate these strategies in chart form to help create a common template for advocates and project planners to walk through ideas for the Public Involvement Plan.

Since we encourage equity advocates who dive deep into planning to reference the NCHRP guide, it is important to know how TransForm's five steps line up with the steps they propose. The following chart shows TransForm's five steps and how they correspond with steps in the NCHRP guidebook.

TransForm's Five Steps		NCHRP Planning Steps
1. Identify Who, What, and Where	➔	1. Frame the Project 2. Identify the Applicable Requirements Governing Decisions 3. Recognize the Relevant Decision-Makers and Stakeholders

2. Define Equity Outcome and Performance Indicators	➔	4. Scope Approach to Measure and Address Impacts
3. Determine Benefits and Burdens	➔	5. Conduct Impact Analysis and Measurement
4. Choose Programs that Advance Transportation Equity	➔	6. Identify and Assess Mitigation Strategies
5. Provide Accountable Feedback and Evaluation	➔	7. Document Results for Decision-Makers and the Public 8. Conduct Post-Implementation Monitoring

For road pricing projects, the agencies leading the studies should consult both TransForm's Toolkit and NCHRP's. The "additional resources" box at the end of each of TransForm's five steps can help with that deeper dive.

Format of the Toolkit

For each of the five steps outlined above, the toolkit has five components:

- Purpose
- Discussion
- Case studies or example (where appropriate)
- Questions to ask
- Additional resources

In addition, a worksheet template for recording your answers to the questions may be downloaded from www.transformca.org/pricing-equity-worksheet.

To make it easier to flip through to a specific component, the toolkit has color-coded text boxes, as follows.

CASE STUDIES	Case studies are displayed on a light blue background.
QUESTIONS TO ASK	Questions to consider asking are listed on a light pink background.
ADDITIONAL RESOURCES	Additional resources are described on a light green background.

EQUITY TOOLKIT

Step #1

Identify Who, What, and Where

Purpose

The early stages of a pricing equity study are where several key decisions are made, namely:

***Who*?**	The *populations* that need to be considered from an equity perspective.
***What*?**	The type and nature of *pricing* to be considered, along with any viable alternatives.
***Where*?**	The *geographic reach* of the study area, including key destinations accessed by vulnerable populations.

In planning terms, this stage is where the study's *scope* is developed.

Discussion

Who: Populations to be Studied

Any equity study is required to look at the impacts of major transportation projects on vulnerable populations—low-income communities and minorities. Under U.S. federal guidelines, *minority* populations include Black, Hispanic or Latino of any race, Asian American, American Indian and Alaskan Native, Native Hawaiian, and Other Pacific Islanders. It also includes individuals with limited English proficiency of any race. Low-income populations are any whose household incomes are at or below Federal poverty guidelines, though advocates may seek higher poverty thresholds for purposes of a pricing study since Federal thresholds are so low.

From an equity perspective, it is often important to consider other vulnerable populations such as seniors, persons with disabilities, immigrants and refugees, local small businesses, and even services like non-profit meal delivery services.

Federal policies also outline the fundamental principles of Environmental Justice:[3]

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

A key first step is to identify the data sources that can give you the demographic characteristics of the populations in the study area, and to parse this demographic data at different geographic scales. To start with, check if the regional planning agencies, county, or city may already have produced maps and datasets identifying communities of concern and travel patterns. Another first stop will be census data.

These sources all have limitations. They may be supplemented with a survey of key transportation destinations, such as schools, hospitals, and senior centers. In addition, it is critical to tap into local knowledge through interviews with community leaders, focus groups with residents, and possibly surveys to understand community concerns and travel patterns.

One of the key issues is what minimum population size merits an analysis of impacts. It is often typical, for example, for agencies to focus on census block groups (all urbanized regions in the U.S. are divided into these units) in which at least 50% of residents are low-income or minority. In areas that have a large percentage of minority residents, the 50% threshold may not be as useful, so agencies can use a "meaningfully greater" threshold to identify areas that have greater concentrations relative to the surrounding communities or region. In some cases, it might be useful to create an index that assigns points based on several criteria in order to select the zones that score highest on the combined criteria, such as was done in Dallas/Forth Worth.[4]

The population frame of reference can have a notable impact on the predicted outcomes. For example, the standard practice for estimating *regressivity* in road pricing projects looks at the toll's potential impact only on households with workers who would drive on those tolled facilities. One study made this estimation for the Puget Sound region of Washington State and found the toll to be quite regressive. If the study looked at all commuters (e.g. transit riders), not just those who paid the toll, it was less regressive. When the analysis was extended to the whole population, whether or not they commuted, regressivity fell even further.[5]

None of these levels of analysis is right or wrong by itself. Rather, it depends on the question you are trying to answer. If you want to study discount or exemption programs—how much they would cost and how they might be structured—then you need to focus on likely users of the tolled facility or zone. If you are trying to understand whether pricing would be less regressive than other funding mechanisms like sales or property taxes that are distributed across the whole population, then this broader analysis of the toll's cost is the correct reference.

Any community can have environmental justice concerns, even if they don't meet a given threshold. The NCHRP provides guidance that environmental justice determinations are made based on effects, not population size.[6] Page 95 of that guide also has an excellent table outlining the various methods to get data about populations.

QUESTIONS TO ASK:	
1.1	Are all populations adequately addressed in the study? *Should priority be given to certain populations? Why?*
1.2	Does the way groups are defined capture all relevant people?
1.3	Are the criteria used to identify groups fair and accurate? *For example, does the measure of household income adequately capture the target population? In some metro areas households earning up to twice the Federal poverty level may still be economically disadvantaged and in need of more equitable policies.*

CASE STUDY
Los Angeles[7]

In framing the objectives of its study of the impact of freeway HOT lanes on low-income populations, Metro (the L.A. transportation agency) chose as its primary focus "group equity"—ensuring that low-income commuters as a group are not being disadvantaged by the toll lanes by mitigating any excessive burdens. Additionally, Metro noted its concern for "market equity"—ensuring that shares of benefit are in proportion to the charges paid *because the financial burden of tolls should not exceed the value of travel time savings.*

Metro first described how "low-income" was defined. Then, using four distinct methods to understand the potential range of outcomes, they estimated the likely demand for the ExpressLane corridors by low-income commuters.

The authorizing legislation (SB 1422) explicitly mandated that eligibility requirements for "low-income" toll credits be set at a level no lower than five other referenced state and local programs serving the needs of low-income populations. In response to this requirement, Metro compared existing eligibility thresholds set by these programs and benchmarked other Los Angeles County programs, planned or in use, such as the Metro Rider Relief Program for low-income transit users.

Following this review, Metro set a threshold of $35,000 (in 2009 dollars) based on an annual income for a household of three persons, which was double the federal poverty level.

What: The Proposal and Viable Alternatives

Like with many transportation studies, road pricing studies may begin with a specific "favored" proposal, such as building a toll lane or converting an HOV lane to HOT. The projected *impacts* of this proposal are then compared with the projected impacts of one or more alternatives, as well as a scenario in which no action is taken.

Some highway widening studies may put road expansion into each of the alternatives (except the "no action" scenario). Like with the Portland and Bay Area examples in Chapter 2 of this toolkit's companion report, a road pricing alternative can be used as a way to question the assumption that widening is required, and whether a "no widening" alternative can better meet *both* transportation and equity goals.

In other cases, a large number of mechanisms could be considered from the beginning. This is especially true when congestion pricing is being considered for downtowns and the areas surrounding them. The following table, derived from one created for Seattle's current congestion pricing study, is a useful summation of a number of pricing tools that may be considered.

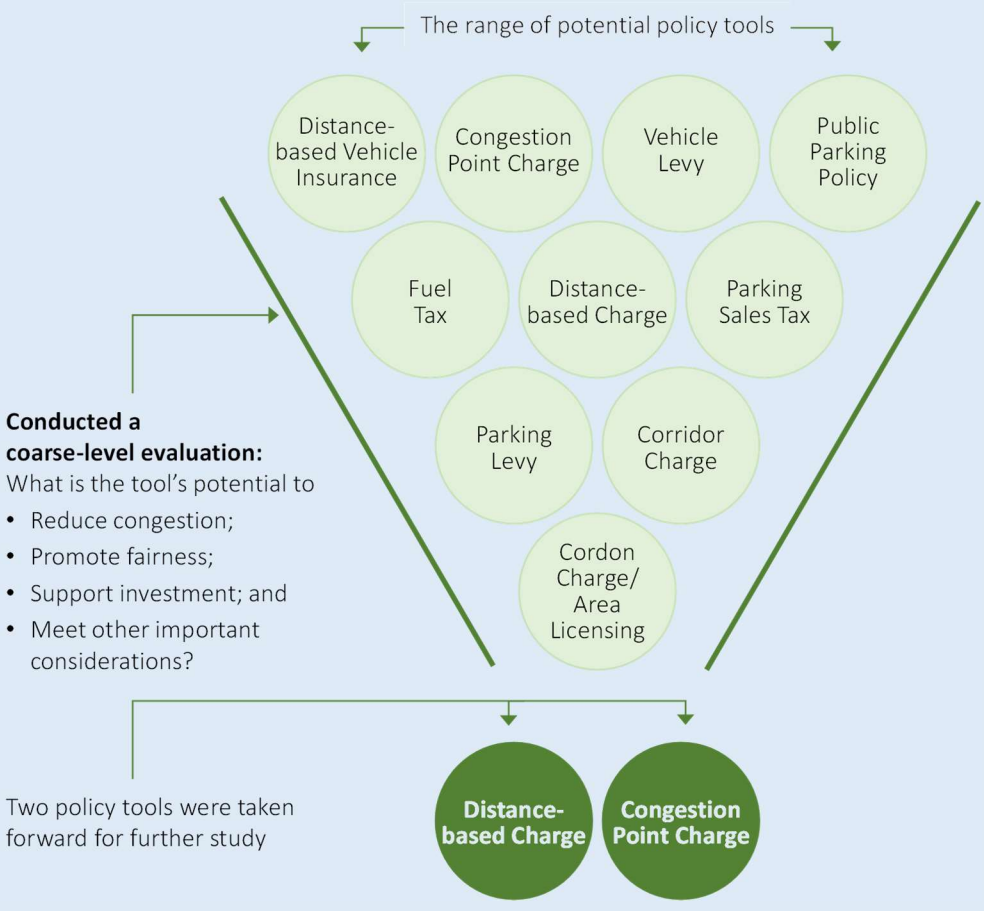
Pricing Tools Summary	
PRICING TOOL:	**DESCRIPTION:**
Cordon Pricing	Charge vehicles crossing the boundary into a cordon pricing zone.
Area Pricing	Charge vehicles crossing the boundary into *as well as driving within* an area pricing zone.
Fleet Pricing	Apply targeted pricing to specific vehicle types entering a zone, such as ride-hailing fleets or commercial vehicles.
Road User Charge (RUC)	Restrict access to a zone to vehicles enrolled in an RUC program that replaces fuel taxes with payment per mile traveled.
Arterial Toll Roads	Price entire arterial road(s).
Arterial Express Lanes	Convert or add lanes on arterial roads as tolled lanes, such as by converting bus-only lanes or an existing general-purpose lane.
On-Street Parking Pricing	Vary street parking prices to control demand.
Off-Street Parking Pricing	Apply a fee/tax to off-street parking facilities.
Vehicle Occupancy (HOT)	"High Occupancy Toll" lanes give free or discounted access to vehicles carrying a specified number of people (2 or 3 is typical), while charging a toll to all others.

During the first step, or at least after going through the first three steps, it is possible that the types of pricing to be studied are narrowed down to a manageable number by conducting an initial screening of the impacts and benefits of the options. The most promising options will then be subject to a more detailed analysis.

This is illustrated by the process Vancouver, British Columbia, is employing, as described in the case study below.

CASE STUDY
Vancouver[8]

Vancouver has mounting congestion, continued population growth, and two bridges that are tolled while others are not, leading to concerns about the fairness of the system. While some type of bridge tolling or congestion charging seemed a likely outcome, Vancouver created an Independent Pricing Commission that studied a broad range of alternatives. They first adopted a set of transportation goals that included promoting fairness in transportation costs and impacts. They then evaluated which alternatives, if any, could best achieve their goals. After detailed analysis and community input, they settled on the two potential alternatives that seemed to be the best fit: distance-based charges and congestion point charges (similar in principle to cordon charges).



QUESTIONS TO ASK:	
1.4	Are there any additional pricing strategies which should definitely be considered? *Put another way, does the list of project alternatives include all the options that best serve vulnerable communities? Have representatives of vulnerable communities provided input on measures, strategies, and goals?*
1.5	Do the scope and budget of the planning study allow for a number of iterations so as to maximize the equity outcomes of identified actions?
1.6	Have we identified community priorities from existing studies that may be relevant?

Where: The Geographic Reach of the Study

Road pricing can affect people who might live or work at some distance from the roadway or from downtown pricing zones. It is important at an early stage to set the project boundaries so that vulnerable populations which may be impacted are included within the study area or project scope.

For example, a city considering cordon pricing or a region considering conversion of an HOV lane to HOT will need to have a sense of which drivers will be affected, where they're coming from and going to. While it's not possible for a study to include *every* commuter or traveler that uses the road—some might be passing through from distant cities, for example—it is desirable to include as many as possible. These initial geographies are also important because they help determine who should be the focus of the public engagement plan.

Decisions about the geographic reach of a study should follow a "macro-level" analysis of the potential effects on access to opportunities for vulnerable populations. It should describe the location and function of the project relative to the existing transportation network, the location of vulnerable populations, and the destinations (work, healthcare, religious, educational, retail, and public services) served by the facilities or areas being studied for pricing. The geographic reach may shift or expand once the first rounds of analytical results come in; some openness in redefining boundaries might be useful.

In practice, many studies adopt multiple geographic "levels" of analysis. For example:

- For commute impacts and predicting costs by population, a very large *travelshed* or "extended impact area" may be studied;
- A "direct impact area" is most likely to experience the potential direct impacts (such as noise, emissions, and traffic) from project construction or operation, and would typically be within a short distance of the proposed toll facility or priced zone and likely alternative routes;

- For cordon pricing proposals, the impacts on other issues need to be identified (such as, but not limited to, parking just inside and outside the boundary).

QUESTIONS TO ASK:	
1.7	Are all potentially impacted and vulnerable populations within the project study boundaries?
1.8	Do we know the critical services (such as shopping, medical care, education, and recreation) that are regularly used by the relevant populations? Are these included within the study boundaries? *Examples of such services include shopping, medical care, education, religious, and recreation.*
1.9	What are the growth projections for the city or region and should the planning process be using current population for the study, or projections for a future year?

ADDITIONAL RESOURCES

NCHRP's *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox* has a good introduction (pp. 9-18) to the eight kinds of road tolling or pricing actions that are typically considered, the kinds of impacts these are most likely to generate, and the initial identification of environmental justice issues. The checklists on pp. 366-372 are also useful summations of the important points to be considered in framing an impact study. It does not deal directly, though, with cordon or area pricing.

In addition, Tool #1, "Developing a Socioeconomic Profile and Community Characteristics Inventory for Environmental Justice Assessments," explains how the census can be used, including the kind of metrics available and the data tables that report those variables.

Two other equity toolkits are also worthwhile for the insights they provide. The Race & Social Justice Initiative's *Racial Equity Toolkit* was developed to help implement the vision of the Seattle Race and Social Justice Initiative.[9] Likewise, the Greenlining Institute's *Mobility Equity Framework: How to Make Transportation Work for People* is a guide to creating a more community-centered transportation planning process.[10]

EQUITY TOOLKIT

Step #2

Define Equity Outcome and Performance Indicators

Purpose

Another important part of project planning is defining the primary goals, referred to here as *outcomes*. It is important to then match these outcomes with *indicators*—the measures that we will use to gauge success or failure, and how the program can be evaluated and improved. These more detailed performance indicators help us answer the core question: does this project advance equity?

There are dozens of papers describing different types of equity in relation to congestion pricing.[11] These include overall ideas of fairness, such as by geography, not just those related to vulnerable communities. TransForm recommends a focus on two types: *Process Equity* and *Outcome Equity*.

For *Process Equity,* the key measure is the full participation of vulnerable communities in planning, implementation, and project follow-up. Process Equity is central to the long-term task of making transportation systems more equitable for all peoples, and of addressing *historical inequities* that continue to affect vulnerable communities.

As discussed in *Pricing Roads, Advancing Equity*, TransForm's Outcome Equity framework focuses on three key measures, as shown in the following table.

Type of Equity:	*Key Measures:*
Process Equity	Full Participation
Outcome Equity	Affordability
	Access to Opportunity
	Community Health

Road pricing projects typically pursue goals such as congestion relief, revenue generation, and—for cordon pricing especially—impacts on greenhouse gas emissions and air quality. Social and racial equity concerns have never been at the top of the list in any of the U.S. projects implemented so far, though Seattle's recently-initiated process does prioritize such concerns.

It is important to be clear on outcomes as well as their relative priority, since some equity strategies (such as giving toll exemptions to different groups) may seemingly work against other project goals (such as reducing climate emissions and local air pollution).

This is where it is crucial to have equity advocates at the table and to build strong participation. Proposed outcomes should highlight key social equity objectives. These can then be matched with *performance indicators*—the measures that will be used to gauge success or failure, and how the program can be evaluated and improved (Step 5). These outcomes and indicators should not just be in the mix, they need to be clear and *prioritized*.

It is usually necessary to do *comparative analysis* in order to determine the real impacts of proposed changes in the transportation system. At its simplest, two kinds of comparative analysis are useful. The first compares impacts from the road pricing proposal with what may be expected if road pricing is *not* adopted. The second compares the impacts on vulnerable populations with the impacts on the general population. These projections are often made for when the project is first implemented and for one or more time points in the future (such as in 10 years and/or 25 years).

The following chart depicts these comparative analyses, with arrows showing where the comparisons take place:[12]

These aggregate or "big picture" analyses can help people understand what it would take to achieve certain goals. For example, Vancouver calculated how much low-income, medium-income and high-income households might spend on different kinds of congestion pricing. People in high-income households generally drive more, so were projected to pay more as an absolute dollar figure, but low-income households would pay a larger percentage of their income. Vancouver calculated that, in order to ensure everyone paid the same proportion of their income as the high-income households would, around 20 percent of the net revenues

(between CD $170-345 million annually) would need to be returned to low-income households through rebates, discounts, or other measures. This kind of analysis can be used to compare how equitable—or inequitable—different kinds of road charges are.

These comparative analyses can be useful in highlighting unfair advantages or burdens at the group or "population" level. But, ultimately, it is also important to understand the real impacts—both benefits and burdens—on *individuals* in certain communities. How much will it cost for an individual who has no option but to drive during peak hours? Are reasonable alternatives like transit readily available and useful? What are the alternative routes, or times of day, that low-income travelers might use to avoid the extra costs and how burdensome would the lost time or change in schedule be? Even if the number of such individuals is not large, the tolls may be a real burden for them.

CASE STUDY
Los Angeles[13]

For its I-10 and I-110 ExpressLane pricing study, Metro identified several potential performance measures for considering effects on low-income users, including:

1. Number of low-income commuters [including percentage of Transit Access Program (TAP) users] who sign up for a transponder.
2. Number of peak-period low-income users of HOT lanes (and percentage of overall HOT lane users).
3. Usage of HOT lane credits for low-income drivers (credit redemptions).
4. Mode choice of low-income drivers (carpool versus single-occupant vehicle), compared with mode choice before the project is implemented.
5. Performance of transit service (average speed, trip time, time savings, and trip reliability) in the ExpressLanes corridors during the demonstration period.
6. General purpose lane speeds during the demonstration period.
7. Account balance problems of low-income commuters compared with non-low-income.
8. Share of time savings by low-income ExpressLanes drivers compared with the share of tolls and transponder costs they pay.
9. Trends in trip distance and trip time by low-income commuters compared with non-low-income.
10. Toll revenue investment.

Discussion

In this section we provide a short discussion of each TransForm's four equity outcomes. This is followed by a chart with some sample indicators for each outcome. Note that most of these indicators—such as changes in transit ridership or the percent of toll revenue spent to benefit vulnerable communities—can be predicted ahead of time using models and formulas; they can also serve as indicators to monitor, evaluate, and improve the program.

Full Participation

Process equity is focused on *participation* in the planning and decision-making process. In a road pricing program, process equity will continue to remain important during program implementation and evaluation.

Since low-income groups and communities of color have historically been disenfranchised from full participation, the issue is how to ensure that the views and concerns of these communities, *as community members understand and articulate them*, are fully solicited, valued, and reflected throughout the process, *especially by those making the final decisions on the project*.

A goal of full participation is to increase the level of positive impact and benefits for vulnerable communities.

Full Participation	
CATEGORY	***SAMPLE INDICATORS***
Activities	• Number of meetings and focus groups with vulnerable communities. • Dollar amount and/or percentage of project budget dedicated to equity outreach programs.
Communications	• Share of principal languages spoken in the community into which materials are translated. • Number of ethnic media outlets that receive information and publish articles about the proposal, or are targeted for advertising community meetings.
Organizations	• Staff time dedicated to technical support and funding for Community-Based Organizations (CBOs) to conduct/participate in needs assessment.
Participants	• Number of individual voices that have contributed to the community needs assessment.
Responsiveness	• Number of community-identified priorities that are being implemented as part of the program.

There are several best practices for full participation not noted in these indicators, such as having language translation at meetings, offering child care, and holding some meetings in the evenings and on weekends. This toolkit's companion report has a useful chart in Chapter 3 to show the degrees of participation.

QUESTIONS TO ASK:	
2.1	Where is the planning process on the "Degree of Participation" scale (found in Chapter 3 of this toolkit's companion report)? *Does it need more resources or political support to increase the degree of community empowerment?*
2.2	Are the efforts planned to reach vulnerable populations likely to reach people where they are, or do they expect people to come to planning events?
2.3	Are the comments and priorities of vulnerable communities being actively catalogued? *Are there plans to address these priorities in a clear and transparent way?*
2.4	Have equity outcomes been prioritized in the list of project goals?

Affordability

At the heart of the affordability question is: Will the proposed pricing project make transportation *more expensive* for some members of vulnerable communities, in both time and money? If so, by how much? Are there ways that transportation can become *more affordable* to some or most, for example through additional public transit discounts? Chapter 3 of this toolkit's companion report includes a section on affordability, with some examples of places that are working to directly address affordability as part of their pricing program.

It is especially important to capture the financial impact of *cordon pricing* and fully tolled roadways on vulnerable communities, since there may be no realistic alternative for some low-income travelers but to use those facilities. While it is useful to understand the financial impacts of HOT lanes, most of those highways also have general purpose lanes that are free to use. In surveys of HOT facilities, satisfaction is often similar between lower- and upper-income commuters, as there is widespread appreciation of the choice to avoid congestion for solo drivers, even if lower-income commuters use them less frequently.

The table on the following page illustrates sample indicators for assessing impacts on affordability.

Affordability	
CATEGORY	***SAMPLE INDICATORS***
Discounts	• Discount level on tolls for low-income and other populations. • Discounts on transit fares or other alternatives (subsidized by tolls).
Regressiveness	• Degree to which tolls are regressive, and how much revenue redistribution is needed to make them progressive (or neutral, as was calculated by Vancouver). • Household budget spent on transportation, by income level (total amount and percentage of income). • Change in share of household income spent on transportation and housing, by income category. • Change in generalized cost of transportation (time and money) for those switching mode/route/time of travel.
Participants	• Number of people from vulnerable communities participating in (or eligible to participate in) discounted tolls or transit fares. • Ratio of those who are eligible for equity pricing programs (both for car drivers and for non-driving strategies like discounted transit) to those that have actually signed up.
Subsidies	• Amount of toll revenue invested in transportation subsidies for vulnerable communities (and as a share of total net revenue).
Savings	• Total expected savings from toll and other subsidy programs for vulnerable communities.
Alternatives	• Cost of using transit or other modes instead of driving.

QUESTIONS TO ASK:	
2.5	How will congestion pricing change the travel costs of low-income drivers and non-drivers?
2.6	How do we ensure that members of vulnerable communities have ways to overcome financial barriers to participation, including for the unbanked and for those who may have trouble putting up deposits for transponders or other required technologies?
2.7	Do we have enough data on travel patterns and the potential changes in travel behavior to understand the potential financial impact of the tolls? *Would it be useful to complement that data with focus groups or surveys?*

CASE STUDY Greenlining Institute

In its 2018 *Mobility Equity Framework*,[14] the Greenlining Institute suggests, as a default, households spend no more than 20% of their budgets on transportation.

Access to Opportunity

The purpose of the transportation system is to link people to all kinds of opportunities: jobs, education, health care, and social, recreational, and commercial activities. So the question of how a proposed pricing (or infrastructure) proposal may change *access* to these places is critical. A well-designed pricing strategy should be able to increase access, especially for those who rely on public transit and for drivers who find it worth the expense to use the priced facility or zone.

There are two big areas of concern with regard to access. The first is for drivers from vulnerable communities who may decide to detour, shift modes or travel time, or even choose a different destination to avoid paying a toll or cordon charge. Pricing creates both a time cost (which essentially reduced access), and potentially increased costs for gas and vehicle use. A related issue, discussed in Step #1, is how trip diversion might impact affected roads and communities.

The second concern is whether the mechanics of toll payment restrict opportunity by creating barriers to use (for example, requiring users to front sums of money, such as for transponders or prepaid tolls, or to have credit card or bank accounts to link to their toll accounts).

Access to Opportunity	
CATEGORY	***SAMPLE INDICATORS***
Funding	• Absolute dollar amount invested in transit and mobility options that benefit vulnerable communities including: ➢ New transit routes ➢ Increased frequency ➢ Subsidies for vanpools, new mobility options, etc. • Percent of funds from tolls dedicated to supporting expanded mobility options that benefit vulnerable communities.
Service Quality	• Changes in transit speed, reliability, and quality that directly impact vulnerable communities. • Changes in travel speeds and/or reliability for cars, HOVs, and those paying tolls.
Service Levels	• Number of new transit miles, routes, or transit vehicle levels/frequencies that benefit vulnerable communities.

Transit Use	• Increase in target population's transit ridership attributed to transit investments. • Increase in the number of riders that use discounted fares each year.
Ratios	• Number of people from vulnerable communities paying the toll compared to those that change routes to avoid the toll (this information will require extensive surveys). • Amount of investment in vulnerable communities vs. other communities.
Access	• Change in the number of jobs, services, etc., that people from vulnerable communities can access within a 30, 45, or 60 minute window, by mode.

CASE STUDY Dallas / Fort Worth[15]

The North Central Texas Council of Governments (NCTCOG), the Metropolitan Planning Organization for the Dallas–Fort Worth Metroplex, developed an Environmental Justice Index that rated "Traffic Survey Zones" (TSZs) based on population density, minority population, and low-income population, for use in its Regional Tolling Analysis.

TSZs were ultimately divided into Protected zones—those with significant environmental justice concerns—and Unprotected. Analysis then focused on the impacts to these two zones using measures of accessibility and mobility as follows:

Accessibility:

- Number of jobs accessible within 30 minutes by auto
- Number of jobs accessible within 60 minutes by transit
- Population within 30 minutes to special generators (e.g., universities, regional shopping centers, hospitals)

Mobility:

- Average level of congestion
- Average travel time

QUESTIONS TO ASK:	
2.8	Are key community destinations being analyzed and are any missing?
2.9	What alternative transportation choices (roads, transit, etc.) will be available to those who cannot afford the toll? For those who are likely to drive alternative routes, what is the time penalty? For those shifting to transit or other modes, what time penalties may be involved?
2.10	Are potential benefits being fully considered, such as the potential increase in bus speed, both when the project is implemented and at some future point?

Community Health

Vulnerable communities have historically borne a greater share of the negative health impacts of transportation systems. Freeways were often built through vulnerable communities, imposing higher levels of asthma and other health impacts of air pollution. Unsafe streets mean vulnerable communities also have higher death and injury rates from walking and bicycling.

Pricing strategies can be a way to minimize some of these impacts, by reducing the amount of overall driving taking place, by reducing the need to expand roads and freeways, and by creating revenue streams that can support transit improvements, bicycle and pedestrian infrastructure, and/or clean vehicles (serving the needs of workers as well as families, seniors, children, and those with special needs).

Another important issue to consider is access to health care. Transportation is frequently the top barrier preventing vulnerable residents from accessing medical facilities, especially for chronic and preventive care. This issue can be assessed in several ways including by noting the location of health facilities and whether they are inside or outside of a congestion pricing zone, and determining whether discounts and exemptions are feasible for trips to those destinations. There are also potential benefits of pricing strategies, such as improvements in speed and reliability for emergency vehicles and whether some revenues can be reinvested in shuttles or other modes that connect vulnerable communities to health facilities.

Community Health	
CATEGORY	***SAMPLE INDICATORS***
Infrastructure	• Miles of effective/safe bike lanes and sidewalks added or improved.
Funding	• Absolute dollar amount of funds spent on bike and pedestrian improvements in vulnerable communities. • Percent of toll revenues spent on bike and pedestrian improvements in vulnerable communities. • Absolute dollar amount and percent of toll revenues spent on clean air buses serving vulnerable communities.
Safety	• Change in collisions, death, and injury rates on facilities that receive investment.
Trips	• Change in the number of bicycle and pedestrian trips.
Air Quality	• Number/percentage of new clean air buses, funded as part of the toll investment strategy, in vulnerable communities. • Change in particulate matter or other criteria pollutants in identified impact areas.
Health	• Anticipated health benefits, disease reduction, and improvements in life expectancy (can be predicted using ITHIM or another model).

QUESTIONS TO ASK:	
2.11	Do the main health indicators include the ones that were prioritized by vulnerable communities?
2.12	Is data on health impacts detailed enough to ascertain impacts on residents within a short distance of the tolled facility and/or other impacted roadways?
2.13	What changes in air pollution are expected? *Where do these occur? Who do they affect?*
2.14	What impacts on bicycle and pedestrian safety are projected?
2.15	Will changes resulting from road pricing reduce traffic and bring more community cohesion? *May it further isolate some communities or populations?*

ADDITIONAL RESOURCES

NCHRP's *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox* has several lists that are useful for additional perspective:

- A checklist for understanding the role of quantitative and qualitative performance indicators (pp. 358-359).
- Table 3 (pp. 135-138), "Practical approaches for reaching low-income, minority, and other traditionally underserved populations," presents an agency-level perspective on reaching members of vulnerable populations.

The Greenlining Institute's *Mobility Equity Framework* identifies 12 indicators recommended for equity studies (pp. 11-13).[16]

EQUITY TOOLKIT

Step #3

Determine Benefits and Burdens

Purpose

Once a set of *performance indicators* is adopted, planners will conduct studies to determine the impacts of the proposed alternatives. There is no single approach to determining such impacts; several are discussed later. The analyses that will go into determining benefits and burdens should be tailored to:

- the *scale* of impacts,
- community *interest* in those impacts, and
- the *potential* of those impacts to help or hurt vulnerable populations.

Discussion

From an equity perspective, there are two fundamental ways to think about impacts. The first is whether the indicators are *relative* or *absolute*. The second is the *level of analysis*, whether at the individual, group/population, or geographic scale.

Relative impacts compare vulnerable populations with non-vulnerable ones. For example, one project alternative might result in non-vulnerable populations paying an additional 2% of household income on transportation, but vulnerable populations 5% more. In this case, vulnerable populations would pay a larger share of their household income *relative* to non-vulnerable populations.

Absolute impacts focus on the actual change experienced by individuals and groups; they're used to help maximize the potential benefit of a project on vulnerable communities. At an individual scale, this may involve looking at a set of typical trips taken during the course of the day by different individuals and then predicting the impact on them of pricing strategies and investment alternatives.

At this individual scale it is easier to understand the costs that some low-income commuters may face. These realistic scenarios can help us better understand the impacts of different types of mitigations (such as discounts, caps, and/or exemptions). These illustrative examples and case studies are a vital complement to the indicators that aggregate population data.

Impact analyses may include technical modeling. Technical models simulate future scenarios by predicting how people will choose among different options. For example, a transit ridership model might predict that a faster bus route will attract about 15% more riders; the model would also estimate where these riders come from and the impact of fewer cars on the road.

Technical models are often complex and they typically rely on incomplete or generalized information. Models can be extremely useful, though, for depicting likely reactions to changes in the transportation system and producing numbers that decision-makers (and the broader community of stakeholders) can more easily understand and work with. Just the same, equity advocates will need to work with planners to know the limits of the models, their strengths and weaknesses, and to ensure that models properly serve the needs of vulnerable communities.

Cordon pricing and area pricing proposals carry their own set of modeling challenges; the lack of U.S. examples makes it that much harder to *confidently* predict the response of people to such programs, since consumer demand must be inferred from other examples. Still, quality modeling can help us understand what changes might occur in travel patterns and choices.

One issue with pricing studies is that decision-makers and the public often focus on *costs* divorced from potential *benefits*; models can help raise a deeper awareness of those benefits. In New York City, the Move NY plan used an integrated spreadsheet model to assess traffic improvements, revenue generation, and other benefits expected from reforming road tolls and transit fare policies. It created a way to test different scenarios and measure their impacts, to understand the costs *and* benefits of saved time for transit riders and drivers, as well as to predict environmental benefits and improvements in active transportation.[17]

The following list of questions addresses the range of impacts equity advocates should be looking at. Some of these questions reflect issues already raised in this toolkit and its companion report, but are also useful to consider at this stage.

QUESTIONS TO ASK	
3.1	***Affordability*.** How will the pricing change affect the travel costs of the low-income user? Will low-income drivers be "priced out" of certain trips? Will the requirements to use newly tolled facilities be too burdensome? *Also, will low-income individuals have ready access to transponders and means of paying tolls that don't require credit card or bank accounts, or the fronting of significant amounts of cash?*
3.2	***Choices*.** What reasonable alternative transportation choices (roads, transit, etc.) will be available to those who cannot afford the toll?
3.3	***Travel Time*.** If pricing produces travel-time savings, are they experienced by all users? *Will the non-toll alternatives be equitable in terms of travel time or distance? Will low-income commuters change their travel times or modes as a result of road pricing?*

3.4	***Transit.*** What impact will the project have on transit (e.g., changes to bus routes, travel time, frequencies)?
3.5	***Local Roads.*** Will the project divert a substantial amount of traffic through a vulnerable community? *If so, what impacts on air quality, noise, and safety (bicycle and pedestrian) might be expected? Will there be shifts in demand for parking that impact these communities?*
3.6	***Social Impacts.*** Will broad changes resulting from road pricing reduce traffic and bring more community cohesion? *May it further isolate some communities or particular populations?*
3.7	***Access to Opportunities.*** How will the project impact the access that people from vulnerable communities have to likely destinations? *Likely destinations include jobs, schools, hospitals, social services, places of worship, shopping, as well as to cultural and recreational resources.*
3.8	***Businesses.*** How will the project impact business access for both customers and deliveries? *Are any small and local businesses at risk, and if so, are there measures that can protect them?*
3.9	***Noise.*** Will there be noise impacts attributable to road pricing?
3.10	***Rents.*** Are there foreseeable changes in housing or commercial rents and/or land values attributable to changes in access to opportunities?
3.11	***Environmental.*** What impacts will pricing have on air quality, and where are these impacts likely to be felt? *In addition to impacts on air quality, will the toll facility improve or worsen water quality and drainage conditions for particular populations? Will it increase the number of vehicles carrying hazardous materials through or near vulnerable communities?*
3.12	***Locations.*** What physical infrastructure (such as tolling barriers) will need to be built, and how much of it will be located in vulnerable communities? *Will eminent domain be required? Whose homes are likely to bear the burden?*

ADDITIONAL RESOURCES

NCHRP's *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox* has several useful resources for this step. Tool #7, "Using Travel Demand Models for Environmental Justice Assessments," as well as Tool #8, "Applying a Select Link Analysis to Assess Trip Patterns," provide excellent background on the potential uses and limitations of these two modeling techniques.

EQUITY TOOLKIT

Step #4

Choose Strategies to Advance Transportation Equity

Purpose

The purpose of this step is to identify which set of policies and investments can best maximize equity across all groups, redress historic inequities, and minimize the harm to vulnerable populations.

Discussion

Chapter 3 of this toolkit's companion report identifies a range of strategies that can advance equity. Some of the most relevant strategies—whether for affordability, access or health—may have been identified previously and even implemented (in part) in local or regional plans or in recommendations made by community groups.

A growing number of public agencies may have already adopted a stated equity strategy; if they do, that is a great place to start. Examples include San Francisco Muni's equity strategy and the priority list for Seattle's Transportation Equity Program.[18]

While there are many different actions that can be taken to help improve the equity of the transportation system, their relative impact will vary based on a wide range of conditions and circumstances. It is for this reason that it is never enough to merely *specify* an equity program, but to develop a range of options, analyze them for their potential impacts, and make adjustments so as to minimize negative impacts (and costs) and maximize positive results. This process is necessarily iterative; the number of iterations depends on the scale of expected impacts, the resources available to deal with them, and how widespread those impacts are.

It is only after a set of iterations that the final pricing proposal and associated equity strategy may advance to the decision-making bodies for formal approval—a process that may require equity advocates to conduct further outreach to both vulnerable communities and to decision-makers.

What kinds of strategies or actions may be implemented as part of an equity program? The table below provides a quick outline of some sample strategies; others can be found in this toolkit's companion report, while still others might be identified by the communities themselves.

STRATEGY	EXAMPLES	ISSUES
Affordability and Driver Assistance	**Driver Discounts, Caps & Exemptions,** such as: • Free or discounted transponders • Toll discounts or credits for low-income households • Exemptions for people with disabilities • No tolls during off-peak hours	If there are too many of these, then other components of the program, like increasing bus and carpool speeds or climate benefits, may be heavily impacted.
	Cash Payments (for those without credit cards or bank accounts)	Must be convenient to access and minimize up-front deposits.
	Transit Discounts • Free or discount transit passes • Subsidize bike and car share costs	
Greater Mobility Options and Safer Active Transportation Networks	**Improved Transit Service** • New routes to more destinations • Faster, more reliable service • Improved stations/stops	Must ensure routes serve vulnerable communities, operate at beginning and end of shifts; minimize need to transfer; not impose undue time penalties; and get as close as possible to job sites.
	Carpool and Vanpool Programs • Carpool matching services such as Scoop • New vanpool routes • Additional park-and-ride lots	These may often be the most effective way to serve suburban and rural areas.
	Pedestrian/Bike Improvements • Improved pedestrian network • Improved bicycle network • Pedestrian-scale lighting	Must be useful to enough people to qualify as an equity promotion measure.
	New Mobility Programs, such as: • Bike share • Car share • Creative use of ride-hailing or other services to connect to transit • Shuttles/Microtransit • Carpool apps and programs	Even when affordable, access might be limited. Options should exist for people without smartphones.

Programs for Seniors and People with Disabilities	**Accessible Information** (senior help lines, materials)	Must be easy for seniors to access and plan trips.
	Targeted Transit/Shuttle Routes	Must serve destinations accessed frequently by seniors at the right times.
Healthier Communities	**Encourage Clean Air Vehicles** • Credits for drivers of clean vehicles • Purchase clean transit vehicles	Transit should be prioritized on routes that pass through marginalized communities.

QUESTIONS TO ASK:

4.1	What strategies are most promising to provide greater affordability, and potentially price certainty, as part of the pricing proposal?
4.2	What strategies will most help *commuters* from vulnerable communities?
4.3	What strategies will most benefit *non-commuters* in vulnerable communities?
4.4	What strategies have affected communities *already identified* as part of other planning processes that can be implemented/supported through funding from the road pricing project? *Such plans may be in-depth and already have broad community support, so their value can be considerable.*
4.5	Can planners run the transportation models on the final alternatives to get a finer grain prediction of impacts?

ADDITIONAL RESOURCES

For more information on cutting-edge equity strategies:

- San Francisco MUNI: www.sfmta.com/projects/muni-service-equity-strategy
- Seattle: www.seattle.gov/transportation/projects-and-programs/programs/transportation-equity-program

EQUITY TOOLKIT

Step #5

Provide Accountable Feedback and Evaluation

Purpose

Road pricing strategies, once implemented, will lead to shifts in travel behavior. Toll revenues will also begin to flow to programs and efforts aimed at delivering equitable outcomes. Ongoing monitoring and evaluation can help identify problems or issues that may emerge, as well as point to new opportunities to help advance equity.

Equity advocates need to ensure that:

- Monitoring and evaluation occur along a reasonable timeline (though it should also be understood that some impacts, like health and traffic safety, may by their nature take some time to become clear);
- There are agreed-upon mechanisms for providing feedback to decision-makers on both the successes and shortcomings of the program, as well as to highlight and act upon emerging opportunities; and
- The results of monitoring and evaluation are communicated clearly and consistently with affected communities.

Discussion

In more traditional transportation projects, community engagement is focused on the period from project scoping through project completion. Congestion pricing, however, should be considered more of a *dynamic process*. Downtown congestion pricing projects especially will have to be evaluated and modified at regular intervals. It is therefore important to plan for formal, continuous community engagement and collaboration *throughout* implementation, evaluation, and ongoing project monitoring and modifications.

The *Public Involvement Plan* should lay out the process for involving stakeholders and community members in all stages of the project.

It is also important to note that the final set of outcomes and indicators should still be relevant during this evaluation phase. The indicators, to the extent feasible, should be used for ongoing

project evaluation and monitoring, much as London has done.[19] In this way the original goals can continue to exercise influence over the project.

Several of the downtown congestion pricing programs have started as pilot programs, in part because of public resistance and the uncertainty of their impacts. Pilots allow for evaluation and modifications to address concerns before the permanent adoption of the program. While pilots can be useful, they can also be complicated and expensive to administer. Any pilot program needs to have clearly described milestones and decision points, with clear opportunities for impacted communities to influence the project's ultimate status.

A road pricing proposal not only presents an opportunity to advance equity at a project level; it can usher in and even institutionalize a stronger equity focus in transportation planning. Equity advocates should look for opportunities to ensure that transportation planning agencies, and the elected bodies that oversee them, make equity representation and goals a permanent and central part of the process.

CASE STUDY
Stockholm[20]

Stockholm, a city of 1.2 million, implemented a 7-month pilot cordon pricing charge for the central city in 2006. Though initially unpopular, public sentiment shifted once the benefits of the program were experienced and people saw that the negative impacts were not as large as they feared. A referendum approved making the program permanent.

After the trial period, Stockholm commissioned a study analyzing the equity impacts of the cordon pricing scheme. Among the key findings, the city learned:

- High-income individuals were affected more than low-income;
- Men paid 65% more congestion prices than women;
- Relatively few drivers paid the majority of congestion charges – but most paid occasionally;
- Young and low-income individuals benefitted from lower transit fares; and
- Journeys in central areas were shorter, with a lower percentage by car.
- Program improvements have also included 18 new regional bus lines and 2,800 new regional park-and-ride spaces.

While planners had an explicit goal of reducing car traffic around the cordon by 10 – 15%, traffic has actually decreased by 22%, while greenhouse gas emissions have fallen by 14%. Businesses in the central city saw sales grow by 5%; while the rise cannot be definitively tied to the pricing program, it certainly demonstrates that there were minimal to no negative impacts on businesses. Deliveries also became easier due to decreased congestion.

CASE STUDY
Portland, Oregon

After adopting a "Strategic Plan to Advance Racial Equity, Diversity and Inclusion" in 2016, Oregon Metro created a 15-member advisory and oversight community body that reports directly to the Metro Council. The body advises the Council and staff on

racial equity work, provides community oversight and accountability, and serves as a conduit of information to and from the community. In this way, impacted communities have a voice in future decision making and build the expertise, personal relationships, and power to engage over the long-term, rather than on a case-by-case basis.

CASE STUDY

New York City

Move NYC—the congestion pricing proposal spearheaded by Sam Schwartz—includes provisions for a way to "lockbox revenue" to ensure the money raised by tolling would be used on relevant transportation projects in Manhattan. By creating a new financial authority to which bridge tolls would flow, the estimated $720 million in new revenues would be directed to the MTA and its agencies. Additional legal safeguards, including commitments to bondholders, would further cement local control of the new tolls.

The revenue design addressed one of the largest equity concerns raised by opponents of road pricing strategies: distrust of government officials to spend revenues on critical, applicable transportation projects within the region. The proposed mechanism was a novel solution for protecting revenues. The pricing scheme also contained provisions to ensure that drivers who lacked effective transit alternatives would not be unduly penalized.

QUESTIONS TO ASK:	
5.1	What *priority* is given to project funding commitments, which *entity* is making those commitments, and who specifically is accountable for follow-through? *Are commitments, implementation, and adjustment reported publicly and transparently?*
5.2	Who is responsible for determining if the project meets its goals and commitments to vulnerable populations, and on which timeline?
5.3	If the project includes a pilot program, • What is the proposed timeline? • What milestones or targets are included? • What data needs to be generated and disseminated to the public? • Who is responsible for making the decision whether to make the program permanent, make further changes, or terminate the program?
5.4	Who is responsible for providing continuous oversight of equity issues following project implementation?
5.5	What equity issues remain to be dealt with? How heavily will decision-makers weigh the adopted equity outcomes and indicators, relative to other priorities?
5.6	Are there ongoing opportunities for vulnerable communities to participate in the entire transportation planning process?

Notes

[1] Communication with Dan Firth, X DATE, the Executive Director of Vancouver's Independent Mobility Pricing Commission. Dan recounted how even a relatively simple system like the downtown cordon in Gothenburg, Sweden, required eight such iterations. Dan had previously worked with London's and Stockholm's programs.

[2] It should be noted that the NCHRP document is mostly oriented to highway pricing strategies; while some of its insights and frameworks may be useful for cordon or area pricing proposals, there are issues and concerns with these that are not fully covered.

[3] National Cooperative Highway Research Program (NCHRP), *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox* (Washington, DC: National Academies Press, 2018).

[4] NCHRP, pp. 281-286.

[5] Richard D. Plotnick, et al., "A Geography-Specific Approach to Estimate the Distributional Impact of Highway Tools: An Application to the Puget Sound Region of Washington State," *Journal of Urban Affairs* (7 August 2011), 33(3), pp. 345–366.

[6] NCHRP, p. 95.

[7] NCHRP, pp. 303-314.

[8] Mobility Pricing Independent Commission, Metro Vancouver Mobility Pricing Study (Vancouver, BC, May 2018), www.translink.ca/~/media/Documents/plans_and_projects/regional_transportation_strategy/Research/Metro_Vancouver_Road_Pricing_Research_Study_Report.ashx.

[9] Seattle Race and Social Justice Initiative, "Racial Equity Toolkit to Assess Policies, Initiatives, Programs, and Budget Issues" (Seattle Office for Civil Rights, August 2012), www.seattle.gov/civilrights/programs/race-and-social-justice-initiative/racial-equity-toolkit.

[10] Hana Creger, Joel Espino, and Alvaro S. Sanchez, *Mobility Equity Framework: How to Make Transportation Work for People* (Oakland, California: Greenlining Institute, 2018), greenlining.org/publications/2018/mobility-equity-framework/.

[11] A particularly useful paper is Brian Taylor, "How Fair is Road Pricing? Evaluating Equity in Transportation Pricing and Finance," (National Transportation Policy Center, 29 September 2010).

[12] Adopted from NCHRP, p. 56.

[13] NCHRP, p. 310.

[14] Hana Creger, et. al. (2018).

[15] NCHRP, pp. 281-286.

[16] Hana Creger, et. al. (2018).

[17] Charles Komanoff, "The Fix: NYC Congestion Pricing Plan Looks Solid – If Cuomo Aims High," in *Streetsblog NYC* (23 January 2018), nyc.streetsblog.org/2018/01/23/the-fix-nyc-congestion-pricing-plan-looks-solid-if-cuomo-aims-high/.

[18] SFMTA, "Muni Service Equity Strategy," www.sfmta.com/projects/muni-service-equity-strategy. Accessed on 12 December 2018. And Seattle Race and Social Justice Initiative (2012).

[19] Transport for London, *Changes to the London Congestion Charge Scheme: Integrated Impact Assessment* (July 2018). On page 17 there is a summary chart comparing a proposed change to the original project goals. There is much more detail that follows, including an "equalities analysis" that begins on page 67.

[20] Jonas Eliasson, "The Stockholm congestion charges: an overview," CTS Working Paper (Stockholm: Center for Transport Studies, 2014), www.transportportal.se/swopec/cts2014-7.pdf; Transek, *Equity Effects of the Stockholm Trial* (Stockholm, 2006), www.stockholmsforsoket.se/upload/Sammanfattningar/English/Equity Effects of the Stockholm Trial.pdf; and San Francisco County Transportation Authority, *San Francisco Mobility, Access, and Pricing Study,* Final Report to the Authority Board (San Francisco: SFCMTA, December 2010), p. 6.

Materials following this page were distributed at the meeting.

Regional Congestion Pricing Study

July 22, 2020 - TPAC Workshop

Regional Congestion Pricing Study

- Welcome
- Congestion pricing best practices, concepts, and relationship to equity – *Nelson/Nygaard and Transform*
- Partner pricing coordination – *ODOT and Portland project leads*
- Metro RCPS update and TPAC discussion
  - Methodology- performance measures
  - Scenarios development and what we are testing
- Schedule and TPAC input opportunities

Regional Congestion Pricing Study

RCPS Goal:

To understand how our region could use congestion pricing to manage traffic demand to meet climate goals without adversely impacting safety or equity.

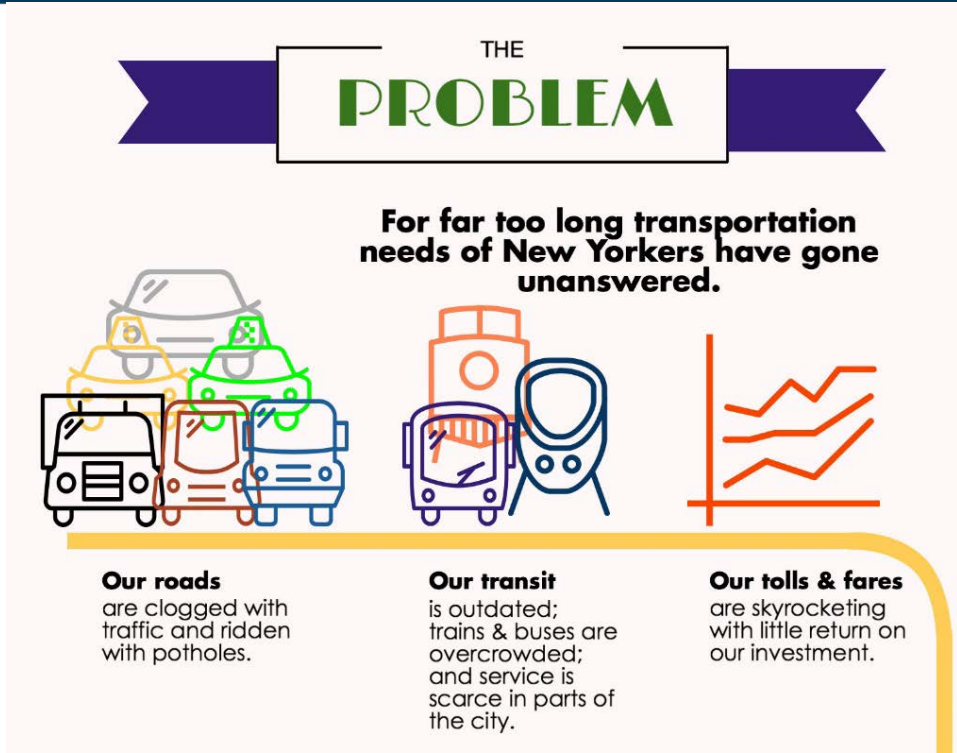
What is congestion pricing?

Congestion pricing involves the application of market pricing…to the use of roadways at different times of day.

- Metro Regional Transportation Plan (2018)

Why consider congestion pricing?

- Growing regions and shrinking revenues
- Longer travel times and more congestion
- Recognition that it's not possible to build our way out
- Strong policy backing and clear climate goals



Who can benefit from congestion pricing?

Congestion pricing fees can vary by **time of day** to reduce traffic during the busiest times of day

Bus riders benefit from faster service

Bikers enjoy safer streets with fewer cars

People walking enjoy more attractive streets and less air pollution

Congestion pricing funds can help pay for more **transit service**

Emergency vehicles travel without delay

People who live near congested roadways benefit from lower traffic and cleaner air

Trucks pay a fee and benefit from on-time deliveries

Higher income commuters pay a fee and benefit from less traffic

For-hire vehicles could pay a surcharge in high-traffic areas

Leisure trips on the weekend aren't charged

Exemptions or discounts can lessen the cost for **low-income people or people with disabilities**

Exemptions or discounts can lessen the cost for **electric vehicles or local residents**

Pooled trips can be discounted

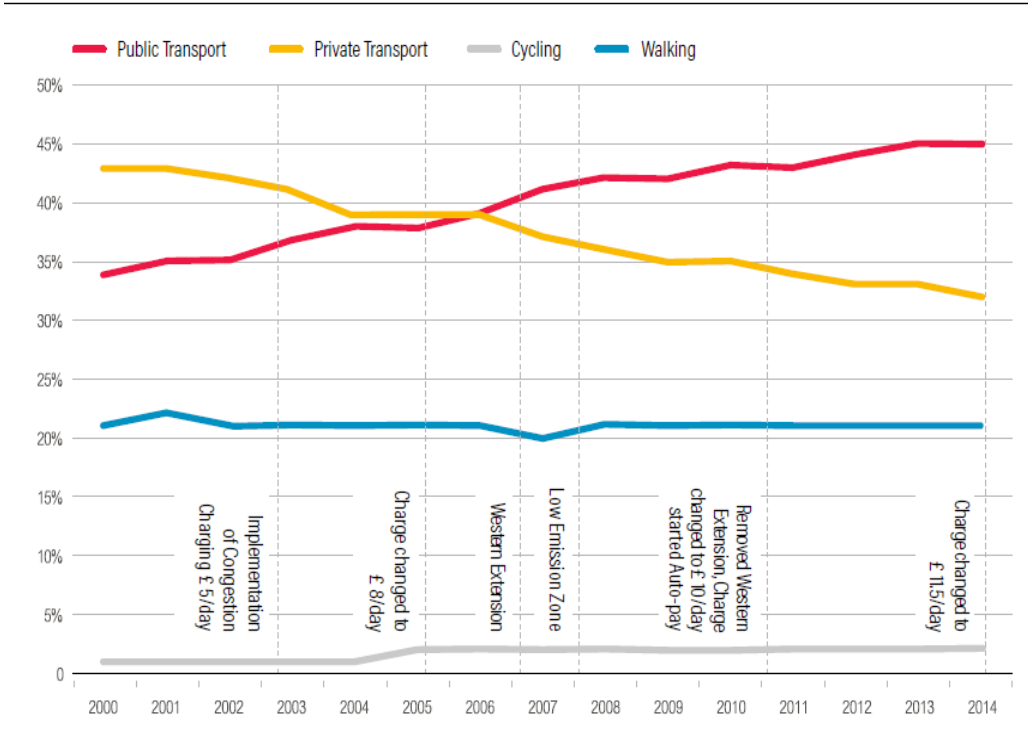
Who is pricing or studying pricing?

What have others done and learned?

- Build on aggressive transportation demand management programs
- Intend to reduce congestion and/or emissions as primary goal
- Provide a positive revenue stream that funds transportation options and services
- Experience dramatic increase in acceptance post implementation

What outcomes has London seen?

- Average traffic speed increased from 2-5 mph to 10 mph
- Bus service increased in the pricing zone by 27%, resulting in 38% increase in bus ridership in 2 years
- Traffic collisions fell by 40%



What outcomes has Stockholm seen?

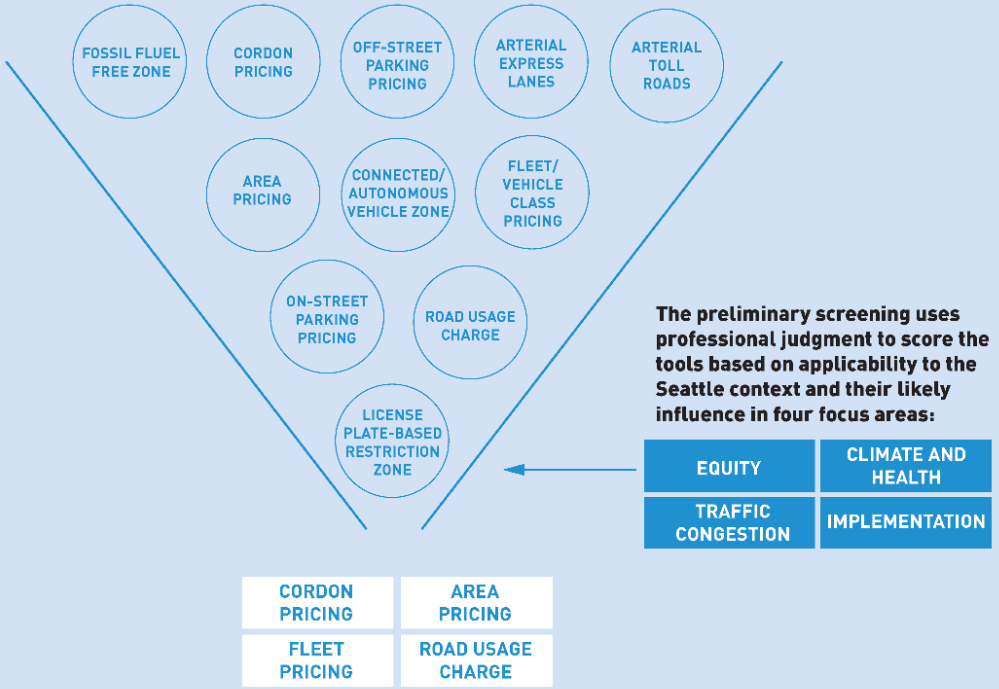
- Reduced traffic by 22% and GHG emissions by 14%
- Reduced number of acute asthma cases in young children by 50%
- Business sales increased by 5% in priced area

What is San Francisco studying?

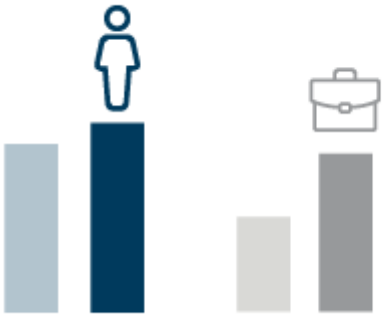
- Builds on 2010 study
- Exploring how a fee to drive downtown during busy hours could keep people and goods moving
- Focuses on cordon approach for most congested area: NE San Francisco
- Target is to reduce peak hour vehicle trips by 15%

What is Seattle studying?

- Exploring pricing as a way to address traffic congestion, reduce GHG emissions, and create a more equitable transportation system
- Considered wide range of tools but focusing on downtown cordon



Why study congestion pricing now?

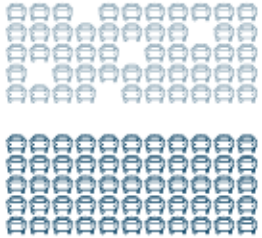


The region expects 600,000 new residents and 350,000 new jobs by 2040.

Source: 2018 RTP

Congestion got 10% worse between 2018 and 2019.

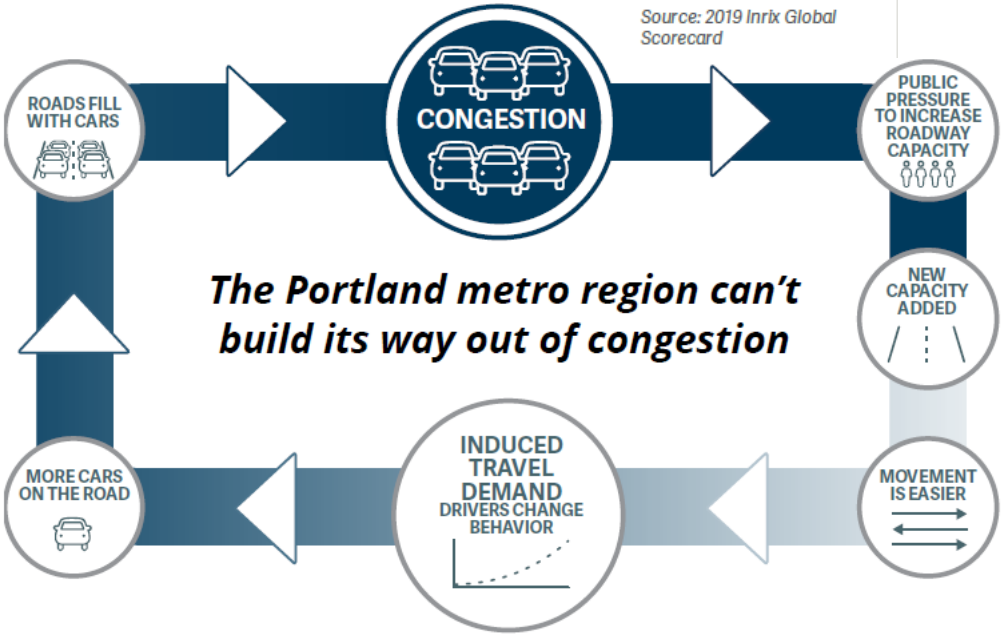
Source: 2019 Inrix Global Scorecard



The Cycle of Congestion

Portland metro is the 8th most congested region in the country.

Source: 2019 Inrix Global Scorecard



The Portland metro region can't build its way out of congestion

What tools is Metro exploring?

- Focus on 4 tools with multiple possible program designs
- Explore combinations of strategies to maximize goals
- Provide assessment of overall value, not a recommendation
- Recognize that outcomes will be different than other regions

VEHICLE MILES TRAVELED FEE

Drivers pay a fee for every mile they travel

CORDON PRICING

Drivers pay to enter an area, like downtown Portland (and sometimes pay to drive within that area)

CORRIDOR PRICING

Drivers pay a fee to drive on a particular road, bridge or highway

PARKING PRICING

Drivers pay to park in certain areas

What is the study timeline?

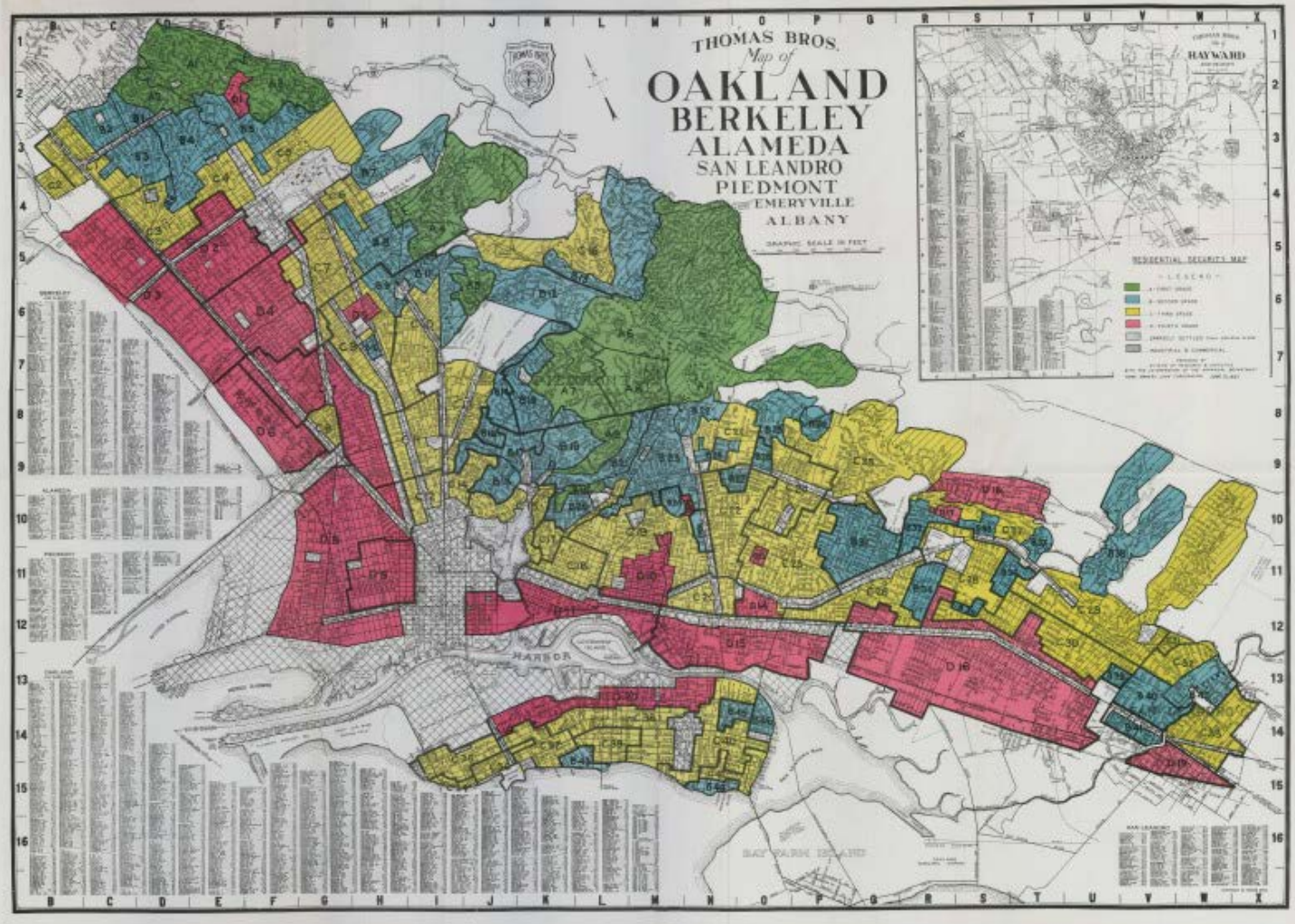
TransForm

https://www.pinterest.com/pin/694891417478866790/

https://www.history.com/news/slavery-profitable-southern-economy

https://erenow.net/modern/color-of-law-forgotten-history/9.php

https://www.trumanlibrary.gov/photograph-records/2013-371



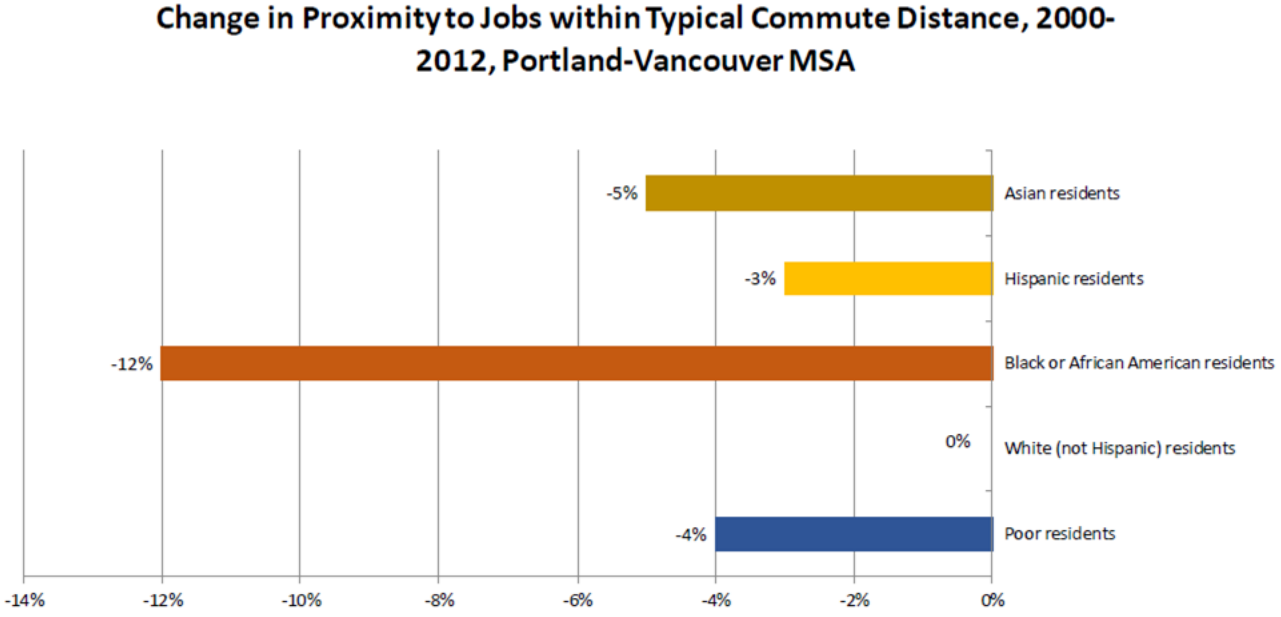
GREEN = “Best”
In-demand, no non-white groups

BLUE = “Still Desirable”
Thought to be stable due to their low risk of “infiltration” by non-white groups

YELLOW = “Definitely Declining”
Mostly bordered black neighborhoods; risky due to the “threat of infiltration of foreign-born, negro, or lower grade populations.”

RED = “Hazardous”
Where “infiltration” had already occured. Almost all of these neighborhoods were populated by black residents and ineligible for FHA backing.

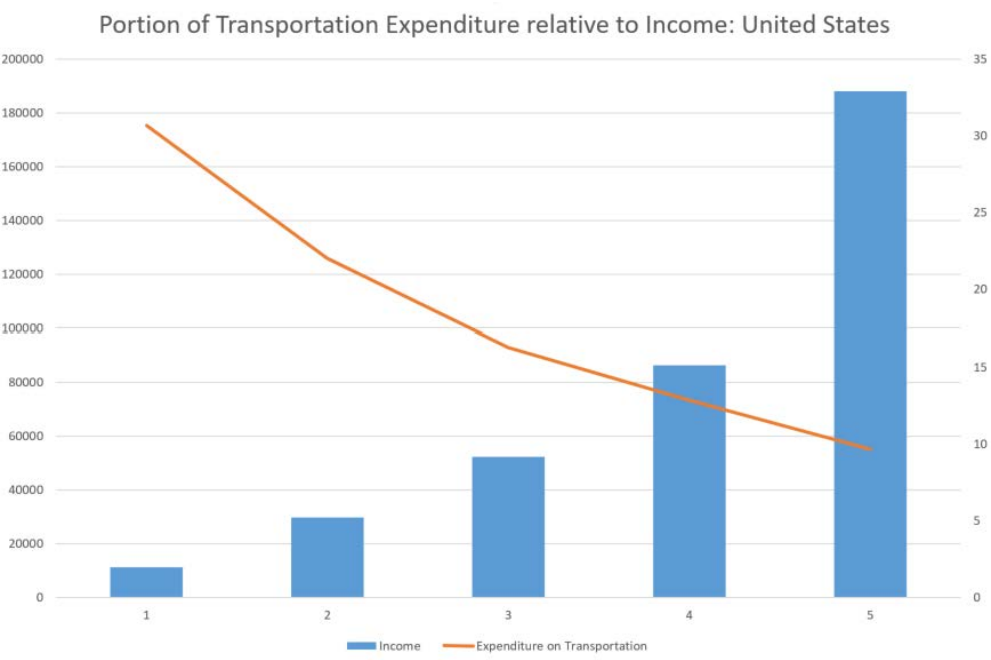
Unequal Access



Brookings Institute, *Growing Distance Between People and Jobs in America,* 2015.

https://slate.com/news-and-politics/2015/02/america-s-transportation-system-discriminates-against-minorities-and-poor-federal-funding-for-roads-buses-and-mass-transit-still-segregates-americans.html

High Costs


Portion of Transportation Expenditure relative to Income: United States
200000
180000
160000
140000
120000
100000
80000
60000
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35
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5
0
1
2
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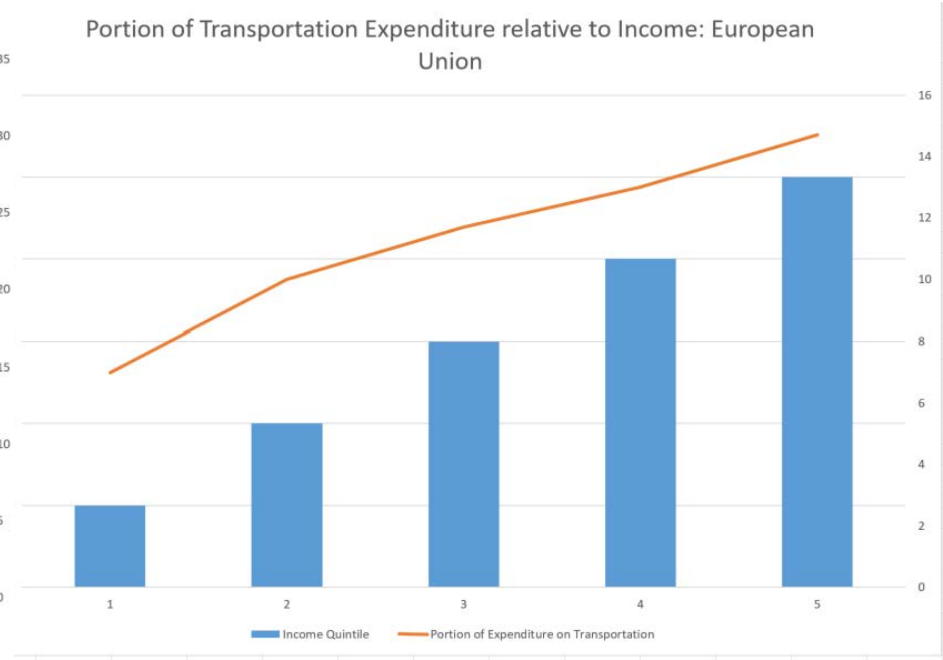
4
5
Income
Expenditure on Transportation


Portion of Transportation Expenditure relative to Income: European Union
16
14
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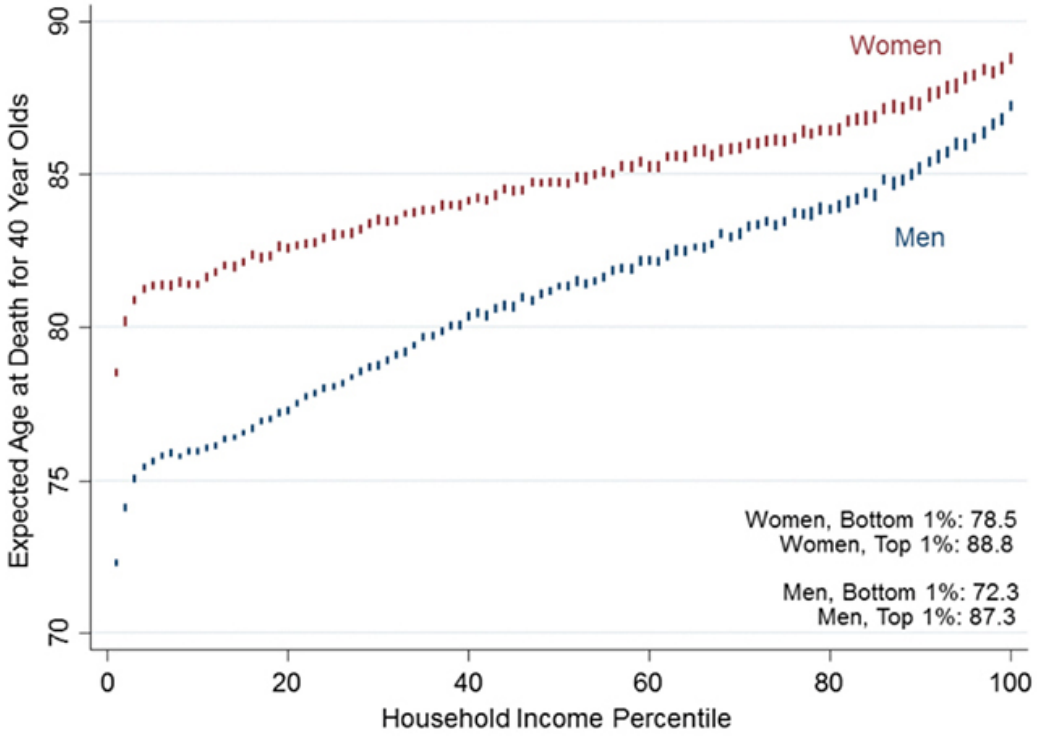
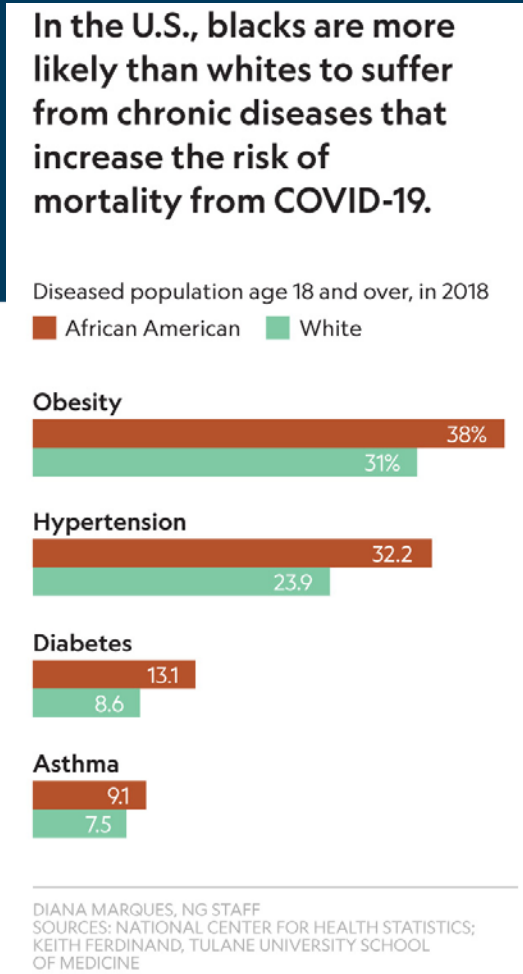
Income Quintile
Portion of Expenditure on Transportation

Disproportionate Health Outcomes



https://news.harvard.edu/gazette/story/2016/04/for-life-expectancy-money-matters/



https://www.nationalgeographic.com/history/2020/04/coronavirus-disproportionately-impacts-african-americans/#close

Changing our Approach to Planning

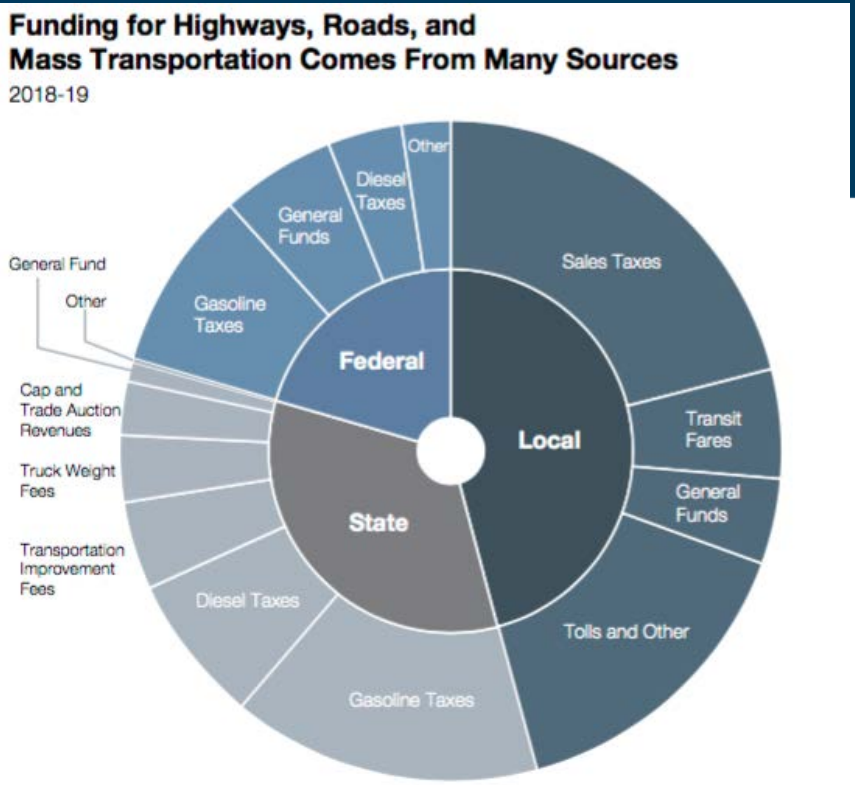
TransForm

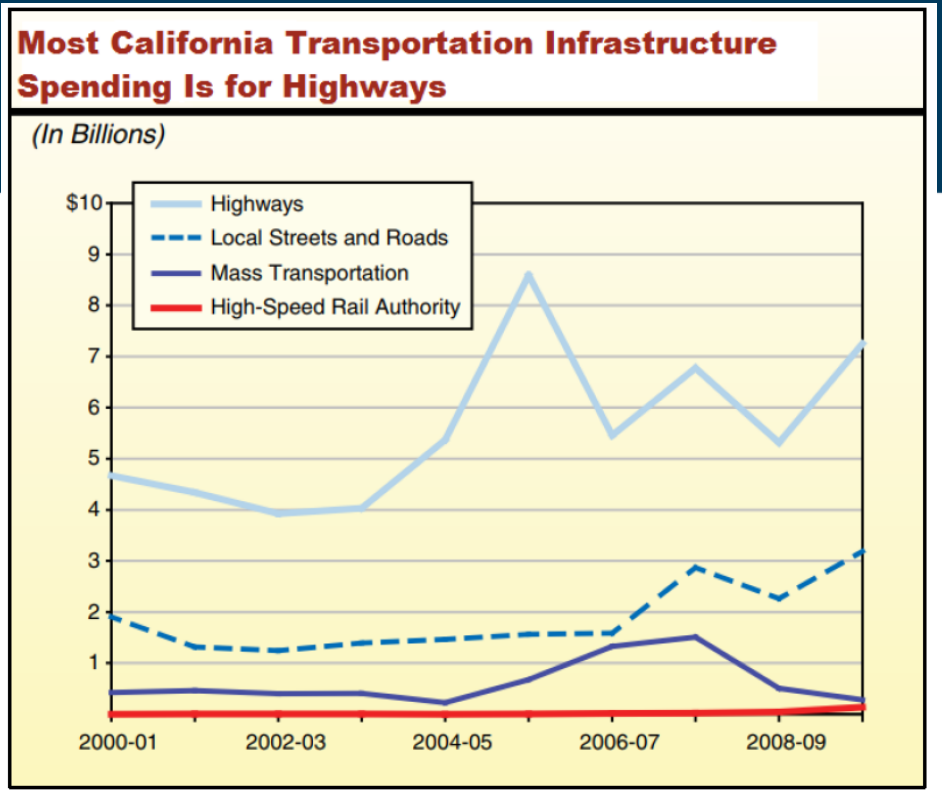
Our communities. Our transportation. Our future.

A Report and Toolkit to Help Communities Advance a More Equitable and Affordable Transportation System

PRICING **ROADS,** ADVANCING **EQUITY**

https://slate.com/news-and-politics/2016/02/americas-transportation-system-discriminates-against-minorities-and-poor-federal-funding-for-roads-buses-and-mass-transit-still-segregates-americans.html





Source: https://lao.ca.gov/reports/2018/3905/calfacts-2018.pdf

Source:https://www.climateresolve.org/wp-content/uploads/2019/06/More-Choices-Less-Traffic-PRINT.pdf

Improving Access to Opportunity

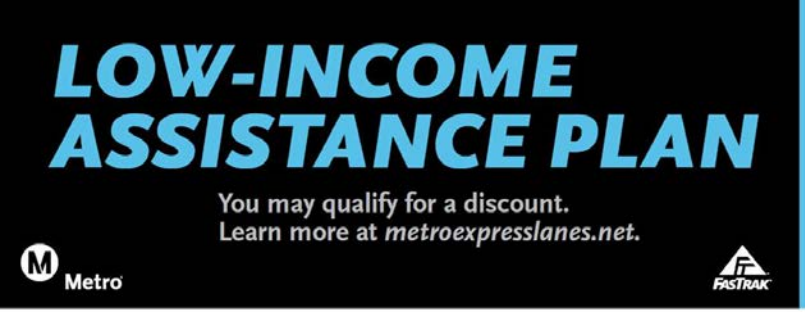
Category	Sample Indicators
Funding	Dollars invested in transit and mobility options that benefit equity populations
Service Quality	Changes in speed, reliability, quality – either directly for equity populations or for cars, HOVs, those paying tolls
Access	Change in # of destinations or transit stops people from equity communities can access within 10, 30 mins, etc.

Increasing Affordability

Category	Sample Indicators
Discounts	Discount level on tolls for equity populations, discounts on transit fares or other alternatives
Regressiveness	Past and projected household budget spent on transportation, by income level
Savings	Total expected savings for equity populations
Alternatives	Cost of using transit or other modes instead of driving

Advancing Community Health

Category	Sample Indicators
Safety	Change in collisions, deaths, injury rates on facilities that receive investment
Air Quality	Change in particulate matter or other pollutants in target areas, investments in clean air buses or other vehicles
Health	Health benefits, disease or stress reduction, improvements in life expectancy



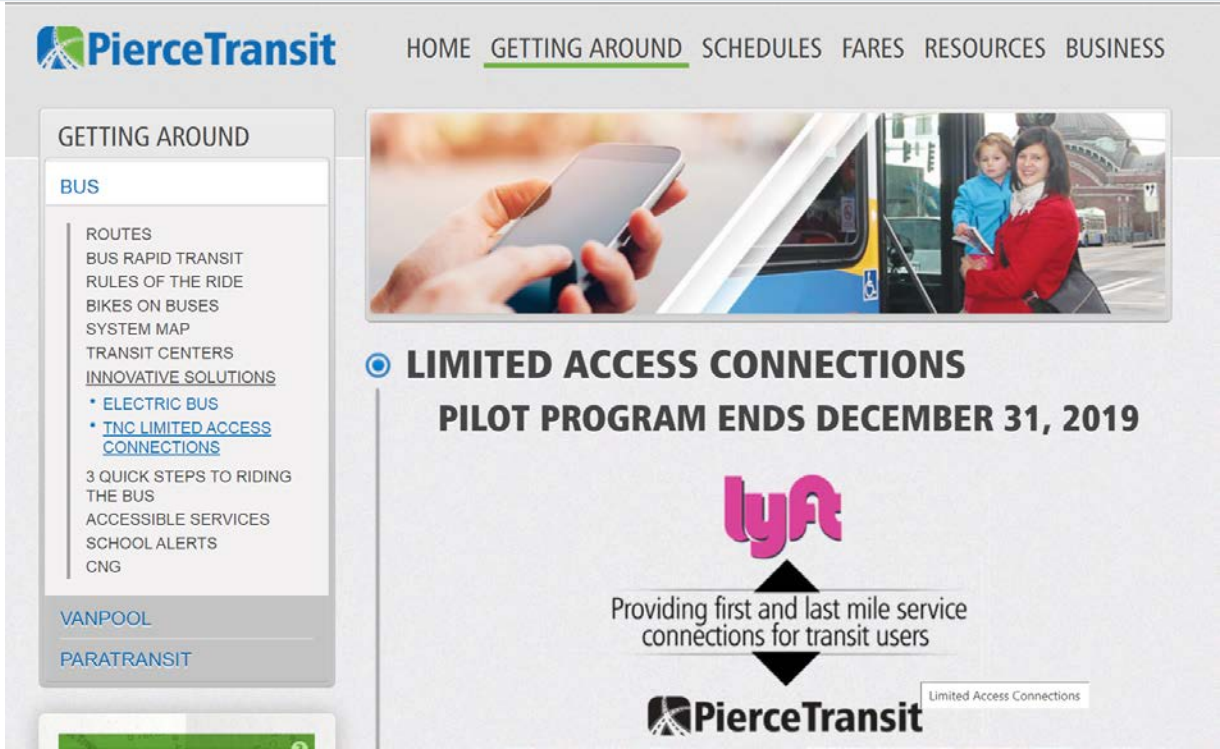
LA Metro Express Lanes

SFMTA Equity Strategy & Green Zones

https://www.sfmta.com/blog/nothin-g-thing-well-actually-gz-thing

Pierce County Transit Lyft Partnership

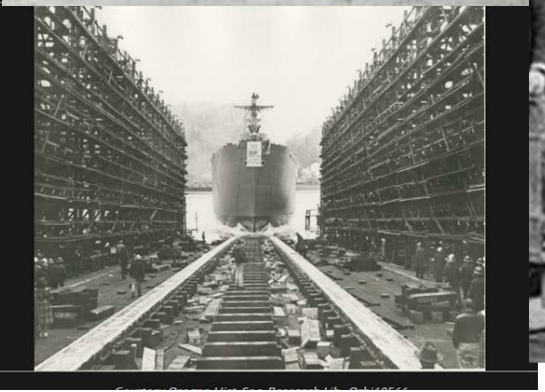
Free first-last mile access to core transit centers for bus riders. With support from the Federal Transit Administration's Mobility on Demand (MOD) Sandbox grant program, Limited Access Connections, Lyft partnered with Pierce County Transit to bridge first-last mile gaps to bus and rail stations.
https://www.lyft.com/blog/posts/how-lyft-works-with-public-transit-agencies-across-the-country-to-eliminate-transportation-barriers

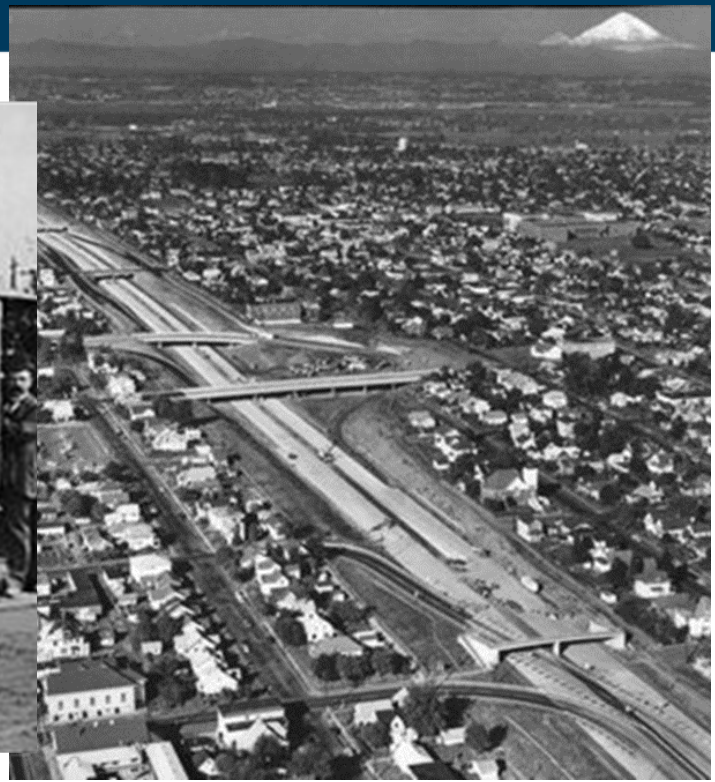


Portland Region's Transportation History and Equity

White displacement of indigenous communities

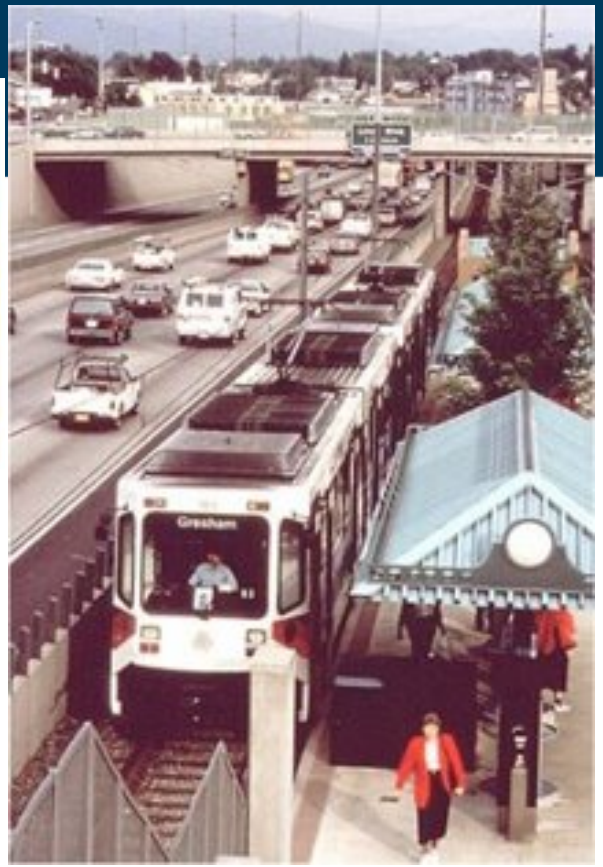
Railroads/Shipping/Streetcar/ Electrification/ Automobiles





Livability focus

A TriMet yellow line MAX train in North Portland. (The Oregonian file photo)

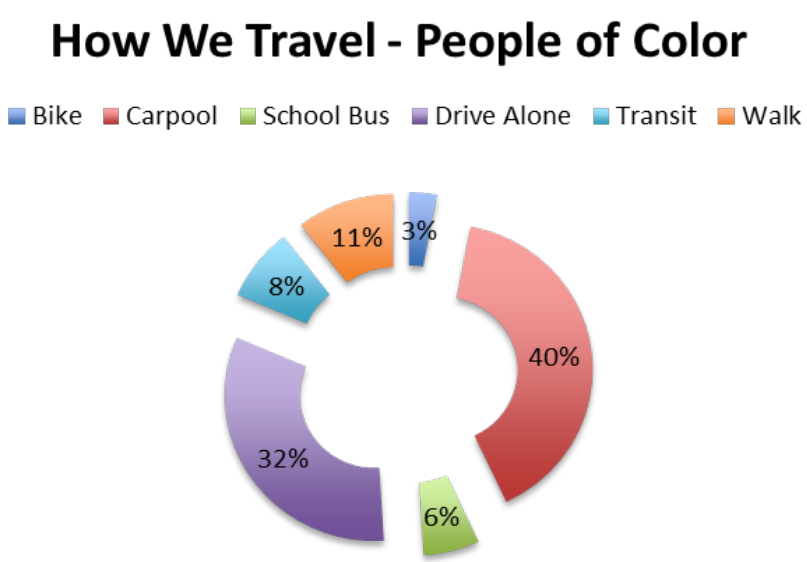


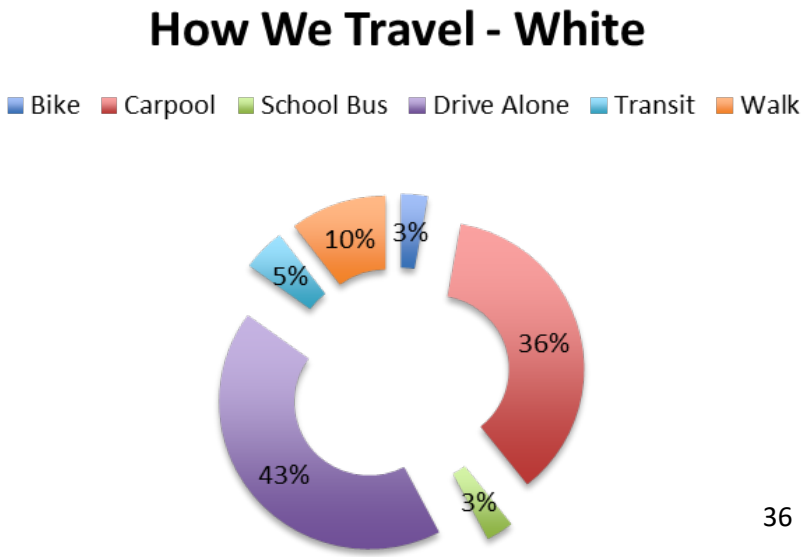
Outcomes

Each phase of the region's transportation system development benefited white people and burdened other races. Inequity was built into our system.

Our transportation system is inequitable

- Communities of color use alternatives to driving alone more
- Travel times are usually longer for people who ride transit-- *more likely low income and people of color*- as transit gets stuck in traffic.





Oregon Household Activity Survey, 2011

Equity and Congestion Pricing

What would it take for congestion pricing to advance equity?

What kind of outcomes would it need to achieve?

Short Break

5-minute break

Regional Congestion Pricing Study

July 22, 2020 - TPAC Workshop **PART 2**

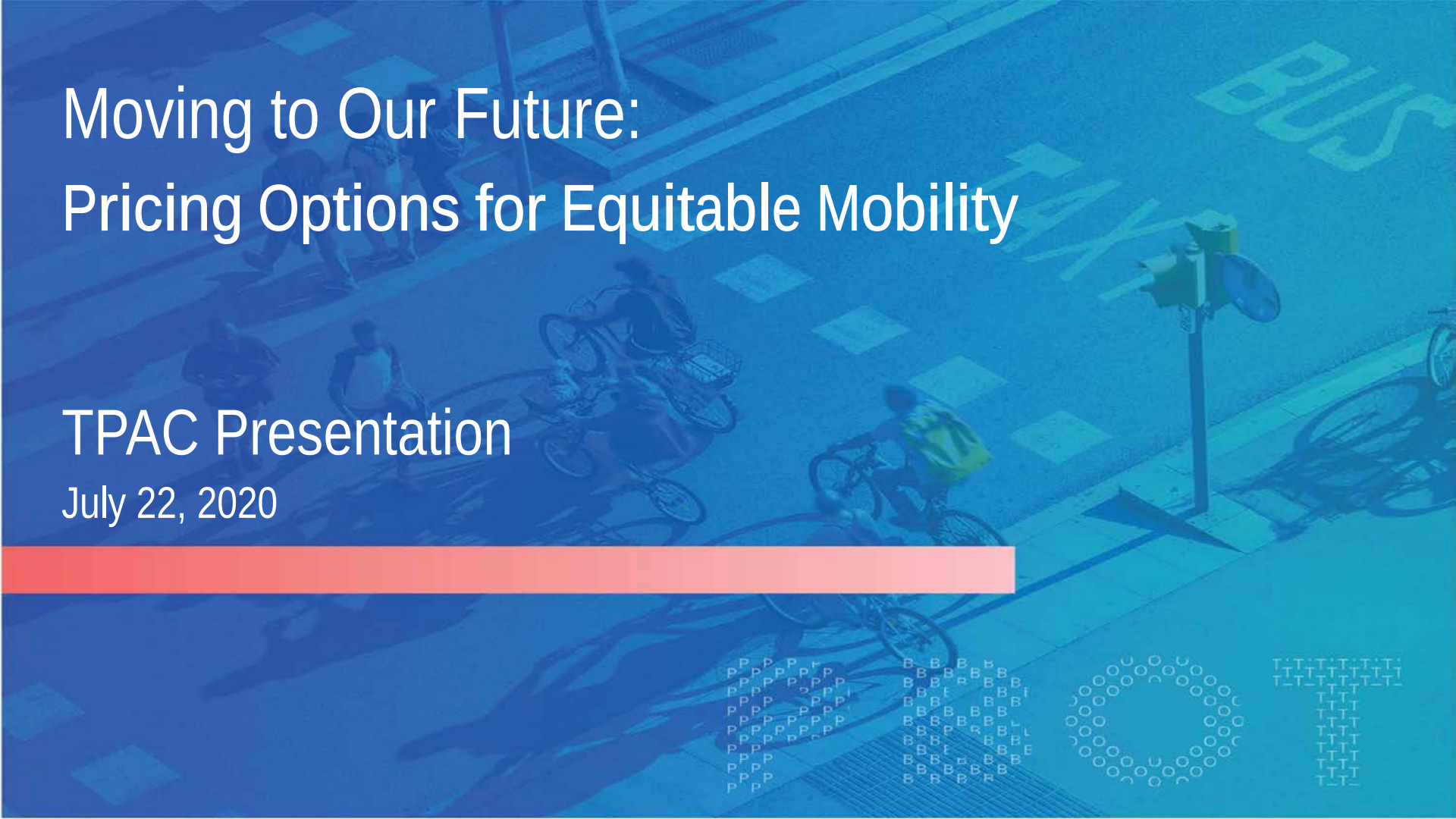
Regional Congestion Pricing Study

- Welcome
- Congestion pricing best practices, concepts, and relationship to equity – *Nelson/Nygaard and Transform*
- Partner pricing coordination – *ODOT and Portland project leads*
- Metro RCPS update and TPAC discussion
  - Methodology- performance measures
  - Scenarios development and what we are testing
- Schedule and TPAC input opportunities

Moving to Our Future:
Pricing Options for Equitable Mobility

TPAC Presentation

July 22, 2020



A priority conversation for Portland

Policy context

- Comprehensive Plan
- Central City 2035 plan
- November 2017 City Council Resolution
- July 2019 City Council Resolution

Council direction

- Center transportation justice (racial equity and climate)
- Convene a Community Task Force to explore if and how pricing strategies could be used in Portland to advance our values

Project goals and desired outcomes

Goals:

- Deepen understanding of what “equitable mobility” means and if/how pricing strategies can advance it
- Inform City policies and strategies around transportation pricing
- Center pricing policy discussion on racial equity and climate justice
- Engage constructively in regional conversations around pricing

Outcomes:

- Community Task Force ✓
- Working Draft Equitable Mobility Framework ✓
- Suite of recommendations from the Task Force to inform City bureau directors on:
  - Whether or not to implement or further study pricing strategies
  - “Conditions of readiness” for bigger pricing moves
  - Priorities for complementary strategies/reinvestments to making pricing equitable
- Final report










Moving to Our Future:

Pricing Options for Equitable Mobility

PBOT
PORTLAND BUREAU OF TRANSPORTATION










POEM project to explore a range of pricing strategies

City implementation opportunities

Longer-term, regional opportunities

New parking prices

Variable tolls

ORe*GO*

Road usage/VMT-based charges

New prices on commercial services and right-of-way access

Cordons and congestion zones

Types of investments and complementary strategies

Transit benefits (infrastructure, service, fares, etc.)

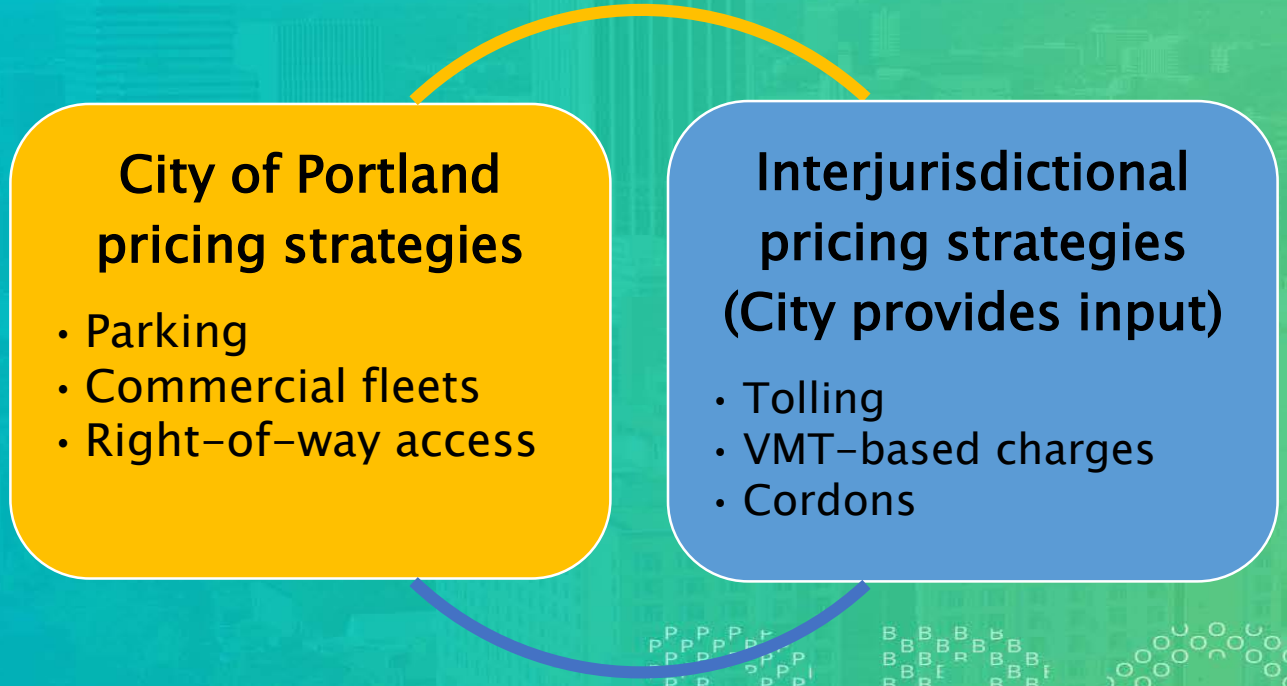
Transportation programs and services (incentives, education, etc.)

Other ideas to emerge from the Task Force members

Safety and access improvements (sidewalks, crossings, etc.)

Rebates and subsidies (low-income exemptions, clean fuel exemptions, etc.)

City's role in regional pricing conversations



Working draft Equitable Mobility Framework

Who are we prioritizing:
The Framework prioritizes extending benefits, reducing disparities and improving safety for Indigenous people and People of color (BIPOC communities). Leading with race, the Framework be used to consider impacts on people with disabilities, low-income individuals, multi-lingual and displaced communities.

What we care about

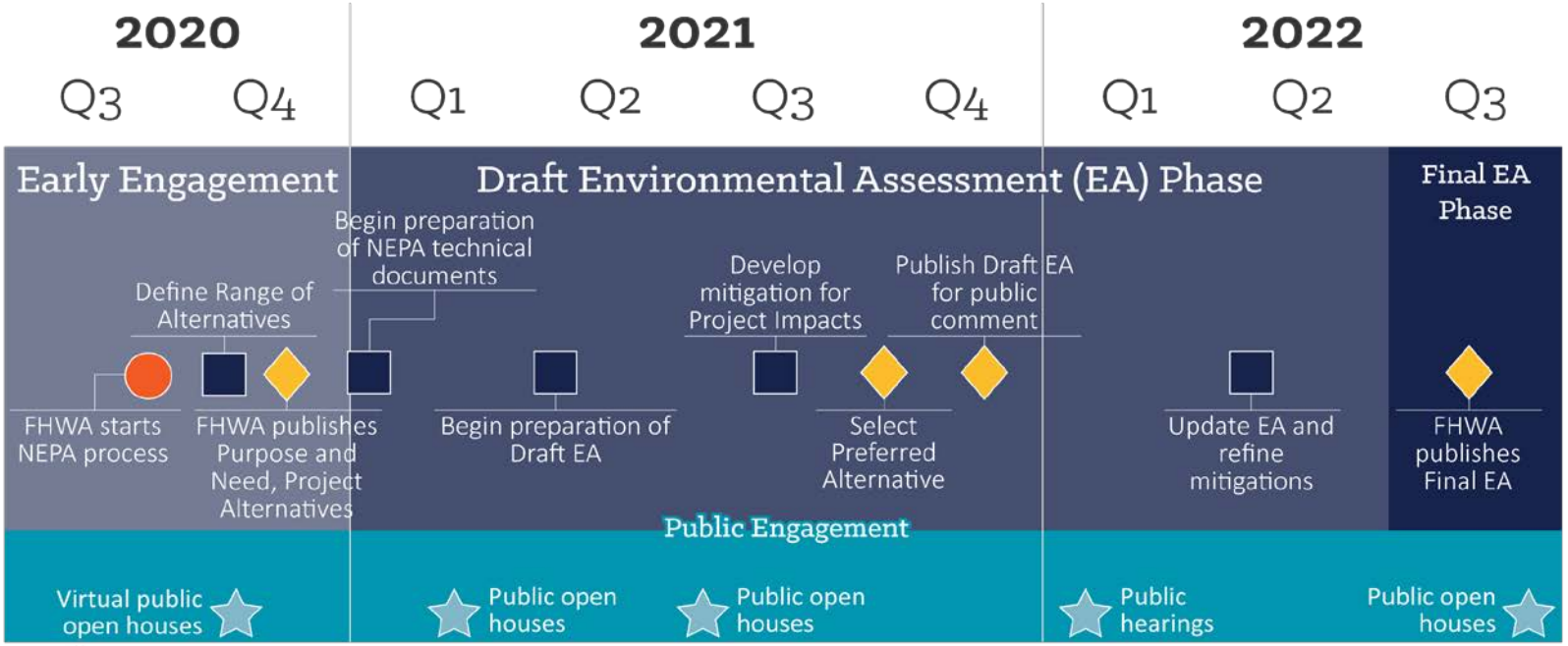
Moving People & Goods	Efficiency	**Safety**	Traffic safety
	Transportation affordability		Personal safety
	Availability	**Economic Opportunity**	Job Creation
	Reliability		Working Conditions
	Connectivity		Connected thriving local
	Accessibility	**Equitable Transportation Planning Process**	Inclusive engagement and
	Quality		Accountability and
Sustainability & Health	Climate impact		
	Air quality		
	Health impacts		

I-5 and I-205 Toll Projects

Transportation Policy Alternatives Committee Workshop:

Update on I-205 and I-5 toll projects

I-205 Toll Project: Project Milestones

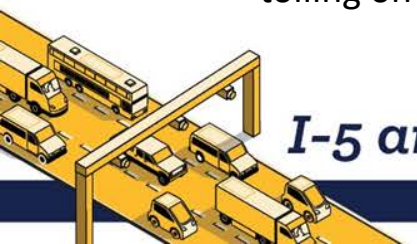


Equity and Mobility Advisory Committee (EMAC)

EMAC members represent a variety of equity and mobility interests and perspectives in the Portland metro area and Southwest Washington

Purpose:

- Advise on how tolling, in combination with other strategies, can benefit historically underserved and underrepresented populations
- Consider needs and opportunities for achieving community mobility and equity
- Provide input to the Oregon Transportation Commission and ODOT on how to implement tolling on I-5 and I-205



EMAC Member Roster

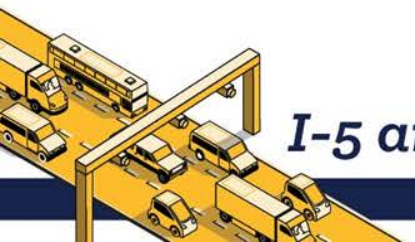
Alando Simpson

Oregon Transportation Commission Vice Chair, serves as the EMAC liaison.

Phil Ditzler

Federal Highway Administration, serves as an Ex-Officio member on the EMAC

Name	Organization
Abe Moland	Clackamas County Health and Transportation
Amanda Garcia-Snell	Washington County Community Engagement
Bill Baumann	Human Services Council
Diana Avelos Leos	League of United Latin American Citizens Latino Youth Conference
Dr. Philip Wu	Oregon Environmental Council
Dwight Brashear	SMART
Eduardo Ramos	At-large member - City of Tigard
Fabian Hidalgo Guerrero	Causa
Germaine Flentory	Beyond Black/Play, Grow, Learn
Ismael Armenta	At-large member - Oregon Walks
James Paulson	WorkSystems Inc Board
John Gardner	TriMet
Kari Schlosshauer	At-large member - Safe Routes Partnership
Michael Espinoza	Portland Bureau of Transportation
Park Woodworth	Ride Connection



Equity and Mobility Advisory Committee

May Reception

- Meeting one another

Meeting 1: Listening session

- Responding to events in our communities, nation and world

Meeting 2: July 28

- Draft charter and workplan
- Toll Projects' Equity Framework
- Update on the I-205 and I-5 Toll Projects

Given where we are in the world, at this moment, how do the demonstrations relate to the work of this committee?

Can tolls be equitable? Or, what would equitable tolls look like?

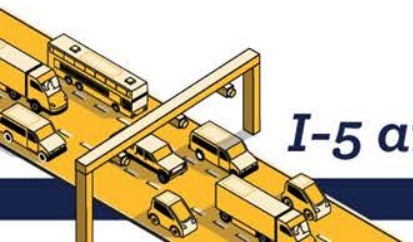
What are the historic injustices that ODOT has committed against communities of color, Albina specifically, and others in general?

How can tolls create benefits for everyone? What would that look like?

What are the metrics that demonstrate to you that ODOT is doing things differently?

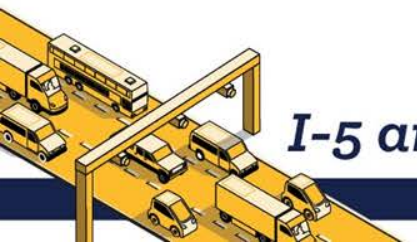
How does current transportation policy contribute to inequitable outcomes?

Are there questions / concerns / needs / fears that must be addressed in order for you to effectively work on this committee?



Contact Information

Lucinda Broussard, Toll Program Director (ODOT)
Lucinda.Broussard@odot.state.or.us
503.731.4980



Regional Congestion Pricing Study Scope

Explore and evaluate technical feasibility and performance of 4/5 different pricing tools

- Define and test different modeling scenarios on our system
- Research and technical papers
- Feedback from experts in the field (expert panel, consultants)
- Findings

Looking for TPAC input on the methods and scenarios

Schedule

TASK	*Timing*
Project Start-up - Hire consultant, work plan, coordination agreement with partners	**Summer 19-Winter 20**
Document Existing Conditions – *Technical Papers* - Research, Technical Papers	**Winter 20- Summer 20**
Establish Analysis Methods, Performance Measures, & Define Scenarios - Documented methodology	**Winter 20- Summer 20**
Conduct Scenario Analysis , Review Results, and Prepare Findings - Draft report – RCPS results and findings	**Summer 20- Late 20**
Final Report - Final report – RCPS results and findings - Expert Panel - Metro Council endorsement of findings	**Late 2020-Early 2021**

Congestion Pricing scenarios will be measured against the Region's 4 Priorities (RTP 2018)

Equity-
Reduce disparity

Climate Smart –
Reducing GHG emissions

Safety-
Getting to Vision Zero

Congestion

Expected Outcomes

RCPS findings will:

- Inform future discussions on implementing congestion pricing and policy recommendations
- Outline next steps for evaluation and further study

TPAC Survey April 2020 –
What are your Biggest Hopes and Concerns?

Hopes - focused on understanding systemic outcomes/impacts, improving network reliability, learning how to implement equity, understanding revenue, better coordination between Metro and other agency work

Concerns - Focus will be too narrow (only on certain roads or areas), or only on improving vehicle travel times, pricing will be inequitable, watered down because of political pressure, lack of public involvement and partner engagement

Performance Measures

2018 RTP Priority	Outcome Being Measured	Performance Measures Proposed for RCPS
Equity	• Accessibility	• Access to jobs (emphasis on middle-wage) • Access to community places • System completeness of active transportation network
Safety	• Eliminate fatal and severe injury crashes for all modes of travel	• Level of investment in improvements that address fatalities and serious injuries on high injury corridors
Climate Change	• Reduce emissions from vehicles	• Percent reduction of greenhouse gases per capita • Percent reduction of criteria pollutants and transportation air toxics • Percent reduction of vehicle miles traveled per capita • Shift in travel behavior
Traffic Congestion	• Multimodal travel times • Mode split/shift • Mode miles traveled (e.g. person miles traveled, vehicle miles traveled)	• Travel time between regional origin-destination pairs during mid-day and evening commute hour peak by mode of travel (e.g. transit, bicycle) • System-wide number of miles traveled (total and share of overall travel) by different modes of travel • Average weekday transit boardings for all transit service providers (e.g. TriMet, SMART, C-TRAN and Portland Streetcar, Inc.)

Pricing Scenarios

Cordon: vehicles pay to enter a congested area

Area: vehicles pay to travel within a congested area

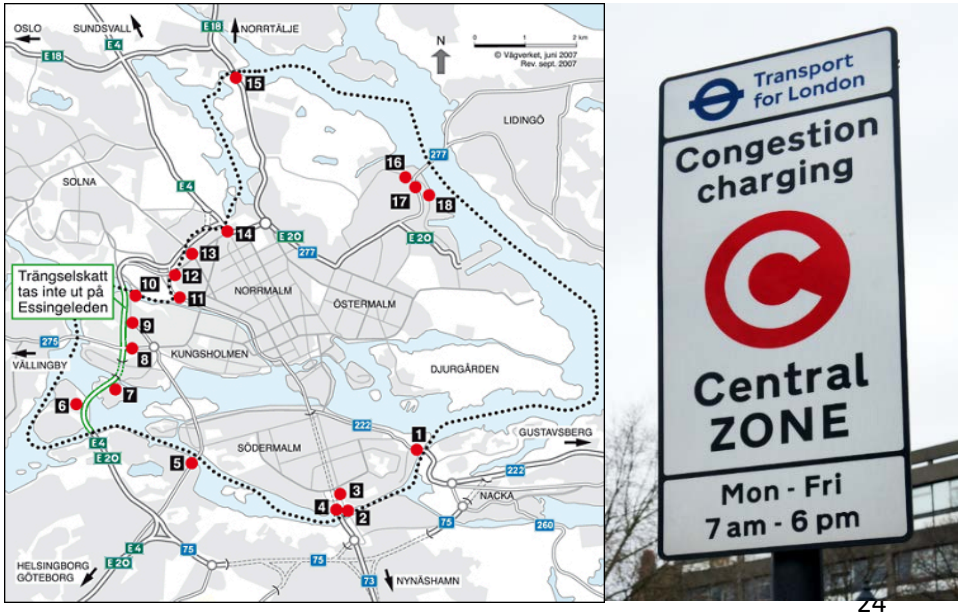
Vehicle Miles Traveled/Road User Charge: a charge based on how many miles are traveled

Roadway: a direct charge to use a specific roadway or specific roadways

Parking: charges to park in specific areas

What tools is Metro exploring?

Vehicle Miles Traveled Fee



Cordon or Area Pricing

What tools is Metro exploring?

Corridor Pricing

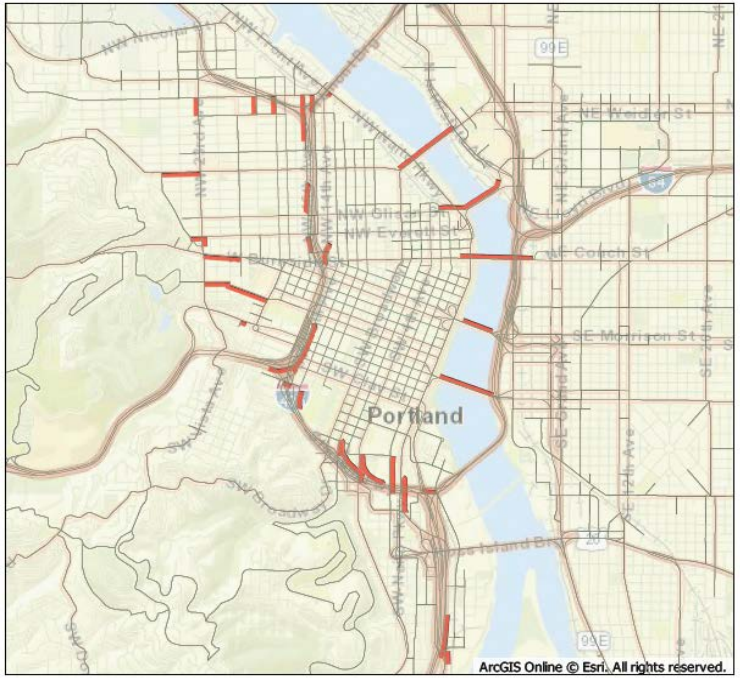
Parking Pricing

Baseline Scenario

- 2018 RTP 2027 Financially Constrained network
- Assumes no tolls
- Auto operating cost = $0.211/mile

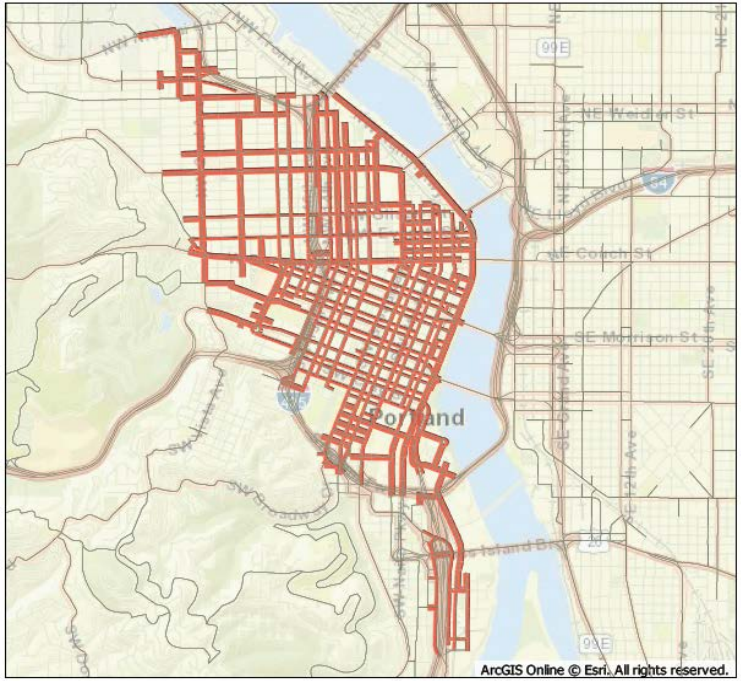
Cordon Scenario

- Defined as downtown Portland area
- Vehicles pay to enter; no toll to exit
- no charge for travel within define area
- Modeled as $5.63 (2010 $, or $7 (2020$) – based on high end of range of cordon prices in other cities



Area Scenario

- Replicates Cordon Scen. geography
- Vehicle pay per-mile charge on links within the area ($5/mile)
- Charge approximates cost of driving across the area under Cordon Scenario (Burnside from Willamette to NW 23rd Ave)



VMT Scenarios

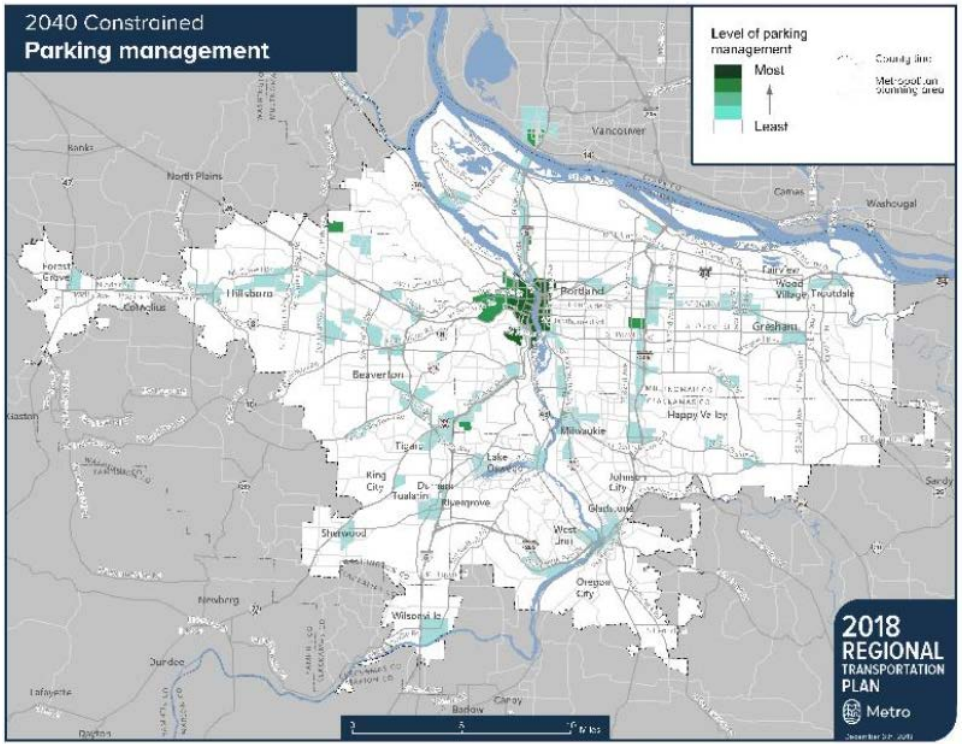
- Per-mile charge for traveling all roads in the region
- Represented as auto operating cost increase
- Run 1: OReGO gas tax replacement ($0.216/mile – 2010$)
- Run 2: $0.343/mile

Roadway Scenario

- Per-mile toll charged on selected roads
- Run 1: all freeways in the region, equivalent to VMT2 scen
- Additional runs will double, triple Roadway 1 charge

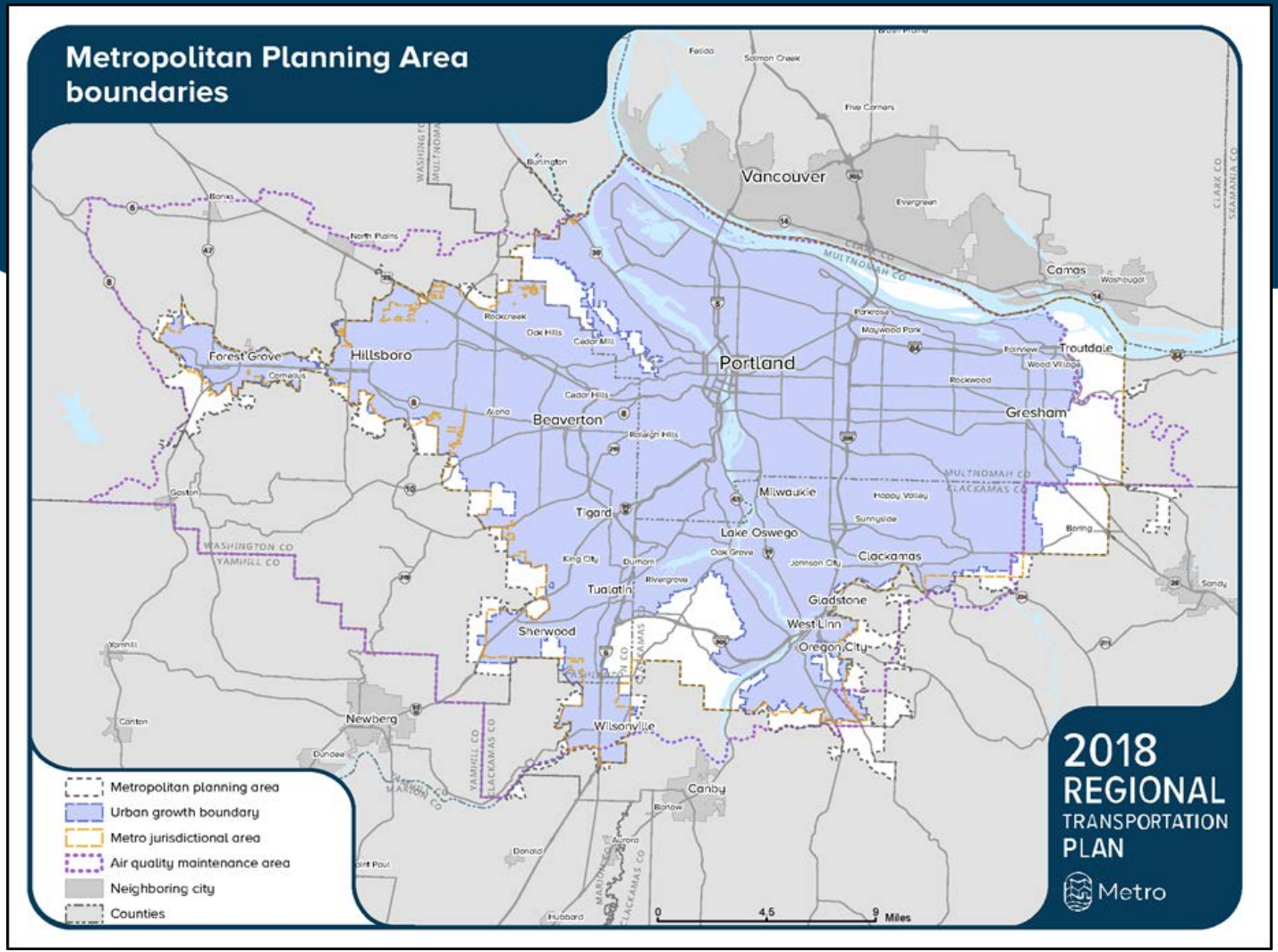
Parking Scenario

- Doubled 2040 RTP FC short- and long-term parking costs across the region
- Generally in more dense areas and high capacity transit station areas



Focus

Metropolitan Planning Area



ELEMENTS OF PROGRAM DESIGN

- Geography
- Time
- Cost
- Vehicle type
- Discounts
- Technology
- Reinvestment

Source: Nelson/Nygaard

Questions?

Are there other geographies we should consider for evaluating a cordon or area price?

Are there other geographies to consider around parking?

Are there other key roadways to consider?

Upcoming TPAC Engagement

- Analysis and testing will continue:
  - Refining scenarios and testing to better understand performance.
  - Likely to test arterials that see lots of new traffic based on the Roadway tolling tests.
  - More off-model analysis to understand performance
- Return to TPAC in the fall to share findings and get input

oregonmetro.gov

Elizabeth.mros-ohara@oregonmetro.gov

From: Marie Miller
To: Marie Miller
Subject: Follow up links from the TPAC Regional Congestion Pricing Study Workshop July 22
Date: Wednesday, July 22, 2020 3:01:44 PM

Greetings!

Thank you for attending the workshop earlier today. It was an interesting and informative session with excellent presentations, and we are grateful for your shared feedback, questions and interest in this important topic!

There were many links and websites shared by members, staff and guests at the workshop. I wanted to send these to you today. The recording from the workshop and the presentations will be sent to you soon.

Land Donation Act of 1850:
https://www.historylink.org/File/9501#:~:text=The%20Donation%20Land%20Claim%20Act%20spurred%20a%20huge%20migration%20into,or%20before%20December%201%2C%201850.

https://www.transformca.org/sites/default/files/Pricing_Roads_Advancing_Equity_Combined_FINAL_190314.pdf

https://www.portland.gov/bps/history-racist-planning-portland

https://greenlining.org/publications/2018/mobility-equity-framework/

https://www.portlandoregon.gov/phb/article/656409

https://www.portlandoregon.gov/phb/72705

https://www.oregonmetro.gov/tools-partners/grants-and-resources/community-enhancement-grants

When plans are made for another workshop this fall, I will be sending you this information. For any questions on the materials or the project please contact Elizabeth Mros-O'Hara, Elizabeth.Mros-OHara@oregonmetro.gov

Thanks, and have a great evening!
Marie

Marie Miller
Planning and Development

Metro | oregonmetro.gov
600 NE Grand Ave.
Portland, OR 97232-2736
503-797-1766

Schedule through July 31: 7:30 am to 4 pm, Tuesday to Friday, Mondays off