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SEATTLE CONGESTION PRICING STUDY PHASE 1

Pricing and Equity White Paper

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INTRODUCTION

The City of Seattle is exploring congestion pricing as a tool to address traffic congestion, reduce greenhouse gas emissions, and create a more equitable transportation system.

Congestion pricing is based on the idea that traffic congestion comes with high costs to society and to individuals in the form of air and climate pollution, traffic collisions, slower commutes, and lower economic activity. When tolls are charged—especially when based on demand so that the more congested a road becomes, the higher the fee to use it—some people make changes to some of their trips. To avoid tolls, those with the ability to change behavior may choose to drive during off-peak times, shift to carpools or transit, or combine trips.

This white paper is designed to help the City of Seattle as they prepare to seek community input, specifically input from low-income Black, brown, and immigrant communities that have historically been left out of decision-making processes related to transportation and planning and policy, around what their vision and priorities are related to transportation equity. It should also be useful for community members who are engaging in these conversations for the first time.

The white paper has the following sections:

- Overview
- Pricing: How can pricing advance racial and social justice?
- Five Key Steps in Pricing: Building equitable outcomes into pricing programs
 1. Identify Who, What, and Where
 2. Choose Equity Outcomes and Performance Indicators
 3. Determine Benefits and Burdens
 4. Devise Programs to Advance Transportation Equity
 5. Provide Accountable Feedback and Evaluation
- General Equity Impacts of Different Pricing Strategies

Phase 1 of the Seattle Congestion Pricing Study correlates with steps 1 and 2 and those steps are covered in detail in this paper. Future phases of the study would cover steps 3, 4 and 5 so those are outlined very briefly here.

OVERVIEW

Transportation has reinforced inequity

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 come at high price. The combination of a lack of infrastructure for walking and bicycling and inadequate public transportation has limited access to opportunities.¹ A Harvard study found that such access (measured as commuting time) was the *single strongest factor* behind whether people can escape poverty.² For members of marginalized communities who do own vehicles, transportation can consume over 30% of their annual income.

Transportation investments have not only favored those with the resources to own, operate, maintain, and safely store (park) a motor vehicle; they have often funded roads that cut through lower-income and minority neighborhoods, those without the political power to effectively push

roads elsewhere. As a result, low-income and minority communities have borne the brunt of air quality impacts with elevated rates of chronic illnesses triggered by air pollution.³ King County households with annual incomes less than \$35,000, for example, experience the highest rates of asthma—over 60% higher than those with incomes above \$50,000.⁴

Transportation is also responsible for an astonishing 66% of greenhouse gas emissions in the city.⁵ The same vulnerable communities that are impacted by historic social and economic inequities face disproportionate risks from climate change. For example, people with disabilities may have difficulty evacuating during emergencies, and older residents have higher risk for pre-existing health conditions.

If we are to successfully move beyond a car-centric system that marginalizes communities of color and lower incomes, we need policies that are both equitable and redress historic disenfranchisement. This is consistent with the purpose of Seattle’s Transportation Equity Program, which is to provide 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, LGBTQ people, women and girls, youth, and seniors to thrive in place in vibrant and healthy communities, and mitigate racial disparities and the effects of displacement.

Seattle is exploring new transportation solutions

Seattle faces many of the same transportation challenges as cities across the country.

Worsening traffic congestion has lengthened commutes for drivers while slowing down buses and increasing the cost of operating public transit. Projects to speed buses through low-cost improvements like those on Rapid Ride Lines can help. For example, Business Access and Transit lanes and transit signal priority at 20 intersections have shaved around 8 minutes off a ½-hour trip on the E Line. Yet most trips on transit are still not competitive with driving in terms of time and reliability. In addition, incomplete networks for people walking and bicycling deter the most affordable and often most efficient forms of transportation.

The City of Seattle is starting to explore whether congestion pricing may help achieve a variety of goals. In its initial phase of exploration, the study will look at different forms of pricing, such as charging a fee when a vehicle crosses into a zone that experiences intense congestion (known as *cordon pricing*, this approach is relatively new and has only been applied to downtowns in several international cities). Other forms of pricing may be more targeted to specific types of vehicles, for example, charging ride-hailing fleets or commercial vehicles within a specific area.

By internalizing the true costs of driving and generating revenue that funds alternative modes of transportation, congestion pricing can be one tool within a toolbox used to create an equitable transportation system. However, without inclusive decision-making processes that empower community participation, particularly those most vulnerable to impacts, and support for more affordable, accessible, and healthy transportation options, pricing may exacerbate racial and social inequity. As with so many issues, the design and implementation of congestion pricing will determine the equity outcomes.

Prioritizing equity as part of congestion pricing

The Seattle Department of Transportation (SDOT) prioritizes racial and social equity. The department established an Equity Program in 2017 to:

- Provide safe, environmentally sustainable, accessible, and affordable transportation options.
- Support disproportionately cost-burdened communities in Seattle to thrive in place.
- Mitigate the effects of displacement, including racial disparities related to displacement.

SDOT is committed to prioritizing affordable transportation options and defining broader transportation equity goals and strategies in partnership with community members and other stakeholders. The department launched a community-based Transportation Equity Workgroup in early 2019 to support the development of an equity framework. This effort is especially vital for major funding and policy proposals like congestion pricing.

Additional resources

For those who would like to dive even more deeply into issues of pricing and equity, an excellent guidebook and toolbox for planners who are leading these planning processes was released by the National Cooperative Highway Research Program (NCHRP), *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes*. At well over 400 pages, it is likely overly technical for people who don't typically conduct detailed planning studies. Yet it has many excellent examples of where a particular tool, analysis, or strategy has been used to help advance equity. The most relevant sections are referenced at the ends of steps 1 and 2 below. We encourage city officials and equity advocates who dive deep into planning to reference this guide.

TransForm, with support from the National Resources Defense Council (NRDC), recently released [Pricing Roads, Advancing Equity](#), a report and companion toolkit that explore these issues in greater depth.⁶

The City of Seattle's Racial Equity Toolkit has served as an important reference in developing this 5-step framework.

PRICING

How can pricing advance racial and social justice?

Congestion pricing is based on the idea that traffic congestion comes with high costs to society and to individuals in the form of air and climate pollution, traffic collisions, slower commutes, and lower economic productivity. When tolls are charged—especially when based on demand so that the more congested a road becomes, the higher the fee to use it—some people make changes to some of their trips. To avoid tolls, those with the ability to do so may choose to drive during off-peak times, shift to carpools or transit, combine trips, or even choose a different destination.⁷ Those with the ability to pay enjoy a faster trip with less congestion. Even a relatively small reduction in the number of vehicles on the road can significantly reduce delays for everyone.

Cities such as London, Stockholm, Singapore, and Milan have implemented cordon or area pricing for their downtowns while greatly expanding their public transit networks, typically reducing driving (vehicle miles traveled) by 15-20% and congestion by 30% or more. In addition to Seattle, other North American cities including Vancouver, San Francisco, and New York are exploring congestion pricing.

There can be problems and unintended consequences with pricing. When implemented without a clear focus on social and racial equity, it can act as a mobility tax that burdens low-income people

with new costs, just when skyrocketing housing costs are forcing many to move to the suburbs where driving is often the only option for most trips.

The chart below identifies some basic strategies that can address affordability and meet other important goals. A deep analysis of affordability for those who currently drive—as well as for people who use other modes—will be an important part of the next phase of this study.

Seattle has a chance to design a program that prioritizes racial and social equity, but key questions remain: Can we harness the efficiency of congestion pricing to identify and implement strategies that are *also* equitable? Is it possible for disadvantaged and vulnerable communities, who currently suffer from inadequate access to opportunities (and for those that drive, high relative costs) to *benefit* from road pricing proposals? Pricing Equity Step #2 looks at the types of outcomes and indicators that can be used to evaluate whether the chosen strategies can combine to advance a racial and social equity agenda.

As part of future public engagement, there will be several opportunities to identify priority strategies that are on this list and specific ones that should be added. Some strategies may have been identified by the community in previous planning efforts, but still need to be funded. Other strategies may look beyond making transportation more affordable to also consider whether there are ways to stem displacement.

Figure 1 Sample Strategies to Advance an Equity Agenda

STRATEGY	EXAMPLES	CONSIDERATIONS
Affordability and Driver Assistance	Driver Discounts, Caps & Exemptions, such as: <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • ORCA LIFT transit discounts • Subsidize bike and car share costs 	
Greater Mobility Options and Safer Active Transportation Networks	Improved Transit Service <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Carpool matching services • New vanpool routes 	These may be effective ways to serve suburban and rural areas.
	Pedestrian/Bike Improvements <ul style="list-style-type: none"> • Improved pedestrian network 	Must be useful to enough people to qualify as an equity promotion measure.

	<ul style="list-style-type: none"> • Improved bicycle network • Pedestrian-scale lighting 	
	<p>New Mobility Programs, such as:</p> <ul style="list-style-type: none"> • Bike share • Car share • Creative use of rideshare to connect to transit • Shuttles • Carpool apps and programs 	<p>Even when affordable, access might be limited. Options should exist for people without smartphones and people who speak languages other than English.</p> <p>Consider opportunities for community-owned mobility models.</p>
<p>Programs for Seniors and People with Disabilities</p>	<p>Accessible Information (senior help lines, materials)</p>	<p>Must be easy for seniors to access and plan trips.</p> <p>Consider opportunities to support peers in providing information (also applies to other communities).</p>
	<p>Targeted Transit/Shuttle Routes</p>	<p>Must serve destinations accessed frequently by seniors at the right times.</p>
<p>Healthier Communities</p>	<p>Encourage Clean Air Vehicles</p> <ul style="list-style-type: none"> • Credits for drivers • Purchase clean transit vehicles 	<p>Transit should be prioritized on routes that pass through marginalized communities.</p>

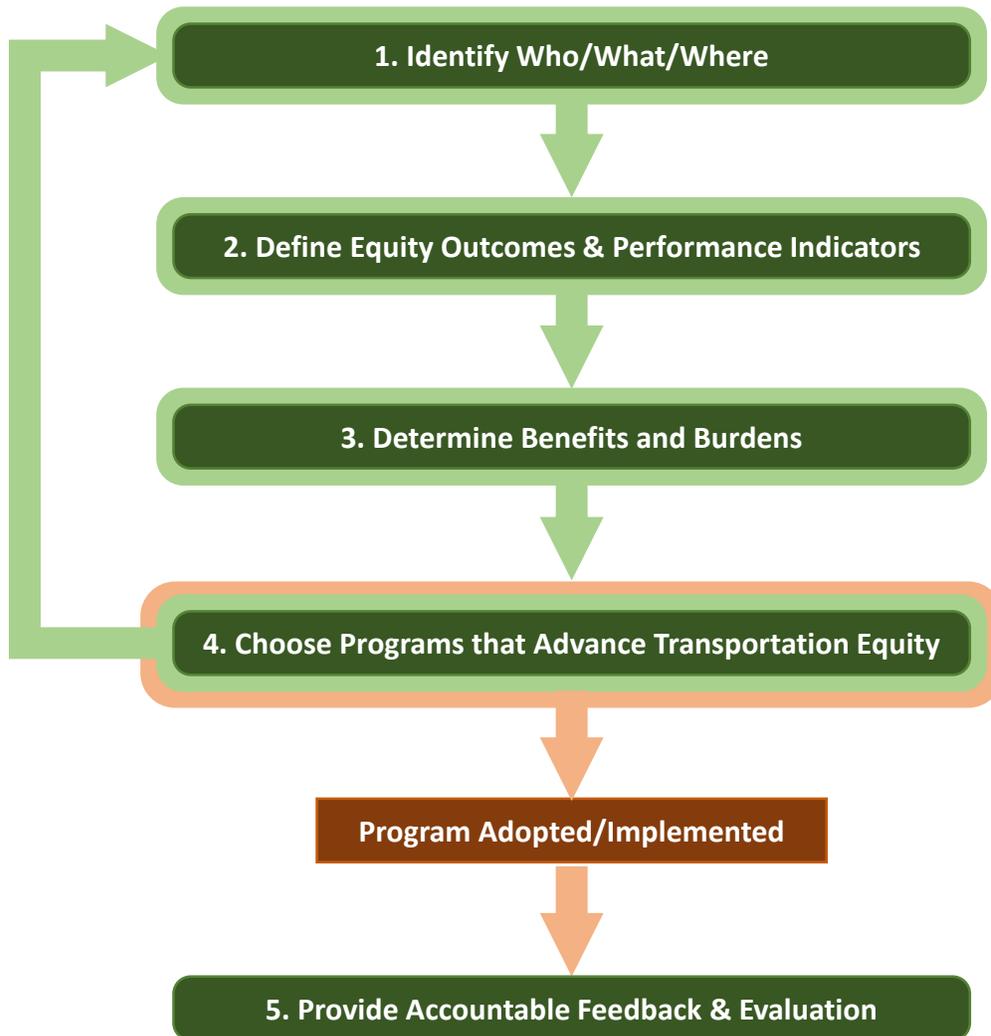
FIVE KEY STEPS IN PRICING EQUITABLY

Building equitable outcomes into pricing programs

Separate from this Seattle-focused document, TransForm developed a congestion pricing and equity toolkit that can be used by any organization considering pricing. Its focus is on supporting equity advocates and decision-makers in designing and implementing a pricing program that can advance a racial and social justice agenda.

The toolkit lays out five primary steps, from program design to implementation. This process, though, is not linear. The following graphic depicts the iterative nature of the process.

Figure 2 Congestion Pricing and Equity Toolkit Steps



Once an initial set of actions is identified, these should be reviewed in light of the first set of steps in this Toolkit. Does the initial specification of who, what, and where need to be adjusted? Are the chosen indicators adequate to framing the impacts? What more might be needed? Are benefits and burdens properly distributed? What else needs to be addressed? What changes in program elements, or new elements, are suggested as a result of this analysis?

It is only after a set of iterations that the final pricing proposal should advance through the approval and implementation processes.

The following pages of this white paper are intended as a primer to support strong participation and deep engagement from vulnerable communities. Each section includes some sample questions that can be asked at that stage in program development.

To align with Seattle's process, which is in its very earliest phase, this white paper focuses on the first two steps. It should be expected that the first several steps often overlap and are iterative.

When defining indicators in step 2, for example, it is important to understand what can actually be measured and how, which is a focus of step 3.

Needless to say, engagement and collaboration with a broad array of community stakeholders will be critical to producing equitable outcomes. In more traditional transportation projects, engagement is focused on the initial scoping to the point when the final project is chosen. Congestion pricing, however, is a more dynamic tool than a typical transportation infrastructure project. Even after implementation, pricing projects are typically 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.

PRICING EQUITY STEP #1: Identify Who, What, and Where

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

- Who?** The populations that need to be considered from a racial equity and social justice perspective. Using SDOT's Racial Equity Toolkit will complement and support this critical first step, strengthen the analysis, and help clarify the equity outcomes.
- What?** The type and nature of pricing to be considered. Complementary strategies may also be discussed at a high level.
- Where?** The geographic reach of the study.

In planning terms, this stage is where the study's *scope* is developed. Seattle is currently in the very initial part of Step #1. This first step started late in 2018 and will continue through early 2019. It will create a more detailed lens for future research, outreach, and program design.

Who: Populations to be studied

Any equity study is required to look at the impacts of major transportation projects on *minority* and *low-income* populations. Under 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.

From an equity perspective, it is important to lead an analysis by examining race and then any other intersecting identities, as well as historically underinvested areas. Seattle's Transportation Equity Program leads with a racial equity analysis and assesses other intersecting identities to determine specific needs and desired outcomes sought among immigrants and refugees, people living with disabilities, people experiencing homelessness and housing insecurity, LGTBQ people, youth, girls and women, and seniors.

Who else may be considered? Should the study look at barriers and issues specific to immigrants and refugees, local small businesses, and even services like non-profit meal delivery services? These are important questions during this initial scoping phase. Once a more comprehensive study is underway the community may identify additional focus populations.

Figure 3 Questions to Ask About Populations to be Studied

QUESTIONS TO ASK:	
1.1	Are all populations adequately addressed in the study? <i>Should priority be given to certain populations? Why?</i>
1.2	Does the way groups are designated capture all relevant people? <i>For example, several studies from Seattle, King County, and Puget Sound Regional Council provide maps of vulnerable communities. Which of these should be a focus? How can we make sure to account for vulnerable residents who aren't in these areas of concern?</i>
1.3	Are the criteria used to identify groups fair and accurate? <i>For example, does the measure of household income adequately capture the target population? In some metro areas, for example, households earning up to twice the Federal poverty level may still be economically disadvantaged and in need of more equitable policies.</i>

What: The proposal and viable alternatives

Seattle is starting with a wide view of potential congestion pricing strategies to study. The initial list of tools that may be considered is shown in the table below; more information about each is available in the Pricing Tools white paper prepared as part of this study.

Figure 4 Pricing Tools Summary

Pricing Tools Summary	
PRICING TOOL:	DESCRIPTION:
Cordon Pricing	Charge vehicles crossing a boundary into pricing zone
Area Pricing	Charge vehicles for crossing a boundary and for driving inside an area pricing zone
Fleet/Vehicle Class Pricing	Charge specific vehicle types entering a zone, such as ride-hailing or commercial vehicles
Connected/Autonomous Vehicle (C/AV) Zone	Create a zone that allows only licensed connected and/or autonomous vehicles
Fossil Fuel Free Zone (FFFZ)	Create a zone that allows only licensed non-fossil fuel vehicles; can also allow all types of vehicles and charge those that are not low-emissions vehicles (called a Low-Emissions Zone program)
License Plate-Based Restriction Zone (LPRZ)	Restrict access to a zone based on license plate numbers; functions as a management tool that has a similar effect to a pricing tool

Pricing Tools Summary	
PRICING TOOL:	DESCRIPTION:
Road Usage Charge (RUC)	Restrict access to a zone to vehicles enrolled in a RUC program that levies a per-mile charge, potentially by time of day and/or location
Arterial Toll Roads	Toll all lanes of an arterial road
Arterial Express Lanes	Convert or add lanes on arterial roads as tolled facilities; some lanes remain unpriced
On-Street Parking Pricing	Vary street parking prices to control demand
Off-Street Parking Pricing	Apply a variable fee/tax to off-street parking facilities

During this first phase it will be necessary to narrow down the types of pricing that may be studied. This can be done by an initial screening of the impacts and benefits of the options above. The chosen options should then be subject to a more detailed analysis along the lines of the Toolkit’s step #3, *Determining benefits and burdens*. This is similar to the process Vancouver is employing, as described in the case study below.

Figure 5 Case Study: Vancouver

Vancouver has mounting congestion, continued population growth, and two bridges that were tolled while others were not, leading some to drive extra distances to avoid the cost. 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).

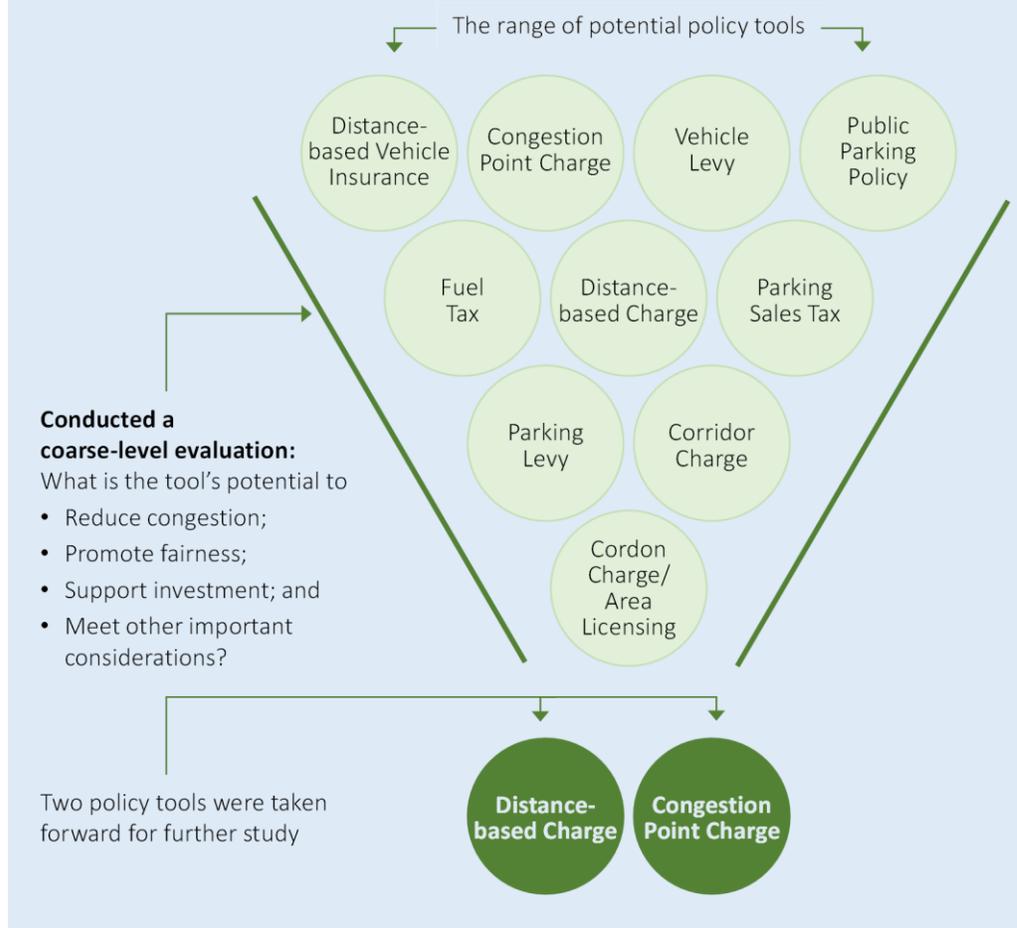


Figure 6 Questions to Ask About Pricing Tools to be Studied

QUESTIONS TO ASK:	
1.4	Are there any additional pricing strategies that should be considered? <i>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?</i>
1.5	Do the scope (and budget) of the planning study allow for a number of iterations so the equity strategies can be refined to best meet the goals and indicators?
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 living and working far from the facilities being studied. It is important at an early stage to set the project boundaries so that vulnerable populations that may be impacted are within the study area. An understanding of current displacement trends and rates is important in determining who is disproportionately impacted; this will also inform development of a strategy that would not adversely impact already impacted communities.

This initial phase will describe the possible locations of the project relative to the existing transportation network, the location of vulnerable populations, and key destinations. In future phases of study, the question of geography can become even more fine-grained, looking at not just key employment centers but the location of health care, religious, cultural, social, educational, retail, recreational, and public and human service facilities and how vulnerable communities that use those may be helped with new mobility options or other tools to mitigate any increase in costs.

While it's not possible for a study to include *every* commuter or traveler—some might be passing through from distant cities, for example—it is desirable to include as many as possible. The initial geographies are also important because they help to determine who should be the focus of the public engagement plan.

Figure 7 Questions to Ask About Geographic Reach of Study

QUESTIONS TO ASK:	
1.7	Are all potentially impacted and vulnerable populations within the project study boundaries?
1.8	Do we know the other critical services that are regularly used by the relevant populations? Are these included within the study boundaries? <i>Examples of such services include shopping, medical care, education, religious, and recreation.</i>

**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.⁸ 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.⁹

PRICING EQUITY STEP #2 Define Equity Outcomes and Performance Indicators

Another important early 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.¹⁰ These include overall ideas of fairness, such as by geography, not just those related to vulnerable communities. This white paper 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, addressing *historical inequities* that continue to affect vulnerable communities.

Outcome Equity focuses on the actual *impact* of the program. TransForm recommends consideration of at least three dimensions of Outcome Equity, and Seattle may want to consider others, such as wealth creation:

1. Affordability;
2. Access to opportunities; and
3. Community health.

It is important to be clear on proposed 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).

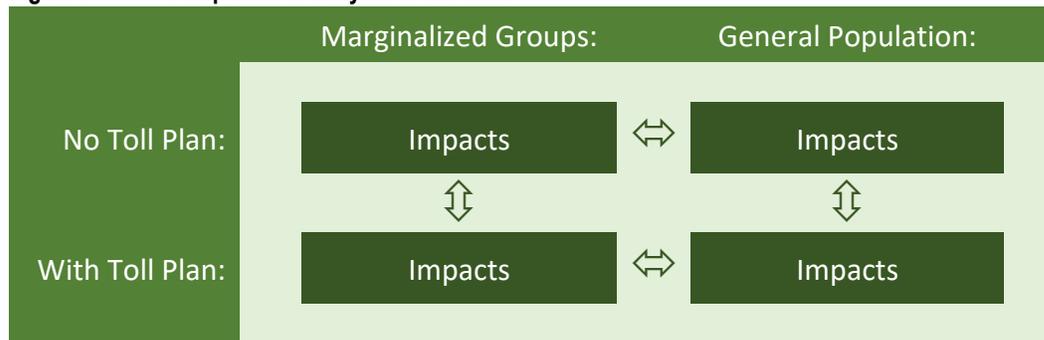
This section provides a short discussion of each of the four dimensions noted above. This is followed by a chart with some sample indicators for each dimension.

Note that most of these indicators—such as changes in transit ridership or the percent of toll revenue spent to benefit marginalized communities—can be predicted ahead of time using models and formulas. Later on, these indicators can also be used to monitor, evaluate, and improve the program. While the methods and data to evaluate some indicators are imperfect, expensive to collect, and often time consuming, they are an important focus.

It is often useful 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: ones comparing impacts from the road pricing proposal with what may be expected if road pricing is *not* adopted, and one comparing 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 25 years).

The following chart depicts these comparative analyses, with arrows showing where the comparisons take place:¹¹

Figure 8 Comparative Analysis Framework



In addition to these comparisons, the study will also compare different pricing strategies against each other. 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. They 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) would need to be returned to low income households through rebates, discounts or other measures. This measure can be used to compare how equitable—or inequitable—different kinds of charging are in practice.

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 the peak? 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 with serious consequences.

Affordability

At the heart of the affordability question is: Will the proposed pricing project make transportation *more expensive* for some members of vulnerable communities? If so, by how much? How can the proposal be designed to advance equity?

Given there will also be a stream of revenues that can be distributed, it is also important to ask if there are ways transportation can be made *more affordable*. Unlike sales taxes, fuel taxes, and many other transportation funding sources, toll programs can offer means-based affordability options that give discounts, set caps (the maximum amount that someone might need to pay), provide rebates or fully exempt certain drivers.

It is also possible to provide lower-cost alternatives, for example, expanding the breadth of the ORCA Lift fare discount, or deepening the discount (from the current half-price for those who qualify based on income¹²). ORCA Opportunity, for example, already provides free, unlimited transit for high school students, income-qualified middle school students at Seattle Public Schools, and Seattle Promise Scholars.¹³ While currently funded through other sources, many of these equity programs—and new ones—could be funded through a congestion pricing plan.

Expanded and faster transit options may also allow some people to reduce their overall transportation costs by reducing private vehicle use or even ownership. London added 300 buses to prepare for congestion pricing. Los Angeles started two rapid bus lines as part of their freeway Express lanes on I-10 and I-110, along with allocating 40% of ongoing net revenue to public transit improvements and 40% to bicycle and pedestrian safety.

Performance indicators should capture the impact and scale of pricing on all households from marginalized communities—both drivers and non-drivers. An excellent study of highway tolls in the Puget Sound Region was conducted in 2011 and shows how considering the full population, and not just those expecting to pay tolls or fees, is the appropriate analysis and is in accord with standard best practice in distributional studies of taxes.¹⁴

Evaluation will also look at how costs may vary by geography. The following table illustrates sample indicators to assess impacts on affordability.

Figure 9 Sample Indicators to Assess Impacts on Affordability

Affordability	
CATEGORY	SAMPLE INDICATORS
Discounts	<ul style="list-style-type: none"> • Discount level on tolls for low-income and other populations • Discounts on transit fares or other alternatives (subsidized by tolls)
Regressiveness	<ul style="list-style-type: none"> • Degree to which discounted 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

Participants	<ul style="list-style-type: none"> • Number of people from marginalized communities participating in (or eligible to participate in) discounted tolls or transit fares • Ratio of those who are eligible for the equity pricing programs (both for car drivers and for non-driving strategies like discounted transit) to those who have actually signed up
Subsidies	<ul style="list-style-type: none"> • Amount of toll revenue invested in transportation subsidies for marginalized communities (and as a share of total net revenue)
Savings	<ul style="list-style-type: none"> • Total expected savings from toll and other subsidy programs for marginalized communities

Figure 10 Questions to Ask About Affordability

QUESTIONS TO ASK:	
2.1	How will congestion pricing affect the travel costs of low-income drivers and non-drivers?
2.2	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?
2.3	Do we have enough data on travel patterns and the potential changes in travel behavior to understand the potential financial impact of the tolls? <i>Would it be useful to complement that data with focus groups or surveys?</i>

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, cultural, 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 increase access, especially for those who rely on public transit and drivers who find it worth the expense to use the priced facility or area. Transportation projects and programs also provide opportunities for job training, employment, and contracting that can support goals for equity and inclusion.

There are two big areas of concern with regard to access. The first is for drivers from marginalized communities who may decide to detour to avoid the charge, creating both a time cost (essentially reducing their access), and potentially increased costs for gas and vehicle use. The second concern is whether the mechanics of toll payment restrict opportunity by creating barriers to use; for example, requiring drivers to front sums of money (e.g., for transponders or prepaid tolls) or to have a credit card or bank account to link to their accounts.

Figure 11 Sample Indicators to Assess Access to Opportunity

Access to Opportunity	
<i>CATEGORY</i>	<i>SAMPLE INDICATORS</i>
Funding	<ul style="list-style-type: none"> • Absolute dollar amount invested in transit and mobility options in/that benefit marginalized communities including: <ul style="list-style-type: none"> ➢ New transit routes ➢ Increased frequency ➢ Subsidies for vanpools, new mobility options, etc. • Percent of funds from tolls spent supporting expanded mobility options that benefit marginalized communities.
Service Quality	<ul style="list-style-type: none"> • Changes in transit speed, reliability, and quality that directly impact marginalized communities. • Changes in travel speeds and/or reliability for cars, HOVs, and those paying tolls.
Service Levels	<ul style="list-style-type: none"> • Number of new transit miles, routes, or transit vehicle levels that benefit marginalized communities.
Transit Use	<ul style="list-style-type: none"> • Increase in marginalized people’s transit ridership attributed to transit investments. • Increase in the number of riders that use discounted fares each year.
Ratios	<ul style="list-style-type: none"> • Number of marginalized people paying the toll compared to those that change routes to avoid the toll (note: this information requires extensive surveys). • Amount of investment in marginalized communities vs. other communities.
Access	<ul style="list-style-type: none"> • Change in the number of jobs, services, etc., that marginalized communities can access within a 30 or 45 minute window, by mode.

Figure 12 Questions to Ask About Access to Opportunity

QUESTIONS TO ASK:	
2.4	Are key community destinations being analyzed and are any missing?
2.5	What alternative transportation choices (roads, transit, etc.) will be available to those who cannot afford the toll? For those who are likely to drive alternate routes, what is the time penalty?
2.6	Are potential benefits being fully considered (e.g., the potential increase in bus speed), both when the project is implemented and further into the future?

Community Health

Low-income populations and populations of color have historically borne a greater share of the negative health impacts of transportation systems. Freeways were often built through lower-income and minority communities, imposing higher levels of asthma and other health impacts of

air pollution and noise. Lack of infrastructure means marginalized communities also have higher death and injury rates from walking and bicycling.¹⁵

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 bicycle and pedestrian infrastructure or clean vehicles.

Figure 13 Sample Indicators to Assess Impacts to Community Health

Community Health	
CATEGORY	SAMPLE INDICATORS
Infrastructure	<ul style="list-style-type: none"> • Absolute dollar amount of funds spent on bike and pedestrian improvements in marginalized communities. • Miles of effective/safe bike lanes and sidewalks added or improved.
Funding	<ul style="list-style-type: none"> • Percent of toll revenues spent on bike and pedestrian improvements in marginalized communities.
Safety	<ul style="list-style-type: none"> • Change in collisions, death, and injury rates due to traffic reduction on facilities that receive investment.
Trips	<ul style="list-style-type: none"> • Change in the number of bicycle and pedestrian trips.
Air Quality	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Anticipated health benefits, disease reduction, and improvements in life expectancy (can be predicted using Integrated Transport and Health Impact Model or another model).

Figure 14 Questions to Ask About Community Health

QUESTIONS TO ASK:	
2.7	Do the main health indicators include the ones that were prioritized by marginalized communities?
2.8	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?
2.9	What changes in air pollution are expected? <i>Where do these occur? Who do they affect?</i>
2.10	What impacts on bicycle and pedestrian safety are projected?
2.11	Will changes resulting from road pricing reduce traffic and bring more community cohesion? <i>Would pricing further isolate some communities or particular populations?</i>

Full Participation and Empowerment

Process equity is focused on participation in the planning and decision-making process. The Greenlining Institute's [Mobility Equity Framework](#) lays out a compelling case and framework for how and why this is the most important aspect of designing a policy or program. Since low-income groups and communities of color have historically been disenfranchised from full participation and empowerment, 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, reflected, and weighted throughout the process.

The following chart depicts the kinds of activities associated with greater degrees of involvement. This is followed by a table of sample indicators for participation, as well as a table with questions to ask.

Figure 15 Activities Associated with Degree of Involvement

Increasing Degree of Participation →						
Level	←				→	Maximum
Public Participation Goal	Marginalized communities are provided information on the project.	Marginalized communities provide feedback to the goals.	Solicitation of public concerns and aspirations is ongoing.	Agencies closely partner with community groups throughout the project.	Marginalized communities have a seat at the decision-making table.	
Sample Outreach Strategies	<ul style="list-style-type: none"> • Fact sheets • Websites • Open houses 	<ul style="list-style-type: none"> • Public meetings • Public comment • Focus groups • Surveys 	<ul style="list-style-type: none"> • Workshops • Deliberative polling 	<ul style="list-style-type: none"> • Advisory committees • Consensus building • Participatory decision-making 	<ul style="list-style-type: none"> • Resident juries • Ballots • Delegated decisions • Formal representation on decision-making groups 	

Based on NCHRP and the International Association of Public Participation

Figure 16 Sample Indicators to Assess Participation

Full Participation	
CATEGORY	SAMPLE INDICATORS
Activities	<ul style="list-style-type: none"> • Number of meetings and focus groups with marginalized communities. • Dollar amount and/or percentage of project budget dedicated to equity outreach programs.
Communications	<ul style="list-style-type: none"> • Number of languages into which materials are translated. • Share of principal languages spoken in the community into which materials are translated.

	<ul style="list-style-type: none"> Number of ethnic media outlets that receive information and publish articles about the proposal, or are targeted for advertising community meetings.
Organizations	<ul style="list-style-type: none"> Staff time dedicated to technical support and funding to Community-Based Organizations (CBOs) to conduct/participate in needs assessment.
Participants	<ul style="list-style-type: none"> Number of individual voices that have contributed to the community needs assessment.
Responsiveness	<ul style="list-style-type: none"> Number of community-identified priorities that are being implemented as part of the program.

Figure 17 Questions to Ask About Participation

QUESTIONS TO ASK:	
2.12	<p>Where is the planning process on the “Degree of Participation” scale? <i>Does it need more resources or political support to move further right on the spectrum?</i></p>
2.13	<p>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?</p>
2.14	<p>Are the comments and priorities of marginalized communities being actively catalogued? <i>Are there plans to address these priorities in a clear and transparent way?</i></p>

ADDITIONAL RESOURCES

Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox has several useful lists:

- 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 Equity Indicators which it recommends for equity studies (pp. 11-13).¹⁶

PRICING EQUITY STEPS #3-5

3. Determine Benefits and Burdens

Once a set of *performance indicators* is adopted, the project team should conduct studies to determine the impacts of the proposed alternatives. 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.

There will likely be an iterative process between this stage and the previous two stages. Results of the analysis will both inform further development of the proposal, and raise new angles in the

understanding of the equity impacts, requiring new or amended indicators. International experience suggests that five or more iterations may be necessary.

4. Choose Programs to Advance Transportation Equity

The purpose of this stage is to identify which set of policies and measures can best maximize equity across all groups and minimize the harm to vulnerable populations. Some of the most relevant strategies may already have been identified and even implemented (in part or in full) in local or regional plans or in community group transportation recommendations for other projects.

5. Provide Accountable Feedback and Evaluation

Road pricing strategies, once implemented, will lead to shifts in travel behavior; pricing revenues will also begin to flow to programs and efforts aimed at improving equitable outcomes. The nature of pricing also allows for charge levels, time periods, discounts and—to an extent—charge locations to be adjusted to maintain and maximize positive outcomes and address issues that emerge. Ongoing monitoring and evaluation can help identify problems or issues that may emerge, as well as point to new opportunities to help advance equity.

Seattle should ensure that:

- Monitoring and evaluation occur along a reasonable timeline.
- There are agreed-upon mechanisms for providing feedback to the community and decision-makers on both the successes and shortcomings of the program, as well as to highlight and act upon emerging opportunities.
- The results of monitoring and evaluation are communicated clearly and consistently with affected communities.

EQUITY IMPACTS OF PRICING STRATEGIES

At the very highest level, the following charts give a sense of how an overall pricing program and investment strategy can be inequitable, and ways they can be made more equitable or even advance an equity agenda. The first half on “pricing strategy” refers to the way the fees are applied, while the next half on “revenue investment” refers to the allocation of funds generated by congestion pricing, although these funds may be complemented by other sources.

Figure 18 Pricing Strategy Equity Matrix

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.

Figure 19 Revenue Investment Equity Matrix

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).

NOTES

¹ Martin Wachs, in his history of transportation planning in Los Angeles, notes that LA had for decades planned a relatively balanced set of modal investments, with transit an important component, but the US 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* (New York, NY, 6 May 2015), p. A3. This article provides a clear summation of the research report, which is otherwise highly 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 King County Public Health Community Health Needs Assessment: Available at: <https://www.kingcounty.gov/depts/health/data/community-health-indicators/~media/depts/health/data/documents/2018-2019-Joint-CHNA-Report.ashx>

⁵ City of Seattle. 2018 Seattle Climate Action Plan. Available at: http://durkan.seattle.gov/wp-content/uploads/2018/04/SeaClimateAction_April2018.pdf

⁶ <http://www.transformca.org/resources/reports>

⁷ A 2008 study gave 275 household in Seattle a cash sum to spend on driving trips. With equipment to monitor driving they were 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. The agency in charge showed that if these tolls were implemented regionally they'd dramatically reduce congestion at peak time and increased average travel speeds. Yet 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.

⁸ <http://www.seattle.gov/civilrights/programs/race-and-social-justice-initiative/racial-equity-toolkit>

⁹ greenlining.org/publications/2018/mobility-equity-framework/

¹⁰ 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).

¹¹ Adopted from 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), p. 56.

¹² www.seattle.gov/transit/orca-lift. Accessed on 2 October 2018.

¹³ www.seattle.gov/transit/orca-opportunity. Accessed on 2 October 2018.

¹⁴ 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*. National Institutes of Health, Author Manuscript, August 7, 2011.

¹⁵ People of color and the poor are overrepresented in active transportation fatalities and serious injuries in Washington State. From 2013 to 2017, about 59% of fatal and serious injury crashes in Washington occurred in geographic areas with a rate of poverty higher than the state average, despite these areas only accounting for 43% of the population. People living in poverty include an over-representation of people of color, the elderly, and people with disabilities. From 2013 to 2017, American Indian or Alaska Native people represented 2% of the total population yet accounted for 6% of active transportation traffic

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Prepared for the Seattle Department of Transportation

fatalities in Washington. From: WSDOT's Active Transportation: Annual Safety Report
<http://wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Mar18.pdf>

¹⁶ Hana Creger, Joel Espino, and Alvaro S. Sanchez. *Mobility Equity Framework: How to Make Transportation Work for People* (Oakland, California: Greenlining Institute, 2018).