



TOLLING AND AFFORDABILITY: RESEARCH

Affordability refers to impacts to people experiencing low-income or economically disadvantaged groups. Further definition of the term is provided in the Equity Framework ([link](#)) and the Equity and Mobility Advisory Committee (EMAC) Charter ([link](#)).

The purpose of this document is to provide members of the Equity and Mobility Advisory Committee (EMAC) key takeaways from research and comparable examples of how tolling (or congestion pricing) projects address impacts to transportation affordability for people experiencing low incomes.

This information may serve as a resource to the EMAC members, as they progress towards drafting policy and strategy recommendations for the Oregon Transportation Commission and the Oregon Department of Transportation.

HOW IS AFFORDABILITY ADDRESSED WITH TOLLING?

The following were key takeaways from our review of toll project examples and research:

- 1. Tolls could be a more equitable way of funding transportation, compared to the status quo. To understand whether the toll program is advancing equity, analysis should identify the percentage of household income that lower income drivers will pay as compared to higher income drivers.**

According to the Federal Highway Administration (FHWA),¹ without congestion pricing [tolls], the costs of providing peak-period highway service are borne by more people than those who are using the highway. Placing more of the burden of paying for peak-period highway service on those who use it is viewed as an improvement by the FHWA.

Congestion pricing [tolls] can be less burdensome to low-income drivers than systems that are based on regressive taxes, such as car-registration fees, sales taxes, and the gas tax. For example, low-income drivers usually drive older vehicles that are not as fuel-efficient as newer models and pay higher fuel taxes for each mile driven.

Example: On I-394 in Minneapolis, MN, the first attempt at implementing High-Occupancy Toll (HOT) lanes in 1997 met resistance in large part because of public belief that only high-income users would benefit. A second attempt approximately 9 years later succeeded in part because advocates made the case that all income groups value time savings and reliability for certain trips.

- 2. People of all incomes travel at all times, but the research² suggests that middle and higher income people are more likely to travel at the busiest times—and thus are more likely to pay congestion charges [tolls].**

According to the Federal Highway Administration,³ the benefits of tolling may not be distributed equally. High-income users are more likely to remain on the highway, pay the

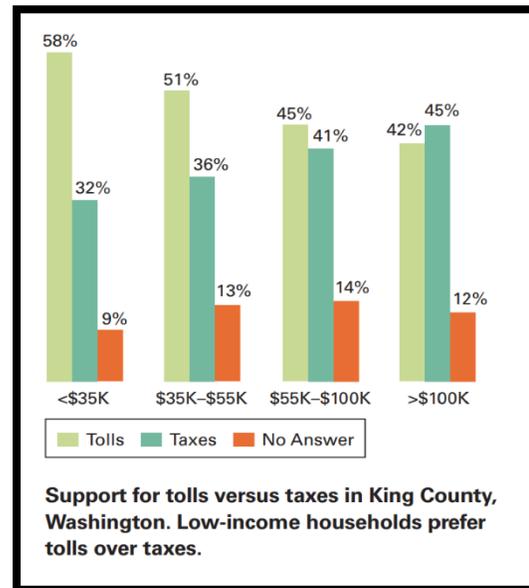


Figure 1. FHWA Primer: Income-Based Equity Impacts of Congestion Pricing (2008)

¹ "Income-Based Equity Impacts of Congestion Pricing: A Primer." Federal Highway Administration (2008).

² Ibid.

³ Ibid.

congestion fee, and benefit from a faster trip. Low-income users may be worse off if they choose other less-expensive times, routes, or modes.

For the I-205 Toll Project, an I-205 Corridor User Analysis report was prepared to better understand travel patterns on I-205 near the Abernethy Bridge. The demographic estimates⁴ showed that users appear to largely mirror the demographic characteristics of the region as a whole, and for Clackamas County specifically.

Table 1. Race and Ethnicity - Comparison of I-205 Users to Portland Metro Area

	White	Black	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Other Race	Multiple Races	Hispanic*
I-205 Users	84%	2%	1%	5%	Less than 1%	4%	4%	10%
Clackamas County	88%	1%	1%	4%	Less than 1%	3%	3%	8%
Portland Metro**	81%	3%	1%	6%	Less than 1%	5%	4%	11%

Source: StreetLight, U.S. Census Bureau, 2010

* Hispanic is an ethnicity, and people who identify as Hispanic can be of any race.

** Portland Metro refers to the census Portland-Vancouver-Hillsboro, OR-WA Metropolitan Statistical Area.

Table 2. Income Level - Comparison of I-205 Users to Portland Metro Area

	Less than \$50,000	\$50,000 to \$125,000	More than \$125,000
I-205 Users	41%	43%	16%
Clackamas County	40%	44%	16%
Portland Metro*	44%	42%	14%

Source: StreetLight, American Community Survey 2010 5-Year Estimates

* Portland Metro refers to the census Portland-Vancouver-Hillsboro, OR-WA Metropolitan Statistical Area

3. The impact on workers who are receiving lower pay is a concern.

Congestion pricing [tolls] may make it too difficult or too expensive for lower income workers to get to their jobs. Entry-level jobs may not be well served by public transit. Even if transit service exists, work hours are during off-peak times, making public transit use less appealing as an option. Many low wage workers need to drive to retain their jobs.

⁴ This analysis used StreetLight Data Inc.'s mobility platform as a primary tool along with the Regional Travel Demand Model (RTDM) and the Oregon Statewide Integrated Model.

4. Electronic payment can be a barrier.

Congestion pricing [tolls] relies on electronic cashless technology. Households that do not have credit cards, bank accounts, or cannot afford large deposits may be unable to set up toll accounts, which may limit their use.

5. The cost and process to obtain a transponder can be a barrier.

Most tolled facilities that use electronic toll collection offer discounts to those who register and use transponders. This is to encourage people to join into the system and lower the cost to monitor and enforce toll fees. For low-income drivers, the cost to purchase a transponder and pay monthly fees to maintain it can be a barrier. Additionally, distrust of ODOT and government systems can be a barrier for trust in signing up for an electronic transponder that follows where people drive.

6. Tolling to support greater transit will help, but it will not solve it all.

According to the Federal Highway Administration,⁵ if congestion pricing [toll] revenues are used for public transportation, those who gain the most are young people, low-income individuals, single people, women, and residents of the inner suburbs. On average, these groups pay relatively little in congestion charges on average and use public transportation more often than do other groups.

Research compiled by Professors Michael Manville and Emily Goldman,⁶ details the following:

“While low-income people are more likely to ride transit, not all transit riders have low incomes, and not all transit spending helps low-income riders. Bus riders are poorer than the population overall, but rail riders are richer, and transit agencies spend disproportionately on rail (Taylor and Morris 2015).

Thus, simply spending revenue on “transit” may not be progressive. For that matter some observers contend that new transit spending only sometimes benefits riders, since transit workers capture some of the increased revenue in higher wages (Winston and Shirley 1998).

The fundamental issue is that spending toll revenue on transit—even buses—solves the wrong problem. Funneling revenue to transit does not address the fundamental concern that pricing harms poor *drivers*. Bus riders may be disproportionately low-income, but

⁵ “Income-Based Equity Impacts of Congestion Pricing: A Primer.” Federal Highway Administration (2008).

⁶ “Would Congestion Pricing Harm the Poor? Do Free Roads Help the Poor?” Michael Manville and Emily Glodman (2018).

they suffer no direct harm from pricing and may even benefit from it, if less congested roads make bus travel faster (Small 2005).”

7. To address the financial impact to people and workers who are experiencing low-incomes, toll programs commonly offer credits and rebates.⁷

Examples of rebates or credits are as follows (information from existing examples are provided in the parentheses):

- Waiving the monthly registration fee
- Providing credits directly to an account
- Free transponders
- Credits for people who shifted their commute time
- Credits once a certain number of trips are taken per month
- People taking transit or drivers in high-occupancy tolled lanes get credits that can be used for tolling payment (unique to LA Metro, which is the single toll and transit provider)

8. The Oregon Legislature passed a law (HB 3055) that requires ODOT to develop a method for establishing income-based tolls. Income-based exemptions or rates are not common in congestion pricing [tolls] projects, although there are a few studies underway. When considering exemptions, the tradeoff is that there will be less money for programs or investments to advance equity.

HB 3055 requires that at least 90 days before the Oregon Transportation Commission (OTC) seeks approval from the Federal Highway Administration, ODOT will prepare and submit a report on how equitable, income-based toll rates will be set. This report is due to the Joint Committee on Transportation and the OTC by September 15, 2022.

TriMet’s low-income fare program is an example from a transit agency. As of October 2020, there are no current congestion pricing [tolling] agencies in America that offer an income-based toll rate schedule or offer broad exemptions.

The following studies on toll projects that have a mix of free and tolled lanes are underway⁸:

- The San Francisco County Transportation Authority (SFCTA) is evaluating a low-income toll discount for a future tolling scheme on a bridge, planned to be implemented in 2022 as a permanent program.

⁷ “Tolling and Congestion Pricing Research and Policy Support.” Prepared by Cambridge Systematics, Inc. for Oregon Department of Transportation (2017).

⁸ “WSP/WSTC Low-Income Toll Program Study for Interstate 405 & SR 167 Express Toll Lanes Results for Survey Conducted with IBTTA Members.” WSP (2020).

- The Minnesota Department of Transportation (MnDOT) is in long-term planning for a multi-year pilot of an annual toll credit to be provided to low-income users of their tolled managed lanes. The program is awaiting legislative approval to proceed.
- The Metropolitan Transportation Commission (MTC) of the San Francisco Bay Area plans to learn by observation and will pilot a low-income toll discount program on a set of its express lanes, leveraging aspects of the region’s means-based discount program pilot for transit, which launched in July 2020.
- The San Bernardino County Transportation Authority (SBCTA) commissioned an equity report, from which the agency is following all recommendations and is considering a low-income program beyond the recommendations.
- The Colorado High Performance Transportation Enterprise (HPTE) also has a low-income program in the planning stages for an express lanes project that is under construction.

9. Offering cash options for payment and setting policies for the toll rate and enforcement are additional ways to address impacts.

In addition to offering cash payments options for loading credits on an account, the following actions have been taken by congestion pricing [tolling] agencies:

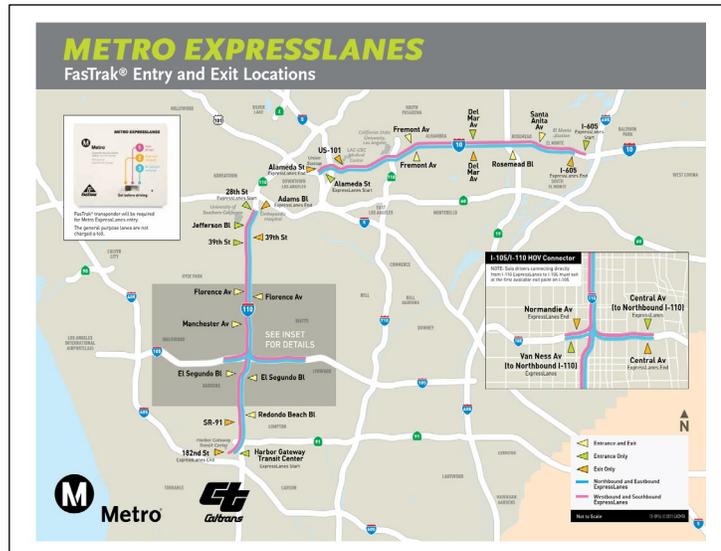
- Offer additional time to pay a toll bill without incurring fines
- Set a no- or low-minimum balance requirement for loading transponders
- Design the system to be clear and easy to use for everyone, including non-English speakers
- Establish toll rate price caps and floors for future rate setting
- Design and implement an interoperable system to accept transactions from transit, parking, and other modes of travel

EXAMPLES OF REGIONAL OR CORRIDOR-LENGTH TOLL PROJECTS

I-10/I-110 EXPRESSLANES LOCATION: LOS ANGELES

Converted 11 miles of existing I-110 HOV lanes to High Occupancy Toll (HOT) lanes and 14 miles of the existing I-10 HOV lanes to HOT lanes, widened the Adams Boulevard overcrossing, and constructed a separate pedestrian overcrossing over I-110 ([website link](#)).

Toll and Transit operator
LA Metro



Affordability

- **Low-Income Assistance Plan⁹:** Qualifying LA County residents can receive a one-time \$25 credit when opening a FasTrak account. Credit can be applied to transponder deposit or pre-paid toll deposit. \$1 monthly account maintenance fee is waived as well.
- **Pay as You Go¹⁰:** Pilot program that reduces the cost of using the ExpressLanes without a valid FasTrak account/transponder to \$4 plus the posted toll rate. Prior to this change, the cost of driving in the ExpressLanes without a valid FasTrak account/transponder was at a minimum \$25 plus the posted toll rate.
- **Transit Rewards Program¹¹:** Frequent transit riders and FasTrak account holders can earn a \$5 toll credit after 16 one-way trips are made during peak hours.
- **Toll Rates:** The I-110 and I-10 ExpressLanes are dynamically priced HOT lanes. The toll rates are updated every five minutes based on ExpressLane traffic conditions. A report published in 2017, found monthly average peak period tolls on I-110 ranged from \$3.31 to \$7.63 with a minimum toll rate of \$0.25 per mile and maximum of \$1.40 per mile.¹²

⁹ <https://www.metroexpresslanes.net/offers-discounts/low-income-assistance/>

¹⁰ <https://www.metroexpresslanes.net/pay-as-you-go/>

¹¹ <https://www.metroexpresslanes.net/offers-discounts/transit-rewards/>

¹² <https://www.itskrs.its.dot.gov/its/benecost.nsf/ID/10fc11806a277ea1852581770046f936>

95 EXPRESS LANES

LOCATION: MIAMI, FLORIDA

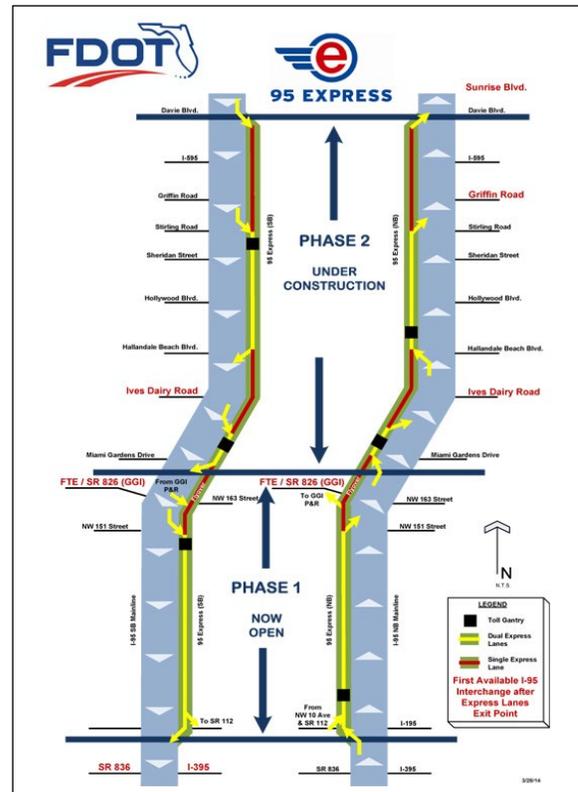
21 total miles of separated lanes with dynamic (congestion based) tolls along I-95 in Miami-Dade and Broward County ([website link](#)).

Toll operator

Florida Department of Transportation (FDOT)

Transit operator

Broward County Transit and Miami-Dade Transit



Affordability

- **Try Transit Free:** FDOT provides interested parties free one week passes to ride transit¹³.
- **Guaranteed Ride Home Program:** Program that provides transit riders free rides home in the case of an emergency or if unable to take their normal transit service.¹⁴
- **Express Bus Service** provides free commuter park and ride locations, and travel along the major interstate highways to Miami-Dade County on weekdays during morning and afternoon peak travel hours.¹⁵
- **SunPass transponder** at \$4.99 that was essentially free as it came with \$4.99 in value for payment of tolls.
- **SunPass transponder** in Florida was made available for purchase at nearly 2,000 locations across the state. Transponders can be replenished with cash at nearly 5,000 retail locations across the state. Marketing materials were made available in English and Spanish

¹³ <https://1800234ride.com/try-transit-free/>

¹⁴ <https://1800234ride.com/guaranteed-ride-home/what-is-the-guaranteed-ride-home-grh-program/>

¹⁵ <https://1800234ride.com/park-and-ride/>

I-394 AND I-35 E/W HOT-LANE CORRIDOR MNPASS EXPRESS LANES

LOCATION: MINNEAPOLIS, MN

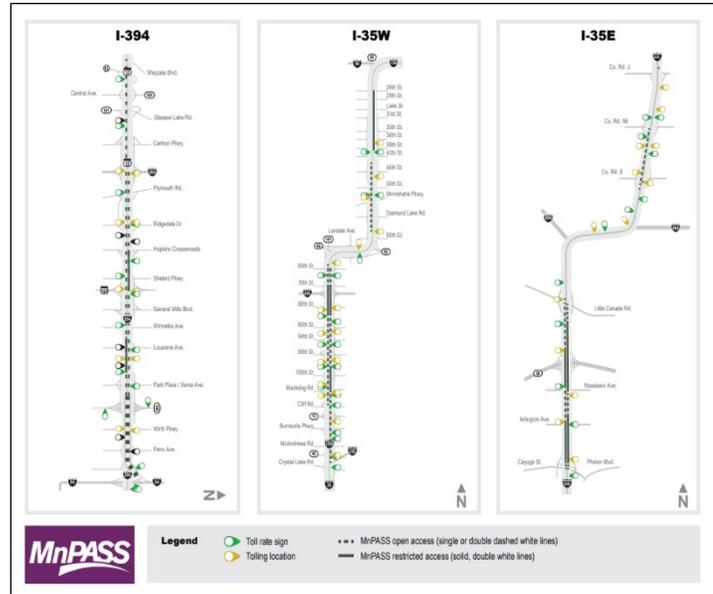
Dynamic priced high occupancy toll (HOT) lanes for 11 miles and 20 miles of highway ([website link](#)).

Toll operator

MnPass / Minnesota Department of Transportation (MnDOT)

Transit operator

Metro Transit



Affordability

- Long-term planning for a multi-year pilot of an annual toll credit to be provided to low-income users of their tolled managed lanes – the program is awaiting legislative approval to proceed.
- **MnPASS Electric Vehicle Incentive¹⁶**: Geared towards those who purchase or lease a new or used battery electric or plug-in hybrid car between Nov. 1, 2019 and Oct. 31, 2022.
 - **Battery Electric Vehicles**: One-time MnPASS credit of \$250
 - **Plug-in Hybrid Vehicles**: One-time MnPASS credit of \$125

¹⁶ <https://www.dot.state.mn.us/mnpass/mnpassnews.html#incentive>

Additional Regional or Corridor-Length Toll Projects

Toll Facility	Affordability
<p>I-395 Express Lanes and I-395 Express Lanes, Northern Virginia (website)</p> <p>Dynamic (congestion based) tolls on separated express lanes</p>	<ul style="list-style-type: none"> • EZpass Flex incentive: Permits carpools of 3 or more passengers to ride the express lanes toll free with an E-ZPass Flex® set to "HOV ON."
<p>Dulles Toll Road, Northern Virginia (website)</p> <p>Managed lanes (all lanes tolled) with a set rate schedule</p>	<ul style="list-style-type: none"> • The minimum opening account balance for the E-ZPass was temporarily reduced from \$35 to \$20 for online and phone applications.
<p>I-15 Express Lanes (FasTrak), Southern California, San Diego, Escondido, CA (website)</p> <p>Variable toll rate schedule on separated tolled lanes (High Occupancy Toll)</p>	<ul style="list-style-type: none"> • Free all day travel for drivers riding with one or more passengers on the I-15 express lanes. • To help in reducing carbon emissions, clean air vehicles are permitted to ride toll free with or without double occupancy or transponder.
<p>US 290 West, US 59 North, I-45 South, US 59 South, and US 290 West and the I-10 Katy Freeway Managed Lanes, Houston, TX (website)</p> <p>Variable toll rate schedule on separated tolled lanes (High Occupancy Toll)</p>	<ul style="list-style-type: none"> • Prepaid toll tags for residents of a neighborhood with primary vehicular access to/from the managed route. • Waived transponder fees based on qualifying users and provides additional time to pay a toll bill without incurring additional fines. • Provides a cash-based option for obtaining and managing EZ Tag transponders and accounts. EZ Tag customers can purchase a starter kit at local grocery stores and activate via text message. Accounts can be replenished with cash at many retail locations.

Toll Facility	Affordability
<p>I-75 South Metro Express Lanes, I-75 and I-575 Northwest Corridor Express Lanes, I-85 Express Lanes, and I-85 Express Lanes Extension in Georgia (website)</p>	<ul style="list-style-type: none"> • “Shift Commute – Earn Toll Credits” offered an incentive program for a limited number of registrants that provided participants with toll credits for trips shifted to off-peak travel hours. By shifting the time of morning or evening trips on the I-85 Express Lanes, participants could earn up to \$120 in toll credits over a three-month period for trips on priced express lanes in a personal vehicle.¹⁷ • “Pay n Go Peach Pass” program that allows individuals to purchase or reload a pass in cash at many pharmacy locations around the state and does not require the individual to provide any vehicle information¹⁸.
<p>Express lanes will be located at segments of US-36, C-470, MTN-70, and I-25 in Colorado (website)</p>	<ul style="list-style-type: none"> • Low-income program in the planning stages for an express lanes project that is under construction.

¹⁷ This program was scheduled to end in March of 2019 and it is not immediately clear whether it has been or will be renewed.

¹⁸ However, the Pay n Go Peach Pass charges an additional \$1.50 transaction fee to reload funds at retail locations, and it can’t be used in toll-free modes such as for HOV exemptions.

EXAMPLES OF BRIDGE REPLACEMENT OR SHORTER-LENGTH TOLL PROJECTS

ELIZABETH RIVER TUNNELS LOCATION: HAMPTON ROADS, VIRGINIA

Variable toll rate schedule on all lanes of a tunnel and bridge system connecting the cities of Norfolk and Portsmouth ([website link](#)).

Toll operator

Elizabeth River Crossings

Transit operator

Hampton Roads Transit



Affordability

- Local residents receive a \$0.75 discount per transaction after the 18th transaction in a month
- Approximately 2,000-3,000 enrolled, with average benefit of \$25/month
- Must re-verify every year in-person at customer service
- No EZ Pass minimum balance required

RIVERLINK (OHIO RIVER BRIDGES)

LOCATION: LOUISVILLE, KENTUCKY

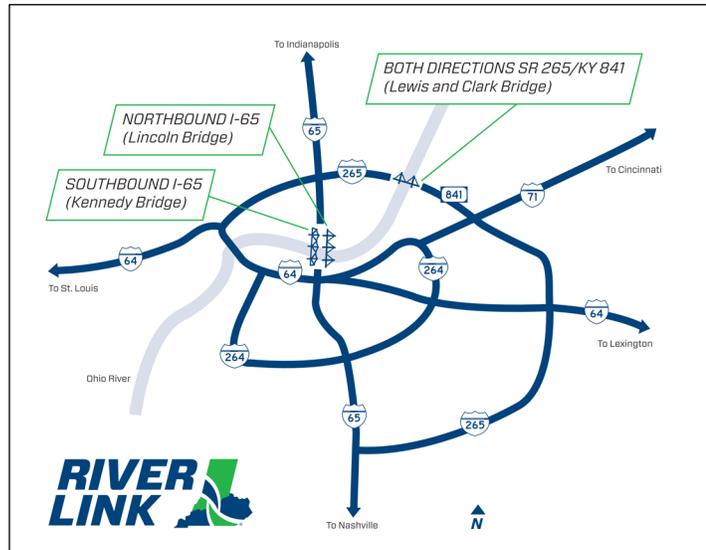
Three bridges connecting Louisville Metro and Southern Indiana are tolled with a set rate schedule for all lanes ([website link](#)).

Toll operator

RiverLink (authorized by Kentucky Transportation Commission and Indiana Department of Transportation)

Transit operator

Transit Authority of River City



Affordability

- Completed an [assessment](#) of the economic impact of tolling and possible strategies to address impacts¹⁹.
- The analysis found that collection of tolls and investment in transit would be more supportive than an income-based toll exemption.

¹⁹ [“Assessment of Economic Effects of Tolling and Strategies for Mitigating Effects of Tolling on Environmental Justice Populations.”](#) Prepared by the Indiana Department of Transportation and Kentucky Transportation Cabinet (2015).

SR 520 LAKE WASHINGTON BRIDGE LOCATION: SEATTLE, WASHINGTON

Bridge replacement and construction of High Occupancy Vehicle (HOV) lanes with all lanes tolled on a variable rate schedule ([website link](#)).

Toll operator

Washington Department of Transportation

Transit operator

King County Metro and Sound Transit



Affordability

- The pre-paid *Good To Go!* Account offers a \$2 reduced toll price, as compared to the Pay By Mail option.
- Households who receive Department of Social and Health Services cash benefits may use them to pay for transportation expenses such as tolling.²⁰

²⁰ Washington State Legislature. <https://app.leg.wa.gov/wac/default.aspx?cite=388-412-0046>

Additional Bridge Replacement or Shorter-Length Toll Examples

The following is a list of bridge replacement or shorter-length toll projects:

Toll facility	Affordability
Tappan Zee Bridge (website)	<ul style="list-style-type: none"> • Reduced rate (\$0.50 off) for people who take more than 20 trips a month. Must be registered EZ Pass.²¹ • In New York City, the current plan is to offer a state tax credit to households earning less than \$60,000 annually for those that drive into the proposed cordon pricing area.
Dumbarton Bridge (website) San Mateo-Hayward Bridge (website) San Francisco-Oakland Bay Bridge (website)	<ul style="list-style-type: none"> • Qualified carpool vehicles that use the designated carpool lane will pay a reduced-price toll of \$3 during carpool hours, 5:00 am to 10:00 am and 3:00 pm to 7:00 pm, Monday through Friday. Motorcycles, buses, and inherently low-emission vehicles are allowed to use the carpool lane. • If you travel over more than one state-owned bridge per day during peak commute hours and pay bridge tolls with a FasTrak toll tag or License Plate Account, you will receive a \$0.50 discount off your second toll (\$0.25 for carpools). Only 2-axle vehicles are eligible. You can receive a maximum of 2 discounts per calendar day, per toll tag or vehicle.
Sam Houston Ship Channel Bridge (website)	<ul style="list-style-type: none"> • Veterans discount for vehicles that are registered in Texas and received a qualifying license plate.
Mountain Creek Lake Bridge (website) Lewisville Lake Toll Bridge (website)	<ul style="list-style-type: none"> • Veterans discount for Legion of Valor recipients to receive free passage on all Texas roads and tollways. • Note: The 81st Texas Legislature passed HB 3139, which allows for the creation of a veteran’s toll discount program by a local toll authority; however, no funds were appropriated for such a program. There currently is no funding source available to implement the program.

²¹ EZ Pass Discounts. New York State (<https://www.thruway.ny.gov/ezpass/discount.html>).

Toll facility	Affordability
Delaware Memorial Bridge (website)	<ul style="list-style-type: none"> Offers discount programs for frequent travelers and commuters that are tag specific and apply only to passenger vehicles (2-axle, single tire) with New Jersey E-ZPass® transponders.
I-78 Toll Bridge (website)	<ul style="list-style-type: none"> The frequency-based E-ZPass commuter discount is a new (as of May 1, 2021) 20% discount that reduces the \$1.25 Class 1 E-ZPass toll to \$1 whenever monthly eligibility criteria is met. This discount is applied as a retroactive credit, after 16 or more tolled trips across Delaware River Joint Toll Bridge Commission (DRJTBC) bridges are recorded in a respective calendar month on a passenger-vehicle.