

Low-Income Toll Program Study for I-405 & SR 167 Express Toll Lanes

August 2021



405 SOUTH
Renton
← ONLY

EXPRESS TOLL LANES



LEFT



OR

EXPRESS
LANE ENTR

↓ ONLY

NE 124th St

\$0.75

JCT



\$0.75

JCT



\$0.75

HOV 2+ FREE W/ FLEX PASS



State of Washington

TRANSPORTATION COMMISSION

PO Box 47308, Olympia WA 98504-7308 • 2404 Chandler Court SW, Suite 270, Olympia WA 98502
(360) 705-7070 • Fax (360) 705-6802 • transc@wstc.wa.gov • <https://www.wstc.wa.gov>

August 27, 2021

Dear Members of the Senate & House Transportation Committees:

On behalf of the Washington State Transportation Commission, I am pleased to submit the final report of findings and recommendations of the Commission's I-405 & SR 167 Express Toll Lanes (ETLs) Low-Income Tolling Program Study. This study was directed in the 2019/21 Transportation Budget (Sec. 205) as follows:

“(2)(a) \$250,000 of the Interstate 405 and state route number 167 express toll lanes account—state appropriation is provided solely for the transportation commission to conduct a study, applicable to the Interstate 405 express toll lanes of discounted tolls and other similar programs for low-income drivers that are provided by other states, countries, or other entities and how such a program could be implemented in the state of Washington. The transportation commission may contract with a consultant to conduct all or a portion of this study.

(b) In conducting this study, the transportation commission shall consult with both the department of transportation and the department of social and health services.

(c) The transportation commission shall, at a minimum, consider the following issues when conducting the study of discounted tolls and other similar programs for low-income drivers:

(i) The benefits, requirements, and any potential detriments to the users of a program;

(ii) The most cost-effective way to implement a program given existing financial commitments, shared cost requirements across facilities, and technical requirements to execute and maintain a program;

(iii) The implications of a program for tolling policies, revenues, costs, operations, and enforcement; and

(iv) Any implications to tolled facilities based on the type of tolling implemented on a particular facility.

(d) The transportation commission shall provide a report detailing the findings of this study and recommendations for implementing a discounted toll or other appropriate program in the state of Washington to the transportation committees of the legislature by June 30, 2021.”

The recommendations contained herein provide a foundation for taking steps towards establishing a future low-income tolling program for the I-405 & SR 167 ETLs. The study's findings represent the culmination of extensive research and analysis led by the Commission, in partnership with the Washington State Department of Transportation and Washington State

Members of the Senate & House Transportation Committees
August 27, 2021
Page 2

Department of Social and Health Services, with input provided from King County Metro's ORCA LIFT program, and the Puget Sound Regional Council.

While more research, analysis and community engagement is needed to define the detailed parameters of a future low-income toll program to ensure it is sustainable and effective, the advancement of such programs are a necessary step in the evolution of our state's taxation and revenue generation structures.

We look forward to your review and input.

Sincerely,

A handwritten signature in black ink, appearing to read "Roy Jennings". The signature is fluid and cursive, with a large initial "R" and "J".

Roy Jennings, Chair
Washington State Transportation Commission

Table of Contents

Executive Summary	1
Summary of Findings	4
Key Findings	
Recommendations	4
Recommendation 1: Develop a concept of operations for a low-income toll discount program	
Recommendation 2: Establish an implementation timeline that supports informed program selection and cost-effective approaches	
Recommendation 3: Advance the two selected program options as preferred options for further assessment	
Recommendation 4: Engage potential program participants to inform the program design process	
Recommendation 5: Implement a low-income toll discount program as a pilot initially, to test and gain further learnings	
Recommendation 6: Use existing programs to support cost-effective program enrollment	
Recommendation 7: Establish core program elements that support and enable participant access	
Recommendation 8: Assess costs and benefits of expanding to all tolled facilities	
1 Introduction	9
The I-405/SR 167 Express Toll Lane Corridor	10
Overview of the I-405/SR 167 Corridor Program	
Express Toll Lanes on I-405	
Future projects	
Goals for the Express Toll Lanes	
How do Express Toll Lanes Work?	11
Setting the Stage for the Study: Behavior, Home Locations, and Preferences of Drivers with Low Incomes	
2 Local and National Scan of Low-Income Programs	13
Existing Low-Income Toll Programs	13
Programs Providing a Per Trip Discount on Tolls	
Programs Providing Toll Credits and/or Account Costs Relief	
Other Currently Proposed Low-Income Toll Programs	
Program Developed and Pending Implementation	
Programs Providing Indirect Benefits to Drivers with Low Incomes	
Programs to Reduce Barriers for People Who are Unbanked	15
Existing non-toll low-income equity programs of relevance in Washington state	16
Department of Social and Health Services	
ORCA LIFT	
Eligibility Criteria	17
Toll Equity Research in Washington State	17
Other Equity Policies and Programs Existing Today in Washington State	
Comprehensive Toll Equity Toolkits	18
3 Screening and Selecting Program Options	19
Stakeholder Agency Workshops	20
Workshop Approach and Results	20
Metrics to Evaluate Program Options	22
User Surveys	23
Initial Survey of Program Options	
Follow-up Survey of Selected Program Options	
Selection of Program Options	24
Additional Program Components	26

4 Assessment of Costs, System Performance, and Revenues	27
Program Implementation Assumptions	27
Registration and Verification of Program Participants	
Program Operation	
Program Costs	28
Initial One-Time Costs to Initiate the Program	
Ongoing Operating Costs	
Policy Assumptions	30
Potential Impact to System Performance, Traffic and Revenue	31
Analysis Approach	
Traffic and Revenue Baseline Modeling and Spreadsheet Inputs	
Eligibility and Enrollment Expectations	
Program Impacts on Traffic Volumes and Performance	34
Impact of Low-Income Program Options on Traffic Volumes	
System Performance Impacts	
Program Impacts on Revenue	35
Gross Revenue Potential	
Adjusted Gross Revenue	
Net Revenue	
Implications of Changes In Net Revenue	
5 Findings and Recommendations	40
Findings	40
Key Finding: Low-Income Toll Discounts could Expand Transportation Access in the I-405 / Sr 167 Corridor	
Key Finding: Drivers with Low Incomes have Diverse Travel Circumstances and Barriers to Program Access	
Key Finding: Efficiencies can be Gained by Using Existing Eligibility Verification Systems	
Key Finding: Both Selected Discount Options Provide Similar Benefits to Potential Program Participants, and to the State, with Assessment of which Provides More Value Not Conclusive	
Key Finding: Continued Work Needed on Assessing Costs, and Expanding Community Engagement Before Program Implementation	
Recommendations	41
Recommendation 1: Develop a concept of operations for a low-income toll discount program	
Recommendation 2: Establish an implementation timeline that supports informed program selection and cost-effective approaches	
Recommendation 3: Advance the two selected program options as preferred options for further assessment	
Recommendation 4: Engage potential program participants to inform the program design process	
Recommendation 5: Implement a low-income toll discount program as a pilot initially, to test and gain further learnings	
Recommendation 6: Use existing programs to support cost-effective program enrollment	
Recommendation 7: Establish core program elements that support and enable participant access	
Recommendation 8: Assess costs and benefits of expanding to all tolled facilities	

Appendices A-E are located in the accompanying Appendices document for this report.

Figures

FIGURE 1. Map of Current and Future Washington State Toll Facilities (2021)	1
FIGURE 2. Map of Current and Future Washington State Toll Facilities (2021)	10
FIGURE 3. Study Process for Low-Income Program Discount Options	19
FIGURE 4. PICK Chart Analysis from Workshops	21
FIGURE 5. Metric and Survey Results for Low-Income Program Discount Options	23
FIGURE 6. Survey Results for Low-Income Program Discount Options (March 2021)	25
FIGURE 7. ETL Operations Features	30
FIGURE 8. Impact Evaluation Process	31
FIGURE 9. ETL Usage Frequency	32
FIGURE 10. Toll Revenue Adjustment Illustration	38

Tables

TABLE 1. Low-income Program Discount Options and Objectives	2
TABLE 2. Grouping of Metrics Used in Study and Mapping to Proviso	2
TABLE 3. Standard Program Elements Recommended	3
TABLE 4. Low-Income Program Discount Options and Objectives	21
TABLE 5. Grouping Of Metrics Used In Study And Mapping To Proviso	22
TABLE 6. Survey Results for Low-Income Program Discount Options	24
TABLE 7. Standard Program Components Recommended	26
TABLE 8. One-Time Implementation Cost Estimates	29
TABLE 9. Ongoing Operating Cost Estimates	29
TABLE 10. Estimated Transactions Impact	34
TABLE 11. Estimated Gross Revenue Impact	36
TABLE 12. Leakage Figures And Assumptions	37
TABLE 13. Estimated Adjusted Gross Revenue Impact	37
TABLE 14. Estimated Net Revenue Impact	38

TABLE 1. Low-income Program Discount Options and Objectives

Discount Option	Benefit Evaluated	Discount Objective
Percentage discount	<ul style="list-style-type: none"> ▶ 25% discount ▶ 50% discount ▶ 75% discount 	Mostly benefit drivers with low incomes who are regular commuters during peak times.
Fixed discount	<ul style="list-style-type: none"> ▶ \$0.50 discount per trip ▶ \$2.00 discount per trip ▶ \$5.00 discount per trip 	Mostly benefit drivers with low incomes who travel at off-peak times, and those who make short ETL trips.
Fixed toll credit (per month, etc.)	<ul style="list-style-type: none"> ▶ 50% of average amount spent on ETLs by all users ▶ 100% of average ▶ 150% of average 	Allows drivers choice of whether they would use program for occasional high-cost trips, or a larger number of low-cost trips.
Fixed number of free toll trips (per month, etc.)	<ul style="list-style-type: none"> ▶ Three free trips monthly ▶ Ten free trips monthly ▶ Twenty free trips monthly 	Program would encourage use of ETLs for infrequent high-value trips (medical, childcare, late to work, etc.)
Lower maximum toll	<ul style="list-style-type: none"> ▶ 25% lower maximum ▶ 50% lower maximum ▶ 75% lower maximum 	Allows drivers with low incomes to plan to use ETLs with greater frequency during peak times.

The five toll discount program options were evaluated based on a set of metrics selected for this study. The metrics were informed by a variety of sources including low-income toll program work in other states, various equity frameworks, and Washington State policy guidelines for toll facilities (RCW 47.56.830). Input was also gathered on the program options via surveys of residents with low incomes in the greater corridor area.

For purposes of scoring the discount program options, the metrics used were sorted into groups that aligned with the study’s legislative proviso. These groups were as follows:

TABLE 2. Grouping of Metrics Used in Study and Mapping to Proviso

Study Metrics Grouping	Legislatively Required Study Elements ESHB 1160, Sec 205(2)
User Benefit: assessment of potential user benefits from program.	(c)(i) The benefits, requirements, and any potential detriments to the users of a program
Program Cost: assessment of program implementation and operations costs.	(c)(ii) The most cost-effective way to implement a program given existing financial commitments, shared cost requirements across facilities, and technical requirements to execute and maintain a program (c)(iii) The implications of a program for tolling policies, revenues, costs, operations, and enforcement

Study Metrics Grouping	Legislatively Required Study Elements ESHB 1160, Sec 205(2)
Operational Impact: assessment of impacts on toll rates, travel time and other operational impacts.	(c)(iii) The implications of a program for tolling policies, revenues, costs, operations, and enforcement
Other Feasibility: includes assessment of program sustainability and stakeholder understanding.	(c)(iv) Any implications to tolled facilities based on the type of tolling implemented on a particular facility.

Following the analysis and evaluation of each of the five toll discount options the two highest-scoring toll discount program options were selected for further detailed analysis. The two options selected were:

- ▶ **Fixed Number of Free Toll Trips:** Program participants receive 10 free ETL toll trips per month
- ▶ **Fixed Toll Credits:** Program participants receive a monthly toll credit equal to 100% of the toll usage of the average ETL customer – assessed at \$48 in toll credits per month

The selected program options scored highest overall on the metrics and also scored well on the survey of residents with low incomes living in the corridor area. Compared to the other options considered, the selected options scored especially well on the metrics for user benefit, including providing benefits to drivers of infrequent, but high value trips (such as for medical appointments), and for eliminating a financial barrier to participation by increasing the opportunities to use the express toll lanes at no cost.

To advance the assessment of the two program options, a quantitative analysis was conducted to determine their respective implementation requirements, costs, and impacts to traffic and toll revenue. This analysis included the assumption that the following low-income customer enrollment and outreach elements would be a part of a potential low-income toll program. These program elements are:

TABLE 3. Standard Program Elements Recommended

Standard Program Elements
▶ Provide a free <i>Good To Go!</i> Flex Pass to program participants
▶ Establish a program advisory panel, including participants of the program, that is diverse with regard to race, geography of residence, age and gender, which reports out at least annually
▶ Make program documentation available in all primary languages for the region, with live translation available for other languages used in region, and using language that is inclusive
▶ Show program information in visual formats as much as possible
▶ Accommodate participants with disabilities in the enrollment process (physical and remote), and implement using staff who have received equity training
▶ Make program enrollment accessible geographically to keep time cost of enrollment low

Summary of Findings

While the findings and recommendations in this study reflect its limited scope focusing on if low-income toll discounts on the I-405/SR 167 ETLs are feasible and identifying the likely benefits and impacts, the study's findings may also support a subsequent broader exploration of transportation equity considerations and how the application of low-income discounts could be consistently applied to all tolled facilities in the state.

Key Findings

- ▶ Though few comparable programs are in place across the country, this study suggests that low-income toll discounts could expand transportation access in the I-405 / SR 167 corridor by helping drivers with low incomes realize more of the travel benefits provided by the ETLs.
- ▶ Drivers with low incomes have diverse mobility and program access circumstances. For example:
 - **Mobility:** Drivers have varied origin and destination patterns, varied trip purposes, and travel at varied times of day.
 - **Program access:** A diversity of barriers to access for participating in a potential low-income program, including cultural, physical and financial must be considered.
- ▶ Efficiencies can be gained by using existing state systems such as utilizing the DSHS Benefit Verification System (BVS) for enrollment, as well as DSHS's existing applicable eligibility standards.
- ▶ Both of the toll discount program options selected for further analysis provided similar benefits to potential program participants, and to the state, including:
 - **Ease of use:** They are similarly simple to understand and to use for program participants.
 - **Similar low cost and performance impacts:** Both options are expected to have similar impacts on the overall performance of the ETLs and operating costs.
 - **Transferable:** Both options may be viable for use on other tolled facilities.
- ▶ Engagement with potential low-income participants was challenging during the study given it occurred during the COVID-19 pandemic. Therefore, more community engagement is needed to help understand potential program participants' opinions, preferences, and likely usage patterns to help refine the program implementation. This includes conducting further research to define implementation details and to refine policy choices such as number of free trips or amount of credit per month.

Recommendations

Based upon the research findings of this study, the recommendations arrived at support future implementation of a low-income tolling program, pending further research and analysis on the details described above, along with conducting further community engagement and outreach.

The eight recommendations below provide guidance on: (1) possible program components and policy choices, and (2) next steps to advance further development of a low-income toll discount program.

Recommendation 1: Develop a concept of operations for a low-income toll discount program

More work is needed to develop a detailed operational design and implementation plan. Such a plan will set forth the necessary program details, specific policies, technical system requirements, etc. that will then enable more precise analysis and estimation of the program costs and potential impact to toll revenues and performance, long-term.

Recommendation 2: Establish an implementation timeline that supports informed program selection and cost-effective approaches

Implementation of a low-income tolling program in the mid-2020s would provide time for effective program design, testing, and community engagement steps described in the study recommendations, as well as provide the time for legislative decision making.

Aiming for a mid-2020's implementation would also align closely with the opening of the I-405 ETLs between Renton and Bellevue, and expansion of the SR 167 ETLs to Puyallup anticipated to occur in 2024. As possible, coordination of traffic and revenue analysis and policy decisions in support of program design and implementation, and the analysis and policy decisions necessary for opening the facilities, would be a cost-effective approach that informs both processes and potentially reduces development time.

Recommendation 3: Advance the two selected program options as preferred options for further assessment

Both recommended program options should be moved forward as preferred options for further assessment. This is based primarily on three factors:

- ▶ Both selected options are feasible to implement;
- ▶ Both selected options provide strong benefits to potential program participants with a diverse set of travel circumstances and program access needs; and
- ▶ Both selected options did not demonstrate significant differences between the implementation challenges, operational costs, and the cost of foregone toll revenue.

As noted in the findings, the assessment of which option provides the most benefit to potential program participants was not conclusive. Further analysis and community engagement could further inform the selection of a final option for implementation. The additional analysis should seek to validate study assumptions, inputs, and findings, based upon updated information, along with considering the additional information gathered from the expanded community engagement.

Additional Considerations for Implementation of a Low-Income Discount Toll Program:

- ▶ **Financial Constraints:** Current law financial commitments assume that toll revenues will be sufficient to back issuance of over \$1 billion in bonds to fund corridor improvements. Recent forecasts that factor in the impact of the COVID pandemic no longer project toll revenues sufficient to fund the current law construction program. Any potential low-income toll discount program option could exacerbate the funding gap depending on how a low-income discount program is funded.
- ▶ **System Development:** The two recommended program options will require additional tolling back-office adjustments and development time to implement.
- ▶ **Facility Performance Requirements:** Implementation of a low-income discount toll program will likely put additional pressure on meeting existing I-405 ETL performance requirements during the peak periods.
- ▶ **Benefits for Program Participants:** Assumed benefits for program participants are subject to future policy decisions and should be part of the further assessment. This includes the following:
 - Value of each option to the consumer (trips / credit per month): Adjustments may be necessary for implementation based on funding levels and/or input from further community outreach and assessment.
 - The study assumes that if a driver travels the entire ETL corridor, which is currently made up of two segments, that would count as two toll transactions, so in other words, two free trips would be deducted. However, if decided that a customer's complete trip through the corridor counts as one toll transaction, the revenue impact of providing free trips would be larger. The choice on how to define a toll transaction should consider ease of use for the driver, and ease of operations for WSDOT.

Recommendation 4: Engage potential program participants to inform the program design process

While this study attempted to gather early insights from impacted low-income communities, via two surveys of potential program participants, with the results being very valuable to gaining early insights that informed the findings and recommendations, further and continued outreach and input gathering is needed to advance a low-income toll program.

This should include establishment of an advisory panel. The panel would provide key input during the program design and selection phase, and would remain in place and provide long-term, periodic input on the program after it is implemented. The advisory panel should include potential participants of the program during the design phase and current program participants once implemented. The panel should be diverse with regard to race, geography of residence, age, and gender. Upon program implementation, the advisory panel should report out at least annually to the WSTC.

Additional and ongoing outreach to impacted drivers is valuable for at least four reasons:

1. to help the eventual program participants feel more engaged in the process;
2. to allow the implementing agencies to learn from the program participants who understand their own lives and needs best;
3. to answer questions that could not be reliably studied through an online survey, including the question of what method of enrollment (such as online, in-person, or via the phone) works best for what shares of eventual program participants; and
4. to lay the groundwork for encouraging program enrollment once the pilot is launched – this may include promotion at DSHS offices when individuals sign up to receive new services, or mailers sent to all DSHS clients (which should include the DSHS client number to make the enrollment process easier for the low-income toll program), but other promotion ideas are sure to arise from the outreach processes.

Recommendation 5: Implement a low-income toll discount program as a pilot initially, to test and gain further learnings

Along with a public engagement program, a pilot program could be useful to inform development of the concept of operations and to gain a better understanding of how potential program participants would use different program options. This will lead to better-informed selection of program options, benefit levels, needed toll system changes, and potential impacts to traffic, revenue, and system performance.

Planning for the pilot program must start early in the program design process to ensure adequate time for testing. Design and implementation of any pilot program should be informed through engagement with the program advisory panel and other outreach.

Evaluation of the pilot program should be driven by performance metrics, coordinated through the program advisory panel. Evaluations and metrics could determine the effectiveness of enrollment approaches, and use of the benefits. It could also be deliberate about measuring diversity and inclusion concerning geography, age, race, and ethnicity.

Recommendation 6: Use existing programs to support cost-effective program enrollment

Use of existing DSHS' eligibility verification system and eligibility criteria used for other social services, would enable significant cost-savings for program implementation and operations.

- ▶ Use of DSHS's Benefit Verification System (BVS), an online system free for use by partnering entities, provides the most cost-effective approach for defining and assessing low-income toll discount program eligibility.
- ▶ Use of eligibility criteria in place for Washington State residents who receive social services from DSHS would further limit costs for defining and assessing low-income toll discount program eligibility. This includes an income eligibility threshold of approximately 200% of the Federal Poverty Level (FPL), a threshold that is also commonly used in low-income discount and benefit programs around the country.

Recommendation 7: Establish core program elements that support and enable participant access

Core program elements should include the following:

- ▶ Provide a free *Good To Go!* Flex Pass to program participants and do not require a minimum balance be kept nor a credit or debit card be linked to an account.
- ▶ Consistent with existing WSDOT capabilities, provide program information for public use in all primary languages for the region, with live translation available for other languages used in region, and using language that is judgement free.
- ▶ Show program information in visual formats as much as possible.
- ▶ Create an enrollment process (physical and remote) that is accommodating for participants with disabilities, and implemented using staff who have received equity training.
- ▶ Make program enrollment broadly geographically accessible to keep time cost of enrollment low for potential program participants needing in-person services.

Additional considerations for implementation of a low-income discount toll program:

- ▶ A variety of approaches to reduce barriers for customers who rely on cash payments should be evaluated in continued work and community outreach. Based on research for this study on financial access in Washington State, it is reasonable to assume that many potential program participants would rely on cash payment options, and that a significant portion would also have no checking or savings account.^{2,3} Given this, requiring a debit or credit card to participate in the program is likely to be a critical barrier to accessing and gaining benefits from a low-income tolling discount program.

Recommendation 8: Assess costs and benefits of expanding to all tolled facilities

This study only addressed low-income discount options for the I-405 / SR 167 ETLs, but offering such a program on one tolled facility but not the others may create fairness and geographic equity issues amongst the drivers of the different facilities. While each facility has unique operational realities and financial requirements that would need to be assessed and satisfied, consistent with WSTC efforts to develop system-wide tolling policies, an element of the concept of operations proposed in Recommendation 1 should identify and explore the challenges and opportunities of extending a low-income toll discount program to other tolled facilities, and assess whether implementation recommendations developed for the ETLs would change if applied systemwide.

² Bank On Washington, <https://bankonwashington.org/>

³ Office of Financial Management, "Comparing Standards of Economic Distress", Deb Came and Erica Gardner, 2007, https://www.ofm.wa.gov/sites/default/files/public/legacy/humanserv/poverty/economic_distress.pdf

1

Introduction



This report details the research, analysis, findings, and recommendations of the Low-Income Toll Program Study for I-405 & SR 167 Express Toll Lanes (ETLs), resulting from an evaluation of discounted tolls and other similar programs for low-income drivers on the I-405 and SR 167 express toll lanes (ETL) corridors. This study considered the benefits and detriments of such programs to drivers with low incomes, other drivers of the corridor, other local residents, and the potential implementing agencies of such a program.

In 2019, the Washington State Legislature provided funding and direction to prepare this study. The legislative direction for this study is as follows:

“(2)(a) \$250,000 of the Interstate 405 and state route number 167 express toll lanes account—state appropriation is provided solely for the transportation commission to conduct a study, applicable to the Interstate 405 express toll lanes, of discounted tolls and other similar programs for low-income drivers that are provided by other states, countries, or other entities and how such a program could be implemented in the state of Washington. The

transportation commission may contract with a consultant to conduct all or a portion of this study.

(b) In conducting this study, the transportation commission shall consult with both the department of transportation and the department of social and health services.

(c) The transportation commission shall, at a minimum, consider the following issues when conducting the study of discounted tolls and other similar programs for low-income drivers:

(i) The benefits, requirements, and any potential detriments to the users of a program;

(ii) The most cost-effective way to implement a program given existing financial commitments, shared cost requirements across facilities, and technical requirements to execute and maintain a program;

(iii) The implications of a program for tolling policies, revenues, costs, operations, and enforcement; and

(iv) Any implications to tolled facilities based on the type of tolling implemented on a particular facility.

(d) The transportation commission shall provide a report detailing the findings of this study and recommendations for implementing a discounted toll or other appropriate program in the state of Washington to the transportation committees of the legislature by June 30, 2021.”¹

To conduct this study, the Washington State Transportation Commission (WSTC) engaged a consultant team led by WSP USA to conduct technical work and to prepare this report. WSTC engaged the Washington State Department of Transportation (WSDOT) and Washington State Department of Social and Health Services (DSHS) as study partners and as participants on a staff coordination team that also included local and regional stakeholders and legislative staff.

The purpose guiding the study’s approach to evaluating program options was to help drivers of the corridor with low incomes gain more benefit (time savings and reliability) from having the ETL infrastructure available to them. As described in Chapter 3, study metrics were selected to support identifying program options that meet that purpose, and then assessed in alignment with legislative intent described in the study’s proviso language.

¹ “Engrossed Substitute House Bill 1160”, Sec. 205, State of Washington, 2019, <http://leap.leg.wa.gov/leap/budget/lbns/1921Tran1160-S.SL.pdf>

The I-405/SR 167 Express Toll Lane Corridor

This study is focused on the impact and benefits of both existing and proposed ETLs on I-405 and SR 167 in the Puget Sound Region of Washington². Though currently two separate facilities, with the I-405 Bellevue to Lynnwood ETLs in the north, and the SR 167 ETLs from Renton to Auburn to the south, once future projects are complete in the mid-2020s, the I-405 / SR 167 ETLs are planned to stretch continuously for about 50 miles from Lynnwood to about Puyallup, as shown in green on the map below.

The ETLs provide one or two lanes per direction which are tolled on an otherwise toll-free highway. The ETLs are tolled dynamically with the intention of keeping traffic moving in the ETLs free of congestion.

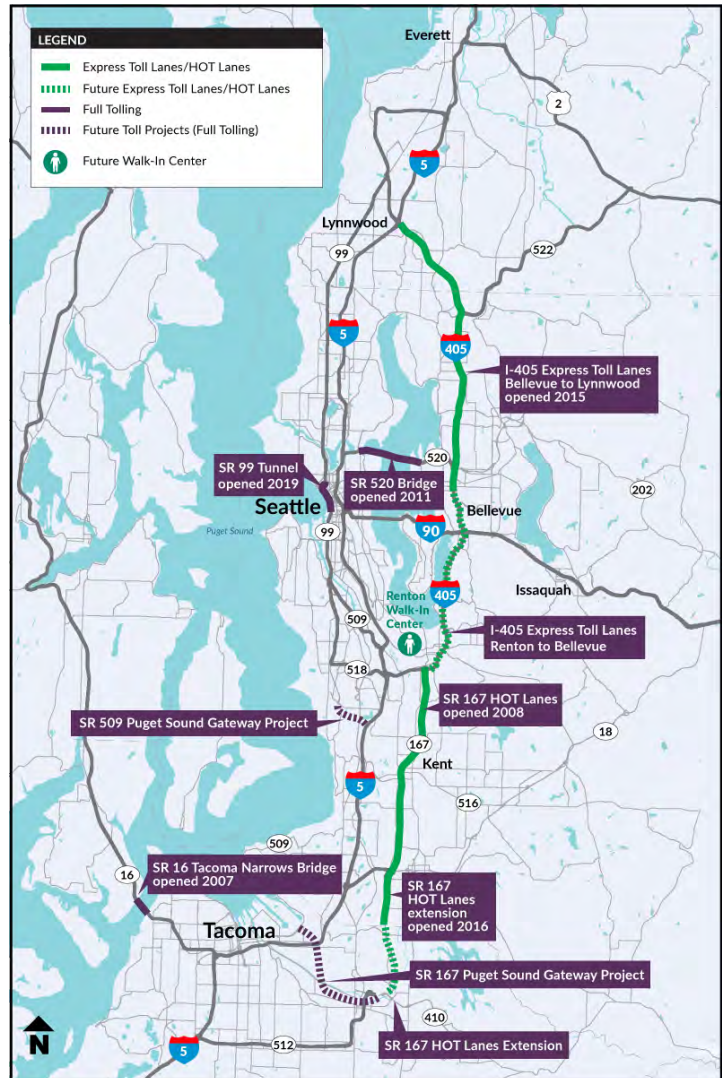
Express toll lanes provide a travel option for drivers of the corridor who have an urgent need for a quicker or more reliable trip – this, while tolled, is a valuable travel option for drivers of the corridor. A low-income toll discount program would make the benefits of the already-existing ETLs – of time savings and reliability – more broadly and equitably accessible to drivers with low incomes.

Overview of the I-405/SR 167 Corridor Program

The goal of the I-405/SR 167 Corridor Program is to deliver a comprehensive strategy to reduce traffic congestion; to improve mobility, safety, performance, and the quality of life for communities in the I405/SR 167 corridor; to enhance environmental quality; and to accommodate planned regional growth.

The I-405 Corridor Master Plan serves as a long-term vision and guide for corridor investments, identifying more than 150 individual improvement projects throughout the 30-mile I-405 corridor beginning in Tukwila at Interstate 5 (I-5) and ending in Lynnwood at I-5. These projects include improving mobility for all transportation modes, adding up to two lanes in both directions on I-405, making significant interchange connection improvements, adding a bus rapid transit (BRT) system and new transit centers, incorporating two managed lanes in each direction, and increasing local transit service. The I-405 Master Plan also includes strategies to fix traffic bottlenecks, improve arterials, and add 1,700 new vanpools, and 5,000 new park-and-ride spaces.

FIGURE 2. Map of Current and Future Washington State Toll Facilities (2021)



Express Toll Lanes on I-405

WSDOT's first managed lanes on I-405 are the 15 miles of ETLs on I-405 between Lynnwood and Bellevue, which help keep traffic moving by providing a choice for a faster, more reliable trip when drivers need it most. I-405 ETLs are free to carpoolers with a Flex Pass and give other drivers the option to choose a more reliable trip by paying a toll. There are currently two ETLs in each direction between NE Sixth Street in Bellevue and just south of the SR 522 interchange in Bothell, and a single lane between SR 522 and I-5.

² Express toll lanes on SR 167 are also referred to as HOT lanes (for high occupancy toll). The SR 167 ETLs were opened as the SR 167 HOT Lane Pilot Project, but more recently the Legislature ended pilot status.

Future projects

In 2019, the legislature passed ESSB 5825, creating one toll account between the I-405 express toll lanes and the SR 167 HOT lanes. The bill also authorized bonding toll revenue for several projects that expand the express toll lane system on the I-405/SR 167 corridor:

- ▶ SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, which extends the dual I-405 express toll lane system between SR 522 and SR 527 (builds one new lane in each direction).
- ▶ SR 167 - SR 410 to SR 18 – NB and SB Congestion Management Projects - Once built, the additional lanes will open as a HOV lane and transition to express toll lanes at a future date.
- ▶ SR 167 Master Plan to establish the vision for this vital commuter and freight corridor.
- ▶ Renton to Bellevue, including SR 167 Toll Equipment Upgrade and Southbound Auxiliary Lane.

The long-term vision includes a 50-mile ETL system going from SR 167 near Puyallup to the I-405/I-5 interchange in Lynnwood. I-405/Renton to Bellevue is under construction with express toll lanes scheduled to open in 2024. Currently, the north-end I-405 express toll lanes and south-end SR 167 HOT lanes have different operating rules. The I-405/Renton to Bellevue express toll lanes connection is an opportunity to make the whole 50-mile I-405/SR 167 corridor toll experience consistent once changes are made to the SR 167 HOT lanes operating system.

Goals for the Express Toll Lanes

The I-405 ETLs between Bellevue and Lynnwood continue to meet their intended goals of providing a faster, more predictable trip, of providing a choice to people, and of generating revenue to reinvest back into the corridor. Though the COVID-19 pandemic greatly reduced use of the ETLs in 2020 and 2021, the following list below provides a pre-pandemic snapshot of benefits to customers and the state that have been realized by meeting the intended goals (2019):

Goal #1: Provide a choice for drivers

- ▶ More than 59,000 vehicles used the ETLs each weekday in 2019. Most people do not use them every day, but like having this option when they really need it.
- ▶ In a 2019 customer survey, more than 87% of customers said they like having the option to use the ETLs.

Goal #2: Provide a faster and more predictable trip

- ▶ In 2019, the ETLs flowed up to 23 miles per hour faster than the regular lanes during the peak commute. Time savings add up pretty consistently when toll rates go up, so you'll usually save the most time when tolls are highest.
- ▶ The regular lanes were moving as fast or faster in 2019 than they were prior to the ETLs, because there were now so many more cars flowing through the ETLs.

Goal #3: Generate revenue to reinvest in the corridor

- ▶ Since opening, the express toll lanes have generated \$66.8 million for I-405 improvements through 2019.
- ▶ Toll revenue funded the peak-use shoulder lane between SR 527 and I-5 in Lynnwood to improve northbound congestion, which opened to the public in April 2017.

Looking forward, lower projected use of the ETLs due to the COVID-19 pandemic are expected to create challenges for toll revenues being sufficient to pay for currently authorized corridor improvements. This is explored further in Chapter 4.

How do Express Toll Lanes Work?

Toll rates adjust depending on real-time traffic conditions to keep traffic moving. Signs tell you what you'll pay before you get in, and you lock in your toll rate when you enter. If you don't have a *Good To Go!* account, you can still use the lanes. You'll be mailed a Pay By Mail bill at a \$2 higher rate per toll.

To use express toll lanes toll-free from 5 a.m. to 7 p.m. Monday through Friday, carpools will need to meet the HOV occupancy requirement and have a *Good To Go!* account with Flex Pass set to HOV mode. A separate toll will be charged for travel on SR 167, between Renton and Bellevue, and between Bellevue and Lynnwood, and within each of those boundaries the toll paid will depend on where a driver enters and exits the ETLs. When tolls are operating, the minimum toll rate is currently 75 cents on I-405 and 50 cents on SR 167, and the maximum rate is \$10 and \$9 on I-405 and SR 167 respectively. Before the Renton to Bellevue segment of I-405 opens to traffic, the Commission will review or set all toll rate policies including the minimum and maximum rates, carpool occupancy requirement and other policies.

Setting the Stage for the Study: Behavior, Home Locations, and Preferences of Drivers with Low Incomes

The Legislature directed this study with recognition that costs to use the ETLs may be limiting the capacity of drivers with low incomes to access these facilities. In support of better understanding the potential need of a low-income tolling program throughout the I-405 and SR 167 corridor, this study included assessments providing a snapshot of regional use of the I-405 and SR 167 corridor, and indicators of where people with low incomes – as defined as below 200% of the Federal Poverty Level (FPL) for purposes of the assessment – are residing within the corridor. Maps detailing this information is available in Appendix E. Important takeaways from the assessment included the following:

- ▶ In general, residences' of families with low incomes are clustered primarily at the northern end of the I-405 ETL corridor, and through the middle of the SR 167 ETL corridor. As would be expected, these areas also have lower-than-expected transaction density on the ETLs.
- ▶ Respondents were mixed in terms of how often they use the corridor and when – though with a lean toward weekday peaks, as would be expected. Approximately 20% of respondents never use the ETLs.

Additional information about the use of the I-405 and SR 167 corridor by drivers with low incomes was identified in surveys conducted for this study in November 2020 and March 2021. Results of these surveys are summarized in Chapter 3 of this report with additional detail in Appendix C.

2

Local and National Scan of Low-Income Programs



For this study, research was conducted of existing and proposed low-income transportation benefit programs. The research included toll discount and toll credit programs, explored eligibility criteria used by other toll agencies, as well as how people who are unbanked have been addressed. Additionally, the research explored relevant local equity programs in other public service areas and resources on toll equity.

There are a number of toll agencies considering programs to benefit customers with low incomes, but few have operating programs in place and there is little practical experience with only two low-income toll discount programs currently in operation. Locally however, transit agencies now provide 50% fare discounts or higher to transit customers with income below 200% of the Federal Poverty Level (FPL). A variety of programs around the country make it easier for customers without access to a bank account to make cash payments. These programs are described briefly in this chapter, with links to further information in the end notes and in case studies of the most relevant existing or previously developed toll discount programs or proposals in Appendix A.

Existing Low-Income Toll Programs

The study included a nationwide scan of low-income toll programs and tolling equity programs. Furthermore, a nationwide survey of low-income toll programs and tolling equity programs to assess whether there are any relevant programs that should be considered as part of this study was conducted in partnership with the Transportation Research Board (TRB), the International Bridge, Tunnel and Turnpike Association (IBTTA), and through directed outreach to the only two major tolling agencies in the United States that are not IBTTA members. In total 43 surveys were completed.

Programs Providing a Per Trip Discount on Tolls

The research uncovered only one existing program in the country that provides drivers with low incomes a per trip discount on tolls.

- ▶ The **Virginia DOT (VDOT) Toll Relief Program** provides a fixed discount of 75 cents per trip after the first eight (8) trips of a month to residents with low incomes of two towns directly adjacent to a toll tunnel. The program is led by a steering committee of local stakeholders, including representatives from the local NAACP chapter, the Hispanic Chamber of Commerce, local military bases, local business owners, and local elected officials.¹ The VDOT Toll Relief Program is described further as a detailed case study in Appendix A.

Programs Providing Toll Credits and/or Account Costs Relief

Two agencies have implemented a combination of toll credits and/or cost reductions for drivers participating in toll programs.

- ▶ **LA Metro's Low-Income Assistance Plan** provides a one-time toll credit of \$25 to drivers with low incomes. The value of the initial credit was initially set to match the cost of the transponder deposit, and as such, another way to frame the Low-Income Assistance Plan is that it provides a free tolling transponder to users with low incomes.

The \$25 credit can now be applied to either the transponder deposit or pre-paid toll deposit. While proof of eligibility is initially required, because of the relatively low cost of the benefit, LA Metro does not require drivers who have qualified for the program to requalify on a recurring basis. This program is described in Appendix A in a detailed case study.

- ▶ **North Tarrant Expressway TEXpress Lanes** provided a one-time benefit to introduce drivers to the benefits of express lanes. Drivers could activate a 24-hours-free discount through a smartphone app. More than 40,000 drivers took advantage of the offer. While this discount was available to all corridor drivers, this type of program on the express lanes may allow drivers with low incomes to use the lanes in an emergency situation while also introducing the benefits of more regular use of the express lanes.²

Other Currently Proposed Low-Income Toll Programs

There are four low-income toll programs currently in the planning stages.³

- ▶ The San Francisco County Transportation Authority (SFCTA) is evaluating a low-income toll discount for a future toll bridge, planned to be implemented in 2022 as a permanent program. While the benefits are not set, it is likely to be a graduated benefit, and may include a toll waiver for those in the lowest quintile of household incomes and a 50% discount for those in the second-lowest quintile for household incomes. Alternately the program would provide a 75% discount for the second-lowest quintile and a 50% discount for the middle quintile. SFCTA expressed that for a low-income determination in the San Francisco, CA area, 200% of the FPL is too low. A residency restriction on the program is not expected, and there is an understanding that all tolling agencies in the region either are, or will shortly be, considering low-income discount programs.
- ▶ Also in the San Francisco Bay area, the Metropolitan Transportation Commission (MTC) has begun to evaluate projects in its transportation plan with an equity lens, and has found that express lanes are not doing well in these evaluations. In order to improve their express lanes' scores through the equity evaluations, and since the agency has expressed a desire to learn by observation rather than modeling, it will be launching a pilot of a low-income toll discount program on its express lanes. It has not been determined whether the pilot will take place on one or both express lane corridors operated by the agency. It's expected the pilot would last 18 months, in line with other

regional programs, but is very likely to be continued and may evolve based on user feedback from the pilot.

While the details are still being finalized, drivers with low incomes likely will be mailed a special transponder that makes them eligible for a fixed percentage discount on all tolls. Other equity programs considered but not ultimately selected for a pilot were job promotion for people with low incomes and expansion of transit. A discount was chosen as the preferred path forward due to many people with low incomes in the corridor driving to work. The agency plans to perform stakeholder outreach to drivers with low incomes to obtain input regarding the discount options. Separate from the proposed pilot project, drivers are currently able to load their transponder accounts using cash, and the accounts do not have monthly service fees.

MTC is planning to work with the various regional transit operators already operating low-income fare discounts to leverage these agencies' eligibility systems and to be able to quickly set up a low-income pilot. As such, MTC is planning to use the same qualification rules as Clipper START, one of the regional transit low-income fare programs, which is an income below two hundred (200%) of the FPL. MTC has not yet determined the geographical constraints, but has considered including only those living near the toll corridor, or those living in all counties that connect to a county that touches the toll corridor.

Toll revenue has already been reserved for the start-up costs of the pilot program. If extended, it would continue to be funded through toll revenue. If the program is determined to be prohibitively expensive, it has been suggested that a cap on the number of enrollees may be needed. As with SFCTA, there is an expectation that a similar program will eventually be rolled out regionally across multiple operating agencies. Although the express lanes on which the pilot program would likely take place is not a bonded project with debt to repay, some regional toll bridges are bonded.

- ▶ The San Bernardino County Transportation Authority (SBCTA) is constructing express lanes that are expected to open in 2023. SBCTA commissioned an equity report, which recommended to waive account transponder fees for households with low income, to offer video tolling, to allow drivers to reload accounts with cash, to offer

vanpool services in the corridor, and to do further outreach during construction (for which it has an in-house team). The agency is following these recommendations and is also considering a low-income program beyond the recommendations. For SBCTA, income verification is a challenge and it has considered partnering with local social services agencies. SBCTA is researching the other agency programs to determine what kind of program could be provided with relatively low risk. Any programs are expected to be funded from toll revenue, though the express lanes have federal government loan commitments, and the agency is not certain how meaningful a barrier the bonding will be to implementing a discount program in the future.

- ▶ The Colorado Department of Transportation High-Performance Transportation Enterprise (CDOT HPTE) has a low-income program in the planning stages for an express lanes project that is under construction and scheduled to open in 2023. No further information was available on the planned program but a similar study to this study is underway and in the early stages. CDOT HPTE has interviewed WSTC to learn about the process and progress of this study, and how it can inform CDOT HPTE's planning for a potential low-income toll program.

Program Developed and Pending Implementation

- ▶ The Minnesota Department of Transportation (MnDOT) has proposed an annual \$50 toll credit for drivers with low incomes. The low-income credit program was proposed in 2017 but has yet to be implemented because of concerns about MnDOT's legal authority to do so. The express lanes statutory authority has limited phrasing, and as such there was legislative ambiguity over whether MnDOT is allowed to have differential pricing for different user groups, and MnDOT decided to await specific legislative authority to implement the program. The agency expects that this authority may be given within the next one or two years. The program was inspired by the Federal Highway Administration's (FHWA's) "Guidebook for State, Regional, and Local Governments on Addressing Potential Equity Impacts of Road Pricing" – this guidebook lists equity remediation options for road pricing, and MnDOT found that the two areas in which they were lacking was a low-income discount or exemption, and the availability of a cash payment option. The \$50 benefit amount was chosen because it approximates the average amount of tolls spent in a year by a low-frequency user of the system. This program is described in Appendix A in a detailed case study.

Programs Providing Indirect Benefits to Drivers with Low Incomes

- ▶ LA Metro also operates a program that provides transit riders with toll credits for use on the express lanes,⁴ in addition to the low-income toll program described earlier. Frequent transit riders and transponder account holders can earn a \$5 toll credit. To receive the toll credit, transit riders must register and take 16 one-way trips during peak hours in the express lane corridors each month. The toll credit is not tied to a specific transit rider and LA Metro has observed that most credits accrue to families where one person rides the bus and another drives. A comparable program run by the State Road and Tollway Authority (SRTA) in Atlanta, GA, called Ride Transit, lapsed its time-bound phase despite winning an international award for its implementation. More detail on SRTA's programs is in Appendix A.

The study found some toll agencies are required by state statute to use net express lane toll revenues⁵ to fund transit or broader multi-modal corridor mobility. The three agencies with the biggest investments for these type of projects are LA Metro, MnDOT, and the Northern Virginia Transportation Commission (NVTC). These programs have generated almost \$10 million per year in some geographies for programs including cycling and pedestrian infrastructure, bikeshares, transit capital and operations, and carshare information screens.

Most projects funded through these net revenue programs were previously unfunded. In general, the funding is required to be spent within a fixed number of miles of the express lane corridor in which the funds are raised.

Programs to Reduce Barriers for People Who are Unbanked

In Georgia, SRTA operates a program that allows customers to purchase transponders and add funds to their toll accounts with cash at local retail outlets (including CVS and Walgreens, and soon to expand to Costco and a grocery store chain), called the Pay-n-GO! Peach Pass. The possibility of loading a transponder with cash close to home or work is valuable for users with low incomes. Drivers with low incomes are disproportionately likely to be unbanked, to lack access to a credit card, to be uncomfortable with an automatically reloading account, or to have time constraints that make it challenging to travel far to purchase or load a transponder. This program has been used at significant scale in Atlanta, with 38% of new accounts opened within the last year being cash accounts.⁶ This program has also

been boosted by SRTA's focused outreach in communities with high numbers of households with low incomes, including the promotion of the transponders at community festivals.

Providing a cash payment option is something offered by several toll agencies. WSDOT allows the payments with cash at one customer service center (currently closed due to the pandemic). The Port of Hood River, another toll agency in the region, recently instituted a program to create a cashbox at the Hood River-White Salmon Interstate Bridge, allowing drivers to reload their accounts with a cash payment.⁷

Existing non-toll low-income equity programs of relevance in Washington state

The study research extended to state and local agencies with relevant knowledge and experience to help develop options to improve transportation access for toll customers with low income.⁸

Department of Social and Health Services

The Washington State Department of Social and Health Services (DSHS), Economic Services Administration (ESA) helps clients meet basic needs and achieve economic independence through cash grants, food and medical assistance, employment-focused services, refugee assistance, disability determinations, and child support collection. Together, ESA services aim to achieve a unified goal of reducing the number of individuals and families living below 200% of the FPL by 50% by 2025 in a way that eliminates disparities. Examples of means-tested public benefits programs that provide needed supports for people experiencing poverty include Basic Food, which provides assistance for the purchase of food and Temporary Assistance for Needy Families (TANF), which provides cash assistance to parents, caregivers, and people who are pregnant.

These means-tested support programs are large. For example, one in every nine people in Washington State is associated with the Basic Food program. DSHS/ESA makes a significant effort to reach all of those in need, serving nearly all Washingtonians below 130% of the FPL. Although they are often eligible for programs, DSHS attracts a slightly lower but still significant percentage of people of people from 130-200% of FPL partly due to the way some benefits decrease at higher income levels and the decreased need associated with slightly higher incomes.

DSHS' community presence includes 60 offices statewide, mobile offices that focus on rural and elderly populations,

and contracts with regional nonprofits to boost enrollment and provide support services. DSHS has also found outreach success through social media, school districts, mailing campaigns, partnerships with colleges, and WIN-211, a phone line where potential clients may receive information about available services. Notably, there is a DSHS/ESA office within 15 miles of every point on the express toll lanes.

Enrollment is generally quick, with benefits being processed in an average of 10 days from the original application. Applications are accepted in person, by mail, on the phone, or online, with recertification generally required every year.

A DSHS/ESA application called the Benefits Verification System (BVS) is an online resource with no cost to users that allows other organizations to instantaneously and definitively verify whether a person receives public benefits from Washington State. This system is used by, among others, housing authorities to verify the qualification for subsidized housing benefits. DSHS/ESA created the program to reduce the excessive cost of other agencies' requests for verification information by phone, fax, and mail. The system requires a name and associated identification number, which can be either a social security number or a DSHS/ESA client identification number, which is provided to DSHS/ESA users on most correspondence. DSHS/ESA is able to provide additional information – for example, income level and which programs individuals are benefiting from – but for legal and privacy reasons receipt of the extra data requires written permission from the client.

ORCA LIFT

King County Metro operates a program called ORCA LIFT, which provides discounts on transit fares for riders with low income. While the benefit provided to drivers by the program varies by operating agency and the type of ticket purchased, it is generally upwards of 50% less expensive to purchase a ticket through ORCA LIFT.⁹

To currently qualify for the program, a person's income must be below 200% of the FPL. King County Metro is evaluating a supplementary program that would grant free transit fares to individuals whose income is below 80% of the FPL. Because these thresholds don't exactly match the information provided by DSHS's BVS system, the two agencies are working together on a custom verification process. Eligibility levels are discussed in further detail later in this section.

Community members can enroll in ORCA LIFT at King County Public Health or DSHS offices, as well as through other nonprofit partners contracted to provide services. One motivation for not relying solely on DSHS systems is that King County is a

sanctuary county, and as such provides public benefits to people without documentation, which DSHS does not do. With the additional nonprofit partners, King County Metro found that reimbursement methods for the costs of program administration that are variable based on the resulting enrollment figures, as opposed to a lump sum payment, worked more effectively.

Other low-income programs in Washington state rely on either DSHS or ORCA LIFT for enrollment. An ORCA LIFT card also makes an individual eligible for discounted parking permits at park and rides and discounts to dispose of recyclables and garbage. Other agencies, such as Seattle City Light and Washington State Ferries have considered either joining or emulating the ORCA LIFT program.^{10 11} Under the Vehicle License Fee Rebate Program, individuals who are enrolled in Basic Food, or are otherwise earning less than 70% of the state’s median income, are also eligible to receive a \$20 rebate on Seattle’s vehicle license fees.¹² As was recently reflected in Washington State Ferries’ customer outreach, operating various low-income programs through shared mechanisms provides value for users with low incomes who face less complex enrollment as well as fewer verification tasks and trips to enrollment offices.

Eligibility Criteria

For the low-income programs reviewed in this study, the most common eligibility threshold is 200% of the FPL. While there are nuances with regard to specific eligibility in programs (often related to alternative qualification criteria, work requirements, asset requirements, or whether benefits vary by income), this threshold is broadly used by DSHS, ORCA LIFT, the Illinois Tollway I-PASS Assist Program, LA Metro Low-Income Assistance Plan, and the VDOT Toll Relief Program.

As of 2020, 200% of the FPL is \$25,520 for individuals, and \$52,400 for a family of four.¹³ Note that as a result of the commonality of this threshold, knowing that someone is enrolled in public benefits in Washington is approximately equivalent to knowing that their income was below 200% of the FPL at the time of enrollment.

When enrolling users in their programs, DSHS makes several attempts to verify income, whether through employers directly, or through pay stubs and bank statements. As a last option if none of these are available, DSHS accepts a statement from the user about their income. DSHS can accept these attestations either in office or over the phone through a recently implemented telephonic signature system.

A criticism of using the FPL, or double the FPL, as an income threshold for benefit programs is that it is too low as a descriptor of poverty. ALICE, a project of United Way, calculates a “survival budget” for Washington state, which it defines as the minimum cost of household essentials.^{14 15} The annual report finds that whereas the survival budget for an individual is close to 200% of the FPL, there is a significant divergence as families grow, and the survival budget for a family of four was \$72,600 in 2018 – approximately 40% above 200% of the FPL. The FPL does not make detailed and modern calculations as currently done by ALICE – the FPL is simply an inflation-adjusted version of a calculation made in 1963 which assumed that one third of a low-income household’s budget would go toward meeting the family’s food needs, as determined by the Department of Agriculture’s minimum food estimations.¹⁶ While the share of Americans’ income spent on food is falling, for those households with the lowest quintile of incomes, the share of their income spent on food remains at about one third.¹⁷

Toll Equity Research in Washington State

Two major studies have been conducted that consider in depth the equity effects of tolling in Washington for people with disparate incomes.

- ▶ A 2009 WSDOT study titled “The Impacts of Tolling on Low-income Persons in the Puget Sound Region” is primarily a modeling exercise that considered the theoretical effects of tolling on families with low incomes. It found that tolling could have a notable impact on families with low incomes, with significant increases in these households’ share of income going toward transportation. However, the report also notes that how the toll revenues are used is a key factor on whether people with low incomes gain or lose from tolling, and that a gas tax is generally even more regressive than tolling.
- ▶ The Washington State Transportation Center, a partnership between Washington State University, the University of Washington, and WSDOT, published a 2019 study titled “I-405 Express Toll Lanes: Usage, Benefits, and Equity”.¹⁸ This study used data from trips on the I-405 ETLs, as well as various other demographic and operational data sources, to understand how the ETLs are used and how benefits are distributed among various user groups. Notably, the study was able to draw conclusions about those paying tolls, but not those drivers of the corridor who do not use the ETLs.¹⁹ Key conclusions from the study include:

- ▶ Higher-income drivers use the facility more often than drivers with low incomes, but high-income drivers do not make up a majority of drivers.
- ▶ Drivers with low incomes disproportionately use the express lanes when tolls and time savings are high. As such, raising the minimum toll would not disproportionately affect corridor drivers with low incomes.
- ▶ The facility provides net benefits to drivers in aggregate, even without counting carpooling or transit benefits.
- ▶ While drivers with low incomes benefit more per trip, high-income drivers benefit more overall because they use the facility more often.

Other Equity Policies and Programs Existing Today in Washington State

Additional regional policies seek to further equity, including for people with low incomes. These include:

- ▶ DSHS provides application forms in nine languages including English, and provides interpretation on the phone or in DSHS offices into a significant number of additional languages. ORCA LIFT information is similarly available in 14 languages including English, which significantly helps with making the program accessible. Furthermore, there is a focus on putting program information into visual formats. These approaches enable greater enrollment in various programs for people with low incomes.
- ▶ The Puget Sound Regional Council conducts trainings for staff to discuss the historical implications of racial inequities. Since people who are Black, Indigenous, and People of Color disproportionately experience low incomes, programs that address racial inequities can function as low-income equity efforts.
- ▶ The Seattle Race and Social Justice Initiative (RSJI) aims to end institutionalized racism and race-based disparities in the city government. The program requires every department and agency within the city to develop an annual RSJI work plan and staff trainings.

Comprehensive Toll Equity Toolkits

This study searched for and reviewed published toolkits that are relevant to the ideation and evaluation of a prospective low-income toll program.

A 2019 toolkit published by TransForm, a nonprofit based in Oakland, CA, called “Pricing Roads, Advancing Equity”, argues that inequities in transportation may be addressed in part by equitable road pricing, and includes a toolkit for implementing equitable road pricing programs.²⁰ The report suggests performance metrics for choosing and evaluating programs – these performance metrics are included in discussion later in this report. The toolkit also encourages planners to understand data on focus populations, study benefits and burdens, choose programs that further equity, and set up a policy of feedback and evaluation once the programs are in place. This list of recommendations is fairly universal among all toolkits reviewed and discussed in this section, for example, the National Cooperative Highway Research Program’s 2018 publication titled “Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox”, which encourages planners to understand the project context, the governance context, relevant stakeholders, and to measure impacts, consider mitigation strategies, document results, and conduct continuous monitoring.²¹

An FHWA report titled “Environmental Justice Analysis in Transportation Planning and Programming: State of the Practice”, published in 2019, also suggests performance metrics which are included in discussion later in this report.²² The report is primarily focused on outreach such that the voices of people with low incomes and people who are Black, Indigenous, and people of color are heard in planning processes. The report also argues against geographic definitions for equity programs, since they can often obscure meaningful differences on a neighborhood-by-neighborhood and individual-by-individual basis.

Another FHWA report, published in 2013, titled “Guidebook for State, Regional, and Local Governments on Addressing Potential Equity Impacts of Road Pricing”, is focused primarily on performance measures to evaluate equity programs related to dynamically priced road segments – as with the above studies, these performance measures are discussed later in this report.²³ This FHWA report also lists equity remediation strategies for road pricing, including progressive usage of toll revenues, discounts or exemptions, cash payment, toll caps, provision of easier access to transponders, park and ride facilities, and increased access to transit. Further advice on selecting performance indicators is also provided in “Equity Analysis in Regional Transportation Planning Processes”, a Transit Cooperative Research Program publication from 2020.²⁴

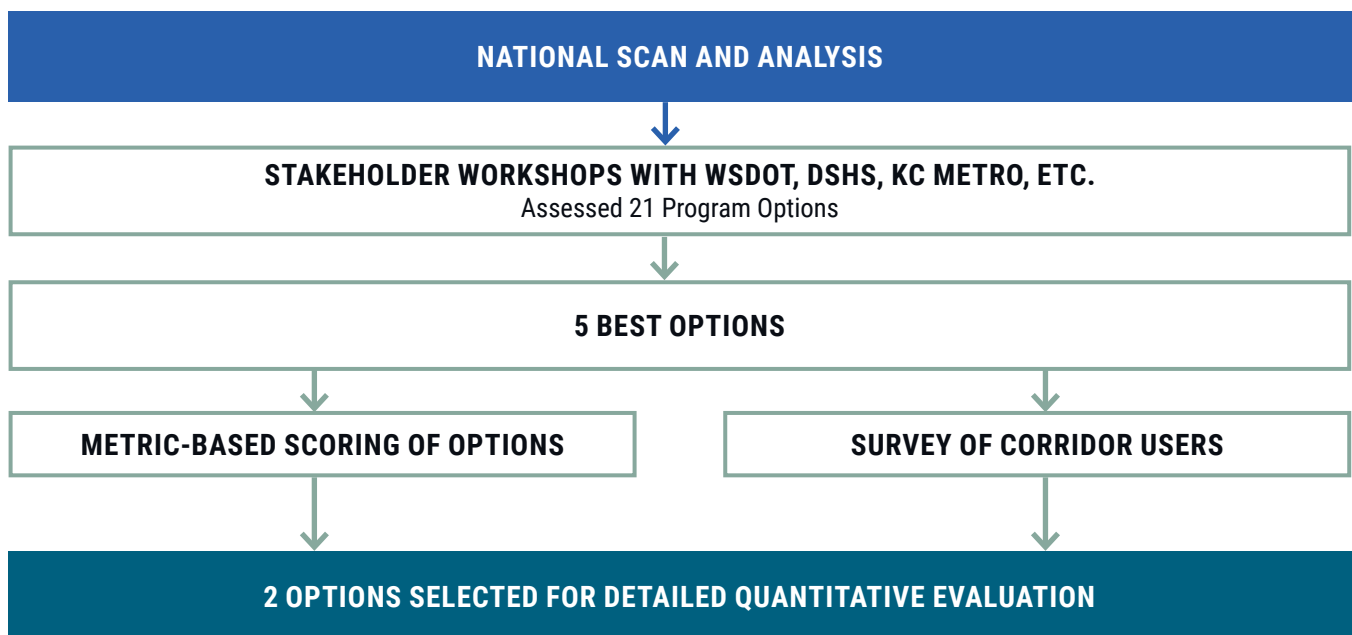
3 Screening and Selecting Program Options



In order to establish the parameters of this study and focus in on the most effective and feasible approaches to offering potential incentives for drivers with low incomes to use the express toll lanes (ETL), a number of input processes were carried out to gather broad-based perspectives. Stakeholder workshops were held, surveys of drivers with low incomes were conducted, and possible program options were evaluated, with qualitative and quantitative screening completed as part of the study. This screening included qualitative and quantitative metrics guided by the legislative direction. The metrics addressed the benefits of the program to potential program participants, its impact on ETL operations, program costs, and implementation feasibility.

During the workshops the need to gain input from potential participants of a low-income toll discount program was identified. The purpose of the outreach was to assess the benefits of each of the options to users of a potential program. Outreach was conducted through two online surveys of low-income users of I-405 and SR 167. The first was conducted in November 2020 and the second in March of 2021.

FIGURE 3. Study Process for Low-Income Program Discount Options



Stakeholder Agency Workshops

Critical to determining the agencies' ability to support a low-income toll discount program, the Washington State Transportation Commission (WSTC) conducted stakeholder workshops with staff from key agencies who may be responsible for implementing, or could support, a potential low-income toll discount program. The workshops were designed to identify and document potential program options, eligibility verification methods, and agencies' organizational, financial and system capacities for implementing or supporting a low-income toll discount program. The workshops included representatives from the Washington State Department of Transportation's (WSDOT) Toll Division, the Washington State Department of Social and Health Services (DSHS), King County Metro, and the WSTC.

In total the WSTC held five stakeholder workshops. The first three were jointly held with representatives from all the stakeholder organizations. Due to scheduling constraints, and the impact from state furloughs, the fourth and fifth workshops were held individually with representatives from the WSDOT Toll Division staff and DSHS staff, respectively. Due to the COVID-19 pandemic all five workshops were held virtually.

Workshop participants represented the areas of policy and planning, systems and technology, customer or client services, and marketing and communications. During the workshops staff identified a range of potential program options, pros and cons, potential mitigation strategies, and proposed evaluation criteria. The work from the series of workshops is documented here and the most feasible low-income tolling discount options were moved forward for further consideration as part this study.

When evaluating the options for potential consideration, workshop participants were directed to consider the Legislature's guidance in the study's authorizing language to determine the value of the various options³:

“(c) The transportation commission shall, at a minimum, consider the following issues when conducting the study of discounted tolls and other similar programs for low-income drivers:

- (i) The benefits, requirements, and any potential detriments to the users of a program;*
- (ii) The most cost-effective way to implement a program given existing financial commitments, shared cost*

requirements across facilities, and technical requirements to execute and maintain a program;

(iii) The implications of a program for tolling policies, revenues, costs, operations, and enforcement; and

(iv) Any implications to tolled facilities based on the type of tolling implemented on a particular facility.”

In order to determine item (i), it was recommended the WSTC connect with potential participants in a low-income toll discount program. In response, an online survey of low-income users of I-405 and SR 167 was conducted in November 2020 and the results are detailed in Appendix C.

Workshop Approach and Results

Workshop participants were asked a series of questions related to a potential low-income toll discount program within Washington State. The first consideration was the exploration of potential verification methods. Three options were considered, and it was recommended that any low-income toll discount program be made available to all Washington State residents who receive state social services through DSHS and verified by accessing the Benefit Verification System (BVS). BVS is a free online resource that allows partner agencies to validate a person's public benefits in Washington State. Though some cost considerations to align with WSDOT requirements (see Chapter 4), this is a cost-effective tool currently in place and used by agencies in a similar manner. Preliminary evaluation indicates use of the DSHS BVS would limit the burden to the participant application process and streamline agency enrollments.

Notes related to the evaluation of the three eligibility verification options are included in Appendix B.

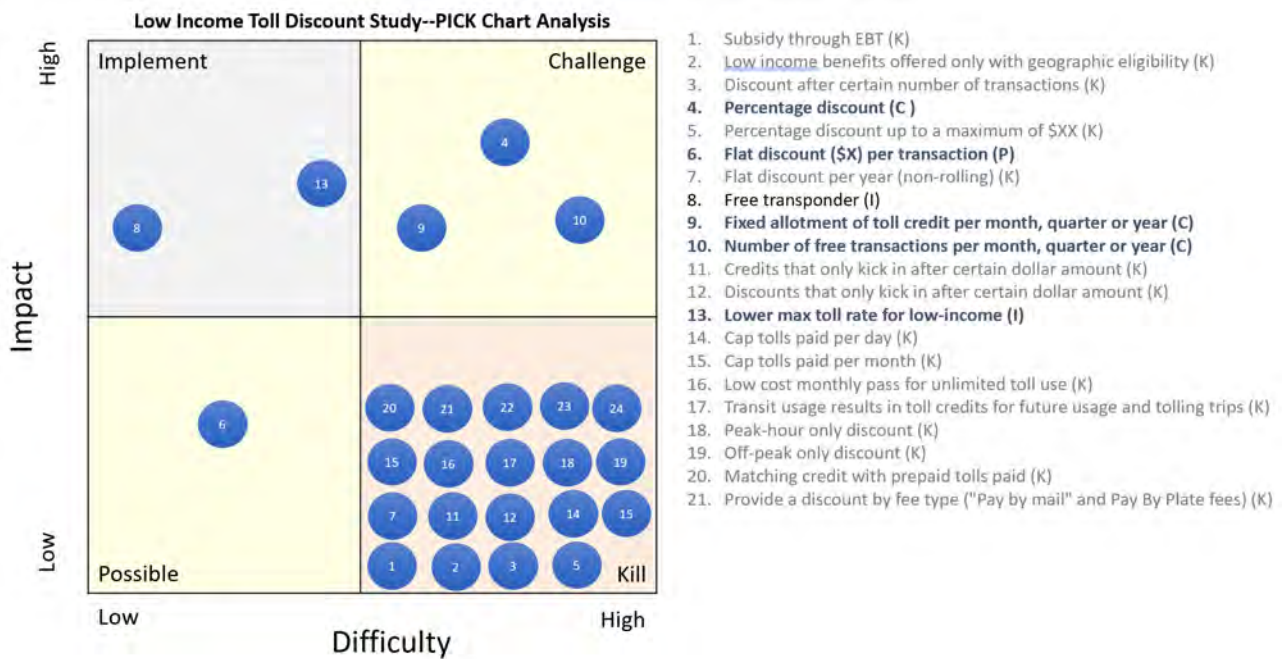
Workshop participants also brainstormed potential program elements and then performed an initial evaluation of each option using a P-I-C-K chart analysis.

- ▶ **“P” (Possible)** rated options were identified as easy to implement but low value
- ▶ **“I” (Implement)** rated options were easy to implement with high value
- ▶ **“C” (Challenge)** rated options were challenging to implement with high value
- ▶ **“K” (Kill)** rate options were challenging to implement with low value

³ “Engrossed Substitute House Bill 1160”, Sec. 205, State of Washington, 2019, <http://leap.leg.wa.gov/leap/budget/lbns/1921Tran1160-S.SL.pdf>

Options that received a “P”, “I” or “C” were further evaluated for potential benefits, challenges, and possible mitigation strategies. Options identified as “K” were eliminated from further analysis. In total there were 21 potential program elements that were considered and of those six program elements were classified as a “P”, “I” or “C” and further evaluated. Five of the program elements were discount options, the sixth was the distribution of free transponders (workshop option 8), which was included in the list of additional program components, as opposed to being considered as a discount option. The results of the PICK chart analysis are included below. Workshop option 8 – the provision of a free transponder – was included in the list of standard program components as opposed to being considered as a discount option. The complete results of the workshop analysis is included in Appendix B.

FIGURE 4. PICK Chart Analysis from Workshops



Based upon the results outlined above, the five discount options that emerged from the PICK chart analysis were each assigned a range of benefit levels for purpose of evaluation, and then vetted with WSTC Commissioners at the November and December 2020 WSTC meetings. The discount options and benefit levels evaluated and presented to the WSTC Commissioners are summarized in the table below.

TABLE 4. Low-Income Program Discount Options and Objectives

Discount Option	Benefit Levels Evaluated	Discount Objective
Percentage discount	<ul style="list-style-type: none"> ▶ 25% discount ▶ 50% discount ▶ 75% discount 	Mostly benefit low-income drivers who are regular commuters during peak times.
Fixed discount	<ul style="list-style-type: none"> ▶ \$0.50 discount per trip ▶ \$2.00 discount per trip ▶ \$5.00 discount per trip 	Mostly benefit low-income drivers who travel at off-peak times, and those who make short ETL trips.
Fixed toll credit (per month, etc.)	<ul style="list-style-type: none"> ▶ 50% of average amount spent on ETLs by all users ▶ 100% of average ▶ 150% of average 	Allows users choice of whether they would use program for occasional high-cost trips, or a larger number of low-cost trips.

Discount Option	Benefit Levels Evaluated	Discount Objective
Fixed number of free toll trips (per month, etc.)	<ul style="list-style-type: none"> ▶ Three free trips monthly ▶ Ten free trips monthly ▶ Twenty free trips monthly 	Program would encourage use of ETLs for infrequent high-value trips (medical, childcare, late to work, etc.)
Lower maximum toll	<ul style="list-style-type: none"> ▶ 25% lower maximum ▶ 50% lower maximum ▶ 75% lower maximum 	Allows low-income drivers to plan to use ETLs with greater frequency during peak times.

Metrics to Evaluate Program Options

To evaluate the five low-income toll discount program options, the options were scored using a set of 17 evaluation metrics, with scores applied to each benefit level of each option. Metrics were identified with guidance from a variety of sources including:

- ▶ Existing low-income toll programs;
- ▶ Equity frameworks; and
- ▶ Washington State policy guidelines for toll facilities (*RCW 47.56.830*).

For purposes of scoring the discount options, the metrics were sorted into groups that aligned with the study's legislative proviso. These groups were as follows:

TABLE 5. Grouping Of Metrics Used In Study And Mapping To Proviso

Study Metrics Grouping	Legislatively Required Study Elements <i>ESHB 1160, Sec 205(2)</i>
User Benefit: assessment of potential user benefits from program.	(c)(i) The benefits, requirements, and any potential detriments to the users of a program
Program Cost: assessment of program implementation and operations costs.	(c)(ii) The most cost-effective way to implement a program given existing financial commitments, shared cost requirements across facilities, and technical requirements to execute and maintain a program (c)(iii) The implications of a program for tolling policies, revenues, costs, operations, and enforcement
Operational Impact: assessment of impacts on toll rates, travel time and other operational impacts.	(c)(iii) The implications of a program for tolling policies, revenues, costs, operations, and enforcement
Other Feasibility: includes assessment of program sustainability and stakeholder understanding.	(c)(iv) Any implications to tolled facilities based on the type of tolling implemented on a particular facility.

The program discount options were scored through the evaluation metrics. Scoring of the toll discount program options was informed through a combination of research and analysis done for this study, information from the stakeholder workshops, and iteration with various stakeholders and the WSTC. A summarized version of the scoring results are shown in the figure on the following page.

FIGURE 5. Metric and Survey Results for Low-Income Program Discount Options

Metric Type:		Score	Score Level	Survey Preference	User Benefit	Operational Impact	Other Feasibility	Program Cost
Percentage discount	25%	50%	Medium	Low	Low	Medium	High	Medium
	50%	57%			Medium	Large	High	Medium
	75%	53%			High	Large	High	Large
Fixed discount	Up to \$0.50 per trip	58%	Medium	Low	Low	Small	High	Small
	Up to \$2.00 per trip	59%			Medium	Small	High	Small
	Up to \$5.00 per trip	56%			High	Large	High	Medium
Fixed toll credit	50% of avg.	62%	High	Medium	Medium	Small	High	Small
	100% of avg.	67%			High	Medium	High	Medium
	150% of avg.	63%			High	Large	High	Large
Fixed number of free toll trips	3 per month	64%	High	High	Medium	Small	High	Small
	10 per month	66%			High	Medium	High	Small
	20 per month	66%			High	Large	High	Medium
Lower maximum toll	25% lower	35%	Low	High	Low	Medium	Medium	Medium
	50% lower	30%			Low	Medium	Medium	Medium
	75% Lower	33%			Medium	Large	Medium	Large

Additional detail about the metrics, and the scoring evaluation are included in Appendix D.

User Surveys

In order to further evaluate the benefits of the low-income toll discount program options for potential program participants, two online surveys of drivers with low-incomes who use I-405 and SR 167 were conducted, one in November 2020 prior to the WSTC Commissioners’ selection of two low-income toll discount program options for further analysis, and a second in March 2021 after that analysis was underway. Though supportive of the analysis process by providing additional insight on driver preferences and behaviors, the response rate for both surveys was limited. Additional outreach is recommended as part of any future study work. Additional information about the surveys and responses is available in Appendix C.

Initial Survey of Program Options

The first survey, conducted in November 2020, was of residents with low incomes living within ten miles of the I-405 / SR 167 ETL corridor. In partnership with a market research firm the survey solicited feedback on the five toll discount program options and respondent’s use of the I-405 and SR 167 corridors. The survey was available online and in English; the invitation to participate in the survey was emailed to more than 20,000 residents in November 2020 and resulted in 196 responses, across 150 completed surveys, 71 respondents with a household income below 200% of the Federal Poverty Level income threshold. The preference results for the program options is summarized in the table below:

TABLE 6. Survey Results for Low-Income Program Discount Options

Please rank which type of discount you would most prefer on the I-405 / SR 167 Express Toll Lanes.	First choice	Second choice	Third choice	Fourth choice	Last choice
Free trips (for ex. two per month)	41%	20%	11%	10%	18%
Lower maximum toll rate	32%	28%	13%	8%	18%
Toll credit (for ex. save \$10 per month)	6%	24%	27%	24%	20%
Percentage discount (for ex. save 25% per trip)	15%	6%	31%	24%	24%
Fixed discount (for ex. save \$1 per trip)	6%	23%	18%	34%	20%

Follow-up Survey of Selected Program Options

The second survey of drivers with low incomes further evaluated preferences between the two program options selected for further analysis, which are described in the following section. The survey expanded the geographic area of the survey and used the WSTC's Voice of Washington Survey Panel to understand user preference for the two discount options that were ultimately advanced for more detailed analysis – a toll credit, and a number of free trips. Results of this survey are further referenced in the Selection of Program Options section below and in Appendix C.

Selection of Program Options

Based on input from the metric scoring exercise and the initial survey, as well as related research and analysis developed for this study, the WSTC Commissioners selected two low-income toll discount program options for further analysis as the best options for providing intended benefits to potential program participants. These options were as follows:

- ▶ **Program Option:** Fixed monthly toll credit
 - **Benefit Level:** Credit amount equal to 100% of average monthly amount spent on ETLs by all drivers
 - This option was the highest scoring option from the metric ranking exercise, and is flexible for the program participants, allowing them the choice to use the program for occasional high-cost trips, or a larger number of low-cost trips. Minnesota Department of Transportation selected this option for their prospective low-income toll program.

- ▶ **Program Option:** Fixed number of free toll trips per month
 - **Benefit Level:** 10 free trips per month
 - This option was the most-preferred option from the first survey conducted and could encourage program participants to choose the ETLs for infrequent high-value trips (such as medical or childcare trips, or when late to work). It should be noted this would not include high-occupancy trips that are already free, and that the University of Washington study found that only 3.3% of drivers with low incomes who use the ETLs entered the lanes more than ten times per month.

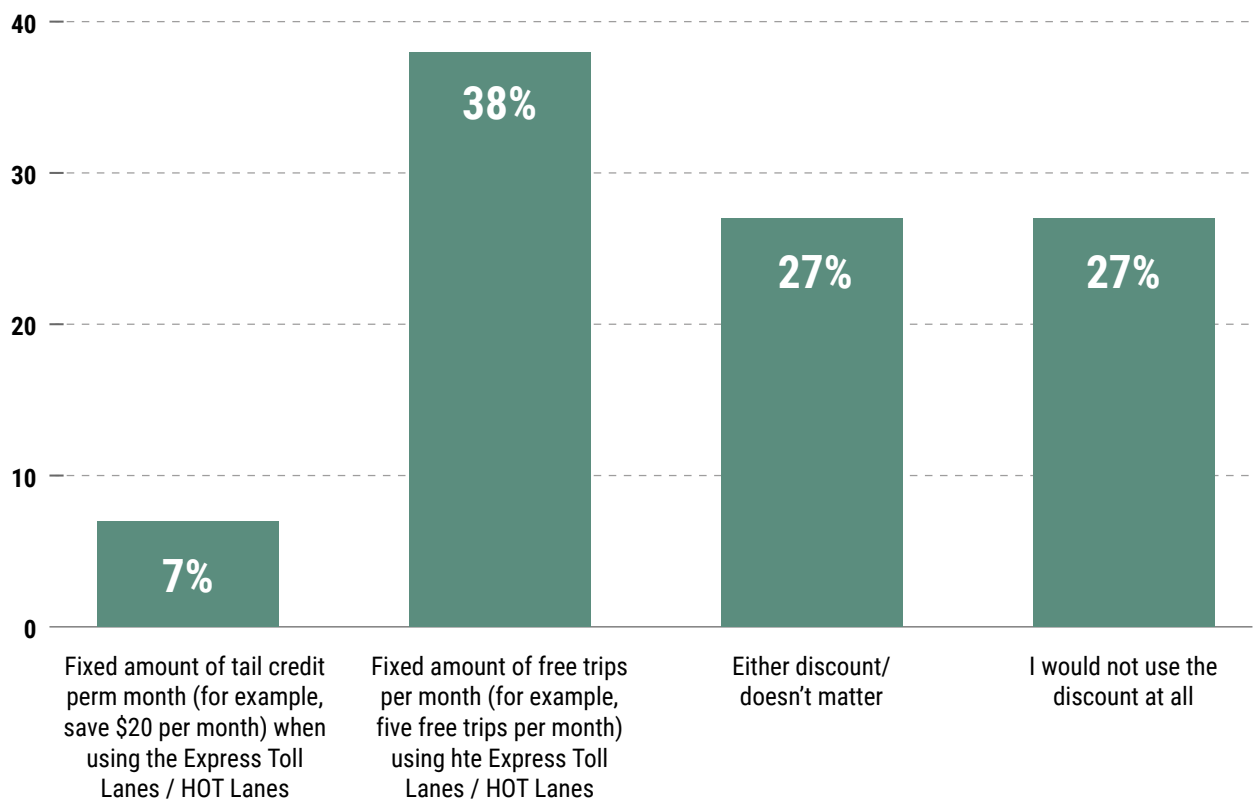
For both program options, credits or free trips would accrue to program participants' toll accounts at the beginning of each month. The credits and free trips are assumed to apply to the first trips taken by the program participant in each calendar month until the credits or free trips are exhausted, after which regular toll rates would apply.

The two selected options scored highest overall on the metrics, and also scored well on the survey of residents with low incomes living in the corridor area. Of particular importance to the WSTC Commissioners’ decision, the selected options scored especially well on the metrics for user benefit compared to the other options, including providing benefit to the program participants for infrequent but high value trips, such as for medical appointments, and for eliminating a financial barrier to participation by increasing the opportunities to use the express toll lanes at no cost.

The research, stakeholders, and survey results highlight that providing at least some trips for free would significantly increase program participation, and the value of the program to participants. It also strongly suggests the high value to potential participants of implementing agencies not requiring program participants to maintain a minimum account balance or a linked credit or debit card to their *Good To Go!* account, though implementation and operating impacts would need to be assessed. By eliminating this financial barrier to enrollment, this may help enable and encourage participation by individuals who are unbanked, underbanked, or have very low wealth, whose enrollment may be significantly impacted by this kind of enrollment burden.

Though not contributing to the program selection process, the follow-up survey in March 2021 that focused on the two selected program options provided additional insight on preferences between the two options. This survey demonstrated strongest support for a fixed number of free trips at 38%, with 7% supporting a fixed amount of toll credit. In addition, 27% did not have a preference, and an additional 27% said they would not use the discount.

FIGURE 6. Survey Results for Low-Income Program Discount Options (March 2021)



Also in the follow-up survey, respondents preferring either of these options spoke about the importance of having it be easy to keep track of the remaining benefit, which they felt these options accomplish well, as well as the stress-reducing benefit of not getting charged for occasional accidental trips in the ETLs when attempting to use the general-purpose lanes on the I-405 / SR 167 ETL corridor. For the free trips option, respondents also spoke about the ease of pre-planning which days they would use the credits for.

The two selected toll discount program options are further discussed in Chapter 4, where the results of the quantitative evaluation of estimated program use and program costs are detailed.

Additional Program Components

In addition to a potential low-income discount option, the following standard components support meeting equity considerations in state tolling policy guidelines⁴ and support the program value statement by making the tolling program more accessible, more broadly understandable, and by creating a feedback mechanism to ensure it's working well for the eventual participants of the program. Research conducted for, and stakeholder feedback received during this study emphasized that these standard program components are essential for driving enrollment in a low-income toll program, and significantly bolster the positive equity impacts of both the program and the ETLs. More information on the assessment and sources for these program components is available in Appendix D.

The recommendations were evaluated with the WSTC during the Commission's November 2020-January 2021 meetings.⁵

TABLE 7. Standard Program Components Recommended

Standard Program Components
<p>Provide a free Good To Go! Flex Pass to program participants</p> <ul style="list-style-type: none">▶ The recommendation for the free transponder to be a Flex Pass is made so that program participants would have access to free high-occupancy trips that are only possible to access through the toggleable Flex Pass.
<p>Establish a program advisory panel, including low-income participants of the program, that is diverse with regard to race, geography of residence, age and gender, which reports out at least annually⁶</p> <ul style="list-style-type: none">▶ The pilot program can iterate based on at-least-annual feedback received from the advisory panel concerning how well the program is working for participants.
<p>Make program documentation available in all primary languages for the region, with live translation available for other languages used in the region, and using language that is inclusive⁷</p> <ul style="list-style-type: none">▶ The accessibility approaches listed here will drive public knowledge of and enrollment in a potential low-income tolling program.
<p>Show program information in visual formats as much as possible</p>
<p>Accommodate participants with disabilities in the enrollment process (physical and remote), and implement using staff who have received equity training</p>
<p>Make program enrollment accessible geographically to keep time cost of enrollment low</p> <ul style="list-style-type: none">▶ Since the ETL corridor is long, and drivers may only use a small segment of the corridor, requiring travel to a customer service center to enroll may represent a significant time and financial cost, diminishing the value of the program to the participants, and lowering expected enrollment.

4 "Policy guidelines for eligible toll facility proposals", Washington State Legislature, 2008, <https://app.leg.wa.gov/rcw/default.aspx?cite=47.56.830>

5 WSTC Meeting materials available at: <https://wstc.wa.gov/meetings/>

6 It was suggested by stakeholders that the advisory panel should have a representative from the Commission to enable clear communication of the advisory panel's feedback and recommendations to the Commission, and Commission information to the advisory panel. Furthermore, it was suggested that the advisory panel should be large enough to include a diverse set of users and stakeholders, but small enough to be a coherent forum for providing feedback, and then it meet often enough to iterate on feedback but also consider members' time constraints. The advisory panel structure should also be considerate of members' income limits and attempt to find ways to reimburse members for their time.

7 Primary languages are legislatively defined to include at least Spanish, Vietnamese, Cambodian, Laotian, and Chinese. DSHS has expanded the list to include Korean, Russian, and Somali because of experienced agency needs.

4

Assessment of Costs, System Performance, and Revenues



With two low-income toll discount program options now identified for further assessment, the next step was to determine implementation assumptions for each option, along with the estimated costs, and potential impacts to system performance and revenue collections.

The two program options assessed were:

- ▶ **Fixed Number of Free Toll Trips:** program participants receive 10 free express toll lanes (ETL) toll trips per month, or
- ▶ **Fixed Toll Credits:** Program participants receive a monthly toll credit equal to the 100% of the toll usage of the average ETL customer – assessed at \$48 in toll credits per month

Both options above included the assumption that the standard program elements for enrollment and engagement identified in Chapter 3 would be a part of their structure.

The project team worked with Washington State Department of Transportation (WSDOT) and Washington State Department

of Social and Health Services (DSHS) staff to identify the most cost-effective way to deliver a proposed low-income discount program and estimated program costs. This included assessing the traffic and revenue impacts of the program options using existing traffic and revenue forecasting models used in recent corridor studies. They then estimated how toll traffic might change with each program option at different levels of participation by eligible drivers and calculated how those changes could affect toll revenues.

Program Implementation Assumptions

The first step in the analysis was to identify the most cost-effective way to deliver the proposed low-income discount programs based on staff knowledge and judgment. Assumptions were developed for study purposes with the intent they would be reevaluated at the program design and implementation stage. Implementation details are similar for both options, except for the assumed discount provided to drivers.

Registration and Verification of Program Participants

The analysis assumed individuals earning below 200% of the Federal Poverty Level (FPL) would be eligible for the program. This standard is used for a variety of low-income programs administered by DSHS, as described in Chapter 2. The Benefit Verification System (BVS) is the DSHS online resource used to validate a person's public benefits in Washington State. For simplicity, consistency, and cost effectiveness, it is assumed this resource would be used to verify eligibility of toll customers for a low-income discount program.

Additional registration and verification assumptions for this analysis were:

- ▶ The BVS is an online tool available to access at no cost for WSDOT. However, BVS requires entry of either a Social Security number (SSN) or a DSHS client number. A process for WSDOT customer service representatives to use this tool without collecting or retaining participants' SSN may need to be identified.

- ▶ WSDOT's customer service center vendor staff would process customer applications.
- ▶ WSDOT would provide customers a *Good To Go!* Flex Pass, at no cost. With a Flex Pass, customers are able to designate their vehicle occupancy, and drivers meeting the ETL's vehicle occupancy requirements would be exempt from the toll. For cost evaluation and carpool exemption modeling purposes it was assumed that participants would receive a Flex Pass transponder. However, we note that the option of receiving a sticker pass instead could be provided to program participants.



- ▶ Free trips or toll credits provided by a low-income toll discount program would only be available for use on designated ETL facilities and would be tied to a designated transponder and associated vehicle. Though not assumed for the study, there may be options to link the discount program with all vehicles registered to an account with identified transponders. This could be considered in a design phase for the program.

Program Operation

For this analysis a series of assumptions were made about how a low-income toll discount program would be implemented and the policies that would apply. These assumptions will be re-evaluated at the program design stage, and the Commission will also make toll policy decisions related to a low-income program prior to implementation.

The following assumptions were made for program operations:

- ▶ Free trips or toll credits would be credited to a customer account at the beginning of each month. Any unused balance of trips or credits remaining from the previous month would expire and be removed from the account.
- ▶ For free trips, when a toll transaction is processed through a low-income discount program transponder, that trip will post at \$0 and will be deducted from the available number of free trips.

- ▶ For toll credits, the available credit balance would be applied to cover the entire cost of the transaction.
- ▶ I-405 and SR 167 will be segmented with different toll charges assessed on SR 167, I-405 Renton to Bellevue, and I-405 Bellevue to Lynnwood ETL segments. This analysis assumed that when a program participant travels in more than one segment for a longer trip, each transaction would be deducted from the balance of free trips or toll credits.
- ▶ Any trips made after the free trips or toll credits have been exhausted would be charged at the posted toll rate.

Program Costs

All cost estimates included in the analysis are preliminary, and cost ranges are provided to address uncertainties in policy decisions, program implementation, and operational assumptions. To help address the uncertainties, there are various program design and policy questions that may need to be addressed prior to implementing a low-income discount toll program. Additionally, WSDOT converted to new back-office and customer service vendors in July 2021, so finalizing estimates on the cost of any proposed system enhancements and operational costs to operate a program will need to wait until the new vendors are in a steady-state operation. The costs described below have a wide range but are representative of programs of this scale.

Initial One-Time Costs to Initiate the Program

The new tolling system recently deployed by WSDOT in July 2021 includes functionality for discount toll programs including flat and percentage discounts, but not including the specific discount types discussed in this chapter. The discount programs specified in the contract are included in the contract price and will be completed prior to full system acceptance.

Implementing a program to provide a monthly allotment of free trips or toll credits will require additional one-time work for that will need to be defined and negotiated with vendors.

The one-time costs on the following page, are for work to implement either of the two selected low-income toll discount program options. These costs are preliminary, based on the cost of similar development efforts.

TABLE 8. One-Time Implementation Cost Estimates

One-Time Implementation Cost	Estimated Costs	Notes
Back-office system set-up	\$500,000 - \$1 million	These costs would not be necessary if implementing a flat or percentage discount
Process to enable customer service representatives to use the DSHS's BVS tool without collecting personally identifiable information	\$500,000 - \$1 million	
Customer service center training	\$500,000	
Initial Flex Pass purchase	\$200,000 - \$1 million	Cost depends on program participation levels
Customer outreach	up to \$500,000	
Estimated Total	up to \$2.2 – \$4.0 million	

Ongoing Operating Costs

Vendor customer service center staff would be responsible to process program registration and answer customer inquiries. WSDOT would also incur costs to provide program oversight, accounting and program reporting.

TABLE 9. Ongoing Operating Cost Estimates

Annual Operating Costs	Estimated Costs	Notes
Customer service center operations and account administrative support expenses	about \$500,000 per year	Amount depends on complexity of the eligibility lookup tool and account establishment requirements
Flex Passes inventory, subsidy, and fulfillment processing	\$200,000 per year	
WSDOT staff for ongoing customer service center oversight	up to \$500,000 per year	<ul style="list-style-type: none"> ▶ Amount depends on program participation levels and selected scenario ▶ Incremental staff hours would be attributed to accounting and auditing support, data collection and analysis, vendor oversight and program management, marketing, incremental transponder inventory management, and coordination with other agencies
Estimated Annual Costs Total	up to \$1.2 million per year	

Outside of technical requirements and vendor costs, there are considerations of organizational costs for each agency responsible for implementing and operating the low-income toll discount program, and for other agencies substantially impacted by the program.

Based upon this study’s research, the organizational requirements and impact is anticipated to be minimal as low-income toll program eligibility will be determined through the existing DSHS BVS system, and toll account set-up and administration will be handled by WSDOT vendors. Similar to the high occupancy vehicle (HOV) carpool exemption program on I-405 and SR 167, existing WSDOT staff are anticipated to incur minimal incremental time to monitor and evaluate the low-income toll program. Cumulatively, up to 3.5 full time equivalent staff would represent the higher range of required resources and would be attributed to accounting auditing support, data collection and analysis, vendor oversight and program management, marketing, incremental transponder inventory management, and coordination with other agencies. Associated benefits and related administrative costs would also be incurred.

Policy Assumptions

Operating policies for the full corridor have not yet been defined by the Washington State Transportation Commission (WSTC) but will be defined between now and when the new Renton to Bellevue ETL segment of I-405 is completed and toll systems are updated on SR 167 ETLs for photo tolling and multiple-zone pricing. While completion dates are still fluid, it is currently assumed that both the I-405 ETL Renton to Bellevue segment will open and the SR 167 toll system will be upgraded in 2024.

For the purpose of this analysis, the following operating policies were assumed and held constant.

FIGURE 7. ETL Operations Features

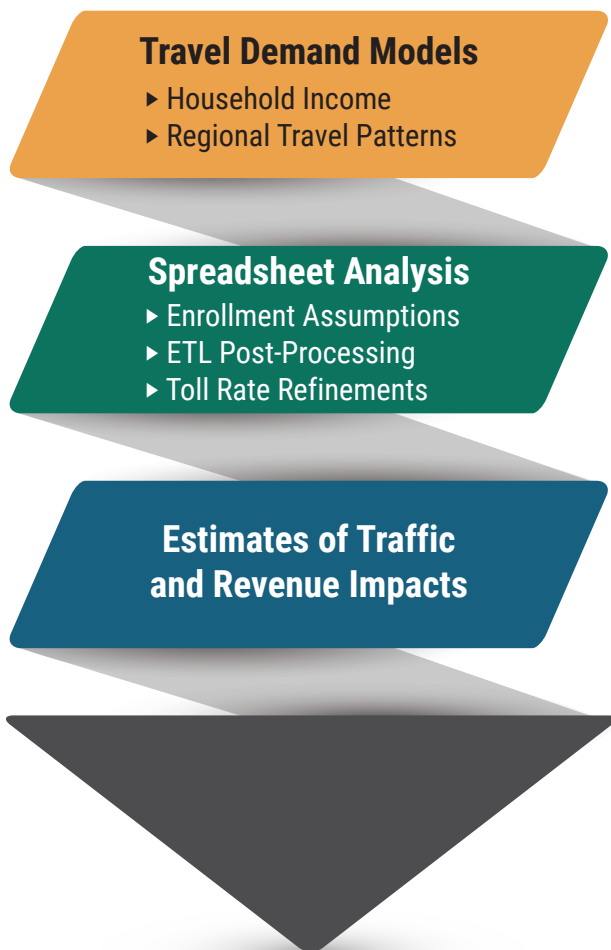
Criteria	FY 2017 - FY 2024		FY 2025 - FY 2057		
	I-405 ETL	SR 167 HOT	I-405 ETL	I-405 ETL	SR 167 HOT
Extents	Bellevue Lynnwood	Auburn Renton	Bellevue Lynnwood	Renton Bellevue	Sumner Renton
Length	17 mi.	16 mi.	17 mi.	11 mi.	16 - 20 mi.
Min Toll	\$0.75	\$0.50	\$0.75 per segment (\$2.25 end-to-end)		
Max Toll	\$10	\$9	\$29 (\$10+\$10+\$10)		
Tolling	O-D	Origin	O-D		
Operating Hours	5 AM - 7 PM		5 AM - 7 PM		
Operating Days	Weekdays	All Days	Weekdays		
HOV 2 + Free	9 AM - 3 PM	5 AM - 7 PM	9 AM - 3 PM		
HOV 3 + Free	5 AM - 7 PM		5 AM - 7 PM		
HOV Reqs FlexPass	Yes	N/A	Yes		
Access	Limited	Continuous	Limited	Limited	Hybrid
Payment Methods	GTG Pass, PBP, PBM	GTG Pass	GTG Pass, PBP, PBM		
Pay by Plate Fee	\$0.25	N/A	\$0.25 (once per trip)		
Pay by Mail Surcharge	\$2.00	N/A	\$2.00 (once per trip)		

Potential Impact to System Performance, Traffic and Revenue

Analysis Approach

To assess the traffic and revenue impacts of the two program options, information about the origin and trip patterns of households with low incomes was drawn from recent traffic and revenue modeling of the I-405 and SR 167 ETL facilities and input into a spreadsheet model. An analysis using the spreadsheet model estimated likely changes to the baseline traffic and revenue data for each of the program assumptions at various levels of participation by eligible drivers. The process is shown in the following graphic.

FIGURE 8. Impact Evaluation Process



Traffic and Revenue Baseline Modeling and Spreadsheet Inputs

These analyses are based on prior and current traffic and revenue studies on the I-405 and SR 167 ETL facilities. The inputs and process for this analysis included:

- ▶ The Puget Sound Regional Council’s (PSRC) regional travel demand model⁸ was used as a basis and was then modified by the state’s traffic and revenue forecast consultant (Stantec; Stantec’s travel demand model) using the same independent socio-economic data, project coding and tolling algorithms used for ongoing traffic and revenue studies in the corridor. This modified version of the regional travel demand model will be referred to in this document as the Stantec travel demand model.
- ▶ This Stantec travel demand model was used to prepare a “base case” forecast. Results of the Stantec base case forecast were then used as inputs to a spreadsheet-based model prepared for this study to conduct specific analyses and post-processing calculations.

The base case forecast includes an assumption of a post-pandemic ‘new normal’ of potential changes in travel patterns that assumes a higher rate of remote work compared to pre-pandemic conditions. The inputs and process for estimating this new normal included:

- ▶ The Stantec travel demand model runs included an updated 2025 model year that reflects a potential ‘new normal’ of travel patterns by trip purpose.
- ▶ While there was no new updated socio-economic forecast to incorporate into the future Stantec travel demand model runs for this study, there have been modifications to the travel demand by trip purpose as proxy. These travel demand model modifications include changes across all trip purposes. This included, but was not limited to:
 - Fewer commuting trips by professional workers in the A.M. periods, and
 - More home-based travel in the afternoon, such as for shopping or recreation purposes.

The PSRC regional travel demand model incorporates income levels by household size and number of workers in the household. The income groups used (in 2010 dollars) are:

- ▶ Income Group 1 – Less than \$30,000
- ▶ Income Group 2 – \$30,000 to \$60,000
- ▶ Income Group 3 – \$60,001 to \$90,000
- ▶ Income Group 4 – greater than \$90,000

⁸ Puget Sound Regional Council, “Trip-Based Travel Model: 4k”, <https://www.psrc.org/trip-based-travel-model-4k>

Income Group 1 is less than \$30,000 per year, which is a reasonable proxy for households with less than 200% of the Federal Poverty Level (FPL) income. Furthermore, Income Group 2 far exceeds the 200% of the FPL threshold. The PSRC model further breaks the trip data for these income groups into several trip tables, based on type of vehicle and trip purpose.

An early modeling goal of this study was also to identify the home locations (zones) associated with trips on the ETLs. The regional travel demand model enables the tracing of trips from the home zone to the destination zone across the entire region and produced two trip matrices (tolled and non-tolled trips), each of which retained the home zone of the traveler and the designated low-income trips. For more detail, please see Appendix D.

Data on how frequently drivers use the I-405 and SR 167 ETLs, and thus how many unique users the corridor has, was evaluated to determine potential customer enrollment ranges for the two toll discount options. Frequency of usage data from 2018 for registered customers of the facility is shown in the table below, as obtained from the University of Washington study referenced earlier in this report. Summarizing the data in the table:

- ▶ Almost 92% of registered customers made less than 40 trips per year in 2018 and accounted for 23.5% of the total trips.
- ▶ Only 0.1% of the registered customers were in the high frequency category, who made over 600 trips in 2018.

FIGURE 9. ETL Usage Frequency

In 2018	Frequency Category	Fraction of Accounts	Fraction of Trips
1 trip	Single	48.2%	2.9%
Between 2 and 40 trips	Monthly	43.7%	20.6%
Between 41 and 120 trips	Weekly	4.7%	20.0%
Between 121 and 250 trips	Regular	2.1%	22.4%
Between 251 and 600 trips	Daily	1.1%	23.5%
Over 600 trips	High	0.1%	10.6%

Source: University of Washington "I-405 Express Toll Lanes: Usage, Benefits, and Equity" study

Once frequency of use categories were identified, additional assumptions were applied to the spreadsheet model analysis for this study to align with operational configurations for the program developed in coordination with WSDOT Toll Division and the WSTC. Primary spreadsheet model analysis assumptions include the following realistically conservative assumptions:

- ▶ The mode shares for this study are consistent with the mode shares in the PSRC regional travel demand model. No mode shift from transit to auto or vice versa is assumed for this study, as program participants with low incomes are assumed to have auto access already.
- ▶ The ratio of *Good To Go!* customers versus Pay by Mail customers is assumed not to change due to either discount program. Customers with low income participating in the program are assumed to be *Good To Go!* customers, but they will be a small percentage of overall customers and the overall ratios will have a de minimis change.
- ▶ The low-income traffic on the ETLs due to the discount programs is assumed to differ by time of day, direction, and scenario based on outputs from the base case travel demand model developed for this study (information such as origin and destination of trips, levels of income, travel time savings, toll costs, etc.).

- For the free trips discount program option, program usage is disproportionately put into the peak period peak direction by facility, as it is assumed that the program participant would potentially travel during higher-tolled periods to maximize benefits of this option.
- For the toll credit discount program option, it was assumed that on average program usage is spread across the day proportionally to existing traffic patterns, noting that some customers would use the credits for high-cost trips and others would use it at a time that is of higher value to them.
- ▶ Operational and toll rate impacts of program usage would vary by time of day:
 - In peak period, peak direction, the average toll is estimated to increase slightly, with some potential operational impacts at times when the facilities are at their maximum tolls. This is more likely to occur with the free trips discount program option. For the toll credit discount program option, it was assumed that changes to ETL traffic would be more evenly distributed throughout the day, having less of an operational impact in the peak period compared to the free trips option.
 - » *Average higher toll rates in peak periods due to more low-income (toll free) traffic was calculated by using the existing relationship between traffic and toll rates, analyses developed by facility and by direction. The increase is, on average, up to 2%.*
 - In shoulder hours around the peak periods, it is assumed no operational impacts would occur, since as the facilities have not reached the toll caps, toll rates can still be increased to control operational performance. The resulting average toll may increase slightly.
 - During the off peak, overnight and weekend time frames, it is assumed no operational impacts would occur, as there is ample capacity available to accommodate the additional low-income trips. Toll rates are assumed to be the same as tolls the base case forecast.

This analysis did not include a specific detailed operational model; however, the spreadsheet model included an analysis of ETL lane capacity constraints based on pre-pandemic trends. Further detailed modeling analysis could refine the preliminary estimated impacts and could also consider other general toll rate and operational policies that may be developed or refined.

Eligibility and Enrollment Expectations

In order to evaluate the discount options, a calculation was made on the enrollment rate (i.e., how many customers will sign-up):

- ▶ Given the average daily traffic on the various segments of the I-405 and SR 167 ETLs, approximately 2% to 6% of the vehicles on the corridor would be enrolled in the program. The following details were necessary to arrive at this conclusion:
 - Data from DSHS on other low-income programs suggested that approximately 3% to 7% of eligible individuals in the study area would sign up for a discount program.
 - Input from DSHS suggested that the people who would sign up would be people who have cars, are primarily not retired, and are likelier to be in the workforce and have longer commutes. Plus, they've clearly expressed some interest in the program, so they're likely to use the corridor.
 - In the survey conducted for this study, respondents suggested that they take approximately 0.5 trips on the I-405/SR 167 corridors per day on average. Given the note above about workforce and longer commutes, a higher figure of 0.75 on the lower end and 1.25 on the higher end was used.
 - From the travel demand model, the average trip of corridor drivers traverses 1.2 segments of the ETLs.
- ▶ Separately, the travel demand model shows that about 15% of trips being made in the corridor are by drivers with low incomes.

These two figures in combination imply that between 10% and 50% of trips on the corridor made by people eligible for the program would be made by drivers enrolled in the low-income toll discount program.

Because the level of participation by drivers eligible for the program is unknown, three enrollment levels were considered to estimate a range of possible impacts:

- ▶ The low enrollment scenario assumes that 10% of I-405 / SR 167 ETL corridor trips made by eligible people with low incomes would be made by people enrolled in the low-income toll discount program.
- ▶ The medium enrollment scenarios used 25% of I-405 / SR 167 ETL corridor trips, and
- ▶ The high enrollment scenario assumed 50% of I-405 / SR 167 ETL corridor trips.

Active low-income toll program accounts are estimated to be as high as 40,000 for the “high” scenario; this calculation assumes an average number of trips per year in the high enrollment toll credit scenario, and it compares with overall active toll accounts for all WSDOT facilities being just under 1.1 million.

Note that the University of Washington “I-405 Express Toll Lanes: Usage, Benefits, and Equity” study conducted for WSDOT and described in Chapter 2 found that SOV and HOV drivers of the I-405 ETLs had comparable incomes, and as such, changing HOV rules is unlikely to have a disproportionate impact on corridor drivers with low incomes, especially if it is coupled with other low-income benefits being contemplated in this study.

Program Impacts on Traffic Volumes and Performance

The spreadsheet model was used to estimate changes to traffic and revenue due to the discount program options. This spreadsheet model included data from the Stantec travel demand model by hour, by direction and by facility (where “facility” is defined as three segments of the I-405/SR 167 corridor for which separate toll transactions will be assessed). Some of these key outputs in support of the analysis include but are not limited to:

- ▶ Share of tolled vs toll-free low-income trips on the ETLs
- ▶ Share of tolled vs toll-free low-income trips in the region
- ▶ A high bookend for percent share of ETL trips that are low income

Using the outputs from the Stantec travel demand model, the spreadsheet model calculated the annual traffic and revenue for each of the two discount program options and compared

those results against the base case forecast model without a discount program. The intent was to assess the impacts of the two discount programs on traffic and revenue for the facilities, based on the following data, calculations and assumptions:

- ▶ Travel frequency data from the University of Washington / WSDOT study
- ▶ An assumption on average number of trips per year per person
- ▶ A calculated percentage share of trips that are eligible to be free
- ▶ An assumption of a small amount of induced demand to the ETLs
- ▶ An average toll rate increase, which is calculated using the existing relationship between ETL volumes and toll rates
- ▶ A new share of toll-free trips associated with each discount option
- ▶ An assumption for participation rate
- ▶ A new calculated average toll rate
- ▶ Annualization factors for traffic and revenue
- ▶ Traffic allocation logic between the facilities

Impact of Low-Income Program Options on Traffic Volumes

The following table shows the changes in paid, free and total trips forecasted for each of the low-income toll discount program options. Note that the transactions in the table are shown in millions per year and differences are compared to the base case, which is the scenario that does not have the low-income discount program.

TABLE 10. Estimated Transactions Impact

	10 Free ETL Trips per month			Toll Credit (\$48 per month)		
	Change in Toll Paying Transactions versus Base Case					
	Low	Medium	High	Low	Medium	High
Bellevue to Lynnwood	-0.2	-0.5	-1.3	0.0	-0.4	-1.1
Renton to Bellevue	-0.1	-0.3	-0.7	0.0	-0.2	-0.6
SR 167	-0.1	-0.2	-0.6	0.0	-0.2	-0.5
All Facilities Total	-0.3	-1.0	-2.6	-0.1	-0.8	-2.2

	10 Free ETL Trips per month			Toll Credit (\$48 per month)		
	Change in Toll Free Transactions versus Base Case					
	Low	Medium	High	Low	Medium	High
Bellevue to Lynnwood	0.2	0.6	1.6	0.1	0.5	1.3
Renton to Bellevue	0.2	0.5	1.3	0.1	0.4	1.1
SR 167	0.1	0.3	0.9	0.0	0.3	0.7
All Facilities Total	0.5	1.5	3.8	0.2	1.2	3.2

	10 Free ETL Trips per month			Toll Credit (\$48 per month)		
	Change in Total Transactions versus Base Case					
	Low	Medium	High	Low	Medium	High
Bellevue to Lynnwood	0.0	0.1	0.4	0.0	0.1	0.2
Renton to Bellevue	0.1	0.3	0.6	0.0	0.2	0.5
SR 167	0.0	0.1	0.3	0.0	0.1	0.2
All Facilities Total	0.2	0.5	1.2	0.1	0.4	1.0

Note: All the transactions are show in millions on an annual basis; differences are compared to a base case that does not have the low-income discount program.

- Ten free ETL trips per month discount option:** The estimated increase in total toll-free trips for the low, medium, and high participation rates is estimated to be 0.5 million, 1.5 million, 4 million respectively. The estimated resulting loss in toll-paying transactions for this discount program based on low, medium, and high participation rates is 0.3 million, 1.0 million and 2.6 million for all facilities (I-405 and SR 167 combined).
- Toll credit equal to the monthly tolls paid by the average ETL customer (\$48 per month):** The estimated increase in total toll-free trips for the low, medium, and high participation rates is estimated to be 0.2 million, 1.2 million and 3.2 million respectively. The estimated resulting loss in toll-paying transactions for this discount program based on low, medium, and high participation rates is 0.1 million, 0.8 million, and 2.2 million for all facilities (I-405 and SR 167 combined).

System Performance Impacts

The proportion of free trips in the ETL traffic stream affects the price paid by other customers and can exacerbate performance issues when prices reach the maximum toll rate (\$10.00). Currently about one-third of I-405 ETL transactions are declared as exempt carpool trips. Implementing either of the low-income program options would likely increase the ratio of free to paid transactions, which could impact both price and performance. WSDOT tracks performance of express toll lanes continuously and (pre-COVID) has not always achieved the 90% reliable performance standard in some areas.

Program Impacts on Revenue

The revenue analysis for this study began with the baseline traffic and revenue forecast for the corridor, which was current when this study was in process. However, forecasts are being updated frequently as new information emerges about the impact and recovery from the COVID pandemic. This study endeavors to illustrate the likely changes to revenue that would occur as a result of implementing either of the two discount program options at each stage of the process.

When the traffic forecasts change or produce different proportions of paid and exempt transactions, revenue is also affected. Several steps are taken to estimate the differences:

- ▶ The number of toll transactions is multiplied by the average toll rate to determine *gross potential revenue*, which is the sum of tolls due if all could be collected. On ETLs, traffic volumes also affect toll rates, which can dampen or amplify the change in revenue. The average toll rate is driven by the total number of transactions in the express toll lanes regardless of whether they are paid or exempt.
- ▶ Not every toll is collected for a variety of reasons, and uncollected tolls are called *leakage*. Sometimes license plates can't be read, customers can't be identified, bills can't be delivered, or customers don't pay their bills. *Adjusted gross toll revenue* adjusts the potential revenue to account for leakage.
- ▶ Finally, the cost of tolling and highway facility operating and maintenance costs are reduced from adjusted gross revenue to determine *net revenue*, which is the amount of toll revenue available to make deposits into repair and replacement reserves and to fund corridor improvements, either in the form of direct investments ("pay-as-you-go") or debt service.

Gross Revenue Potential

Gross revenue potential is the total revenue due if all tolls can be collected. For express toll lanes it is the product of tolled transactions time the average toll rate. The proposed low-income discount program options would affect the number of both tolled and free transactions, as well as the price of tolls.

- ▶ In the previous section, the changes in paid and tolled transactions were described for the two discount program options at various levels of program participation. In the spreadsheet model these changes were broken out hourly over the average weekday.
- ▶ Since toll rates are a function of traffic volumes, average toll rates were calculated by comparing the total number of tolled and exempt transactions per hour with a table of observed toll rates for at the same traffic volumes.
- ▶ Potential revenue for each hour is the product of the number of paid transactions times the average toll rate for each hour of the average weekday, and the daily potential revenue is simply the sum of hourly potential revenue throughout the day.

The following table shows changes in gross revenue potential in millions of dollars per year; differences are compared to the base case, which is the scenario that does not have the low-income discount program. For the free trips program option, potential revenues could be reduced from the baseline by an annual reduction in potential revenue between \$1.5 and \$11.2 million. For the toll credit program options, potential revenues could be reduced between \$0.3 and \$8.0 million.

TABLE 11. Estimated Gross Revenue Impact

	10 Free ETL Trips per month			Toll Credit (\$48 per month)		
	Gross Potential Revenue Losses versus Base Case					
	Low	Medium	High	Low	Medium	High
Bellevue to Lynnwood	-\$0.7	-\$2.3	-\$5.0	-\$0.1	-\$1.2	-\$3.2
Renton to Bellevue	-\$0.4	-\$1.3	-\$3.2	-\$0.1	-\$1.0	-\$2.8
SR 167	-\$0.4	-\$1.3	-\$2.9	-\$0.1	-\$0.7	-\$2.0
All Facilities Total	-\$1.5	-\$4.9	-\$11.2	-\$0.3	-\$2.9	-\$8.0

Note: Revenue differences are shown in millions of dollars on an annual basis; differences are compared to a base case that does not have the low-income discount program.

Adjusted Gross Revenue

Adjusted gross revenue represents the amount of revenue likely to be collected, recognizing that it is not possible to collect every toll. Tolls due but not collected are described as leakage. There’s no reason to believe either of the discount program options would affect the percentage of leakage transactions.

Adjusted gross revenue also adds in fees that are accounted for separately from toll revenue. For example, the 25 cent Pay By Plate fee is not included in potential revenue, but it is included in adjusted gross revenue.

For this analysis we’ve applied the same leakage factors used for I-405 forecasts to the gross revenue potential changed described above. The leakages shown below presents a summary of the actual and projected revenue leakage adjustments assumed on the I-405 and SR 167 corridor under the current tolling program. The first column provides historical and preliminary data for FY 2018 and FY 2019, and the second column shows projected leakage rates starting in FY 2020. The third column represents the final year of the existing vendor extended contract through FY 2021 and the start of the full transition to new back-office systems and operations vendors in FY 2022. The leakage rates assumed with transition to the new vendor in FY 2022 are based on industry best practices and anticipated operating conditions.

TABLE 12. Leakage Figures And Assumptions

Leakage by Primary Category	FY 2018 Actual FY 2019 Preliminary	FY 2020 Assumptions	FY 2021 FY 2022-2029 Assumptions
Unreadable Plate	2.6% 1.0%	3.0%	2.8% 2.5%
Invalid Owner/Address	10.9% 7.0%	10.5%	7.5% 4.5%
Non-Payment	29.5% 28.9%	30.8%	30.8%
Dismissed Prior to NOCP	22.7% 9.2%	15%	15%

Additional HOV violation leakage is applied to the *Good To Go!* transponder transactions: HOV 3+ cap = 3.8%, HOV 3+ w/o cap = 4.18%, HOV 2+ with cap = 4.18%, HOV 2+ w/o cap = 4.6%; Ramp-up is applied for the first five years to align with HOV reported values reflected in FY 2020

The changes in adjusted gross revenues compared to the base case forecast is similar to the gross potential revenue results above, which is expected because the percentage leakages and fees applied with the low-income toll program options are primarily the same as in the base case with the exception of HOV carpool leakage due to false declaration.

With inclusion of the low-income program options, and assumed use of declarable Flex Pass transponders for the program, we assume slightly higher leakage rates due to the absolute increase in the percent share of Flex Pass transponders of the total which allows for leakage to occur. The slight increase in the carpool leakage rate assumptions account for the higher share of Flex Pass transponder through the program and potential for false declaration.

TABLE 13. Estimated Adjusted Gross Revenue Impact

	10 Free ETL Trips per month			Toll Credit (\$48 per month)		
	Adjusted Gross Toll Revenue Losses versus Base Case (\$ millions)					
	Low	Medium	High	Low	Medium	High
Bellevue to Lynnwood	-\$0.6	-\$2.2	-\$4.8	-\$0.1	-\$1.1	-\$3.0
Renton to Bellevue	-\$0.4	-\$1.2	-\$3.0	-\$0.1	-\$0.9	-\$2.6
SR 167	-\$0.4	-\$1.2	-\$2.7	-\$0.1	-\$0.7	-\$1.9
All Facilities Total	-\$1.4	-\$4.6	-\$10.4	-\$0.4	-\$2.7	-\$7.4

Note: Revenue differences are shown in millions of dollars on an annual basis; differences are compared to a base case that does not have the low-income discount program

There is another category of leakage that is not captured in this analysis: some unmeasurable number of carpool exemptions are falsely declared. While this leakage factor is important to understand, it's difficult to quantify and there is no reason to believe it will be affected by either of the discount program options.

Net Revenue

Net revenue is the amount available after covering toll and facility operating, maintenance and major rehabilitation costs available for use to fund corridor improvements (either pay-as-you-go or debt service) and to fund transfers into reserves to add funds to reserves. The diagram shown here illustrates all the revenue adjustment steps that occur in the revenue analysis beginning with gross toll potential revenue and resulting in net revenues available to fund improvements in the corridor.

The discount program options would impact tolling costs in two ways, which are factored into this analysis:

- ▶ There is an increment to toll operating costs to administer the discount program, as discussed above in the sectioned titled *Ongoing Operating Costs*
- ▶ Toll system and staff costs are shared between toll facilities in proportion to their share of toll transactions. To the extent that the discount program options affect the number of transactions on I-405 and SR 167, that will have a small impact on the share of staff and system costs charged to the program.

The change in net revenue results compared to the baseline forecast range from a reduction of \$1.4 million to \$9.6 million per year for the free trips option and from \$0.5 million to \$6.9 million per year for the toll credits option as shown in the following table:

FIGURE 10. Toll Revenue Adjustment Illustration

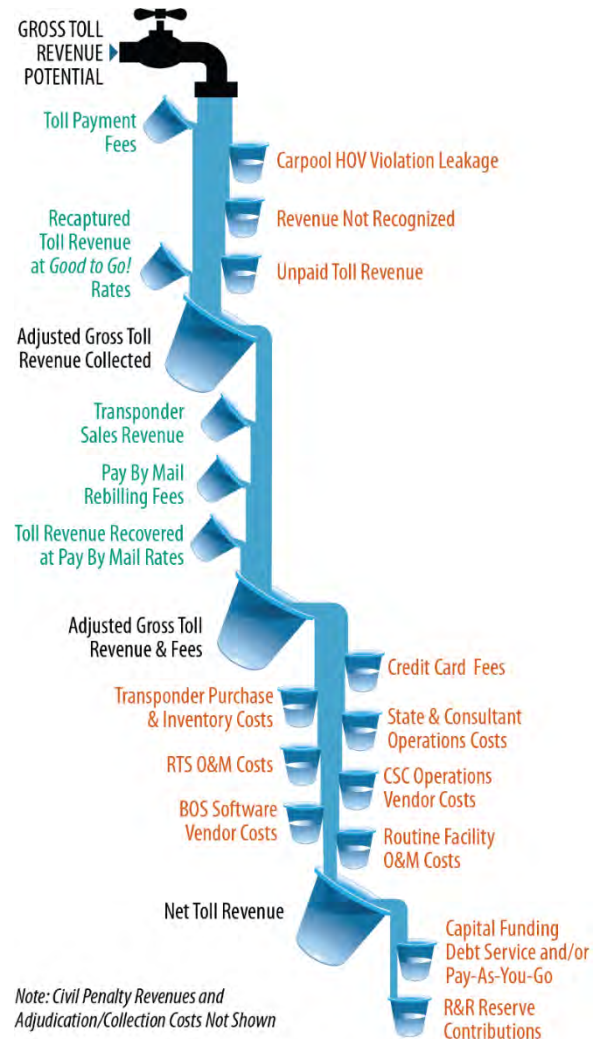


TABLE 14. Estimated Net Revenue Impact

	10 Free ETL Trips per month			Toll Credit (\$48 per month)		
	Low	Medium	High	Low	Medium	High
Net Toll Revenue Losses versus Base Case (\$ millions)						
Bellevue to Lynnwood	-\$0.6	-\$2.0	-\$4.4	-\$0.2	-\$1.1	-\$2.7
Renton to Bellevue	-\$0.4	-\$1.2	-\$2.8	-\$0.2	-\$0.9	-\$2.4
SR 167	-\$0.4	-\$1.2	-\$2.5	-\$0.1	-\$0.6	-\$1.7
All Facilities Total	-\$1.4	-\$4.4	-\$9.6	-\$0.5	-\$2.6	-\$6.9

Note: Revenue differences are shown in millions of dollars on an annual basis; differences are compared to a base case that does not have the low-income discount program.

Implications of Changes In Net Revenue

Prior to 2019 ETL toll revenues were committed only to fund continued toll operations in the corridor. However, in 2019 the Legislature provided authority to issue bonds, and current law allows issuance of up to \$1.178 billion in bonds to fund improvements in the I-405/SR 167 corridor. Since then the COVID-19 pandemic reduced current and future I-405/SR 167 revenue forecasts considerably. As a result, in 2021 the Legislature directed WSDOT to identify the extent of the funding gap and options for altering program schedules and/or finding additional non-toll revenues. Reports on this analysis are due by the end of 2021. Projections of reduced net revenue have potential to widen the funding gap depending on how the discount program options are funded and implemented.

5

Findings and Recommendations



Consistent with the direction provided by the Legislature, this study made significant progress in identifying options, challenges, and considerations for a possible I-405/SR 167 express toll lanes (ETLs) low-income toll discount program. This progress is captured by the study findings identified in this chapter, which provide a foundation for the recommendations that follow.

While this study provides a strong foundation, more work is needed to fully assess and identify the detailed parameters of a low-income toll program to ensure it is both sustainable and effective. In conducting this study, the following challenges became apparent:

- ▶ Lack of truly comparable programs across the United States
- ▶ Incomplete understanding of the needs of potential program participants for such a program
- ▶ Uncertainties in determining future costs of a program, and the impact such a program may carry on facility performance, when considering the ongoing impacts of the COVID-19 pandemic.

Findings

Equity is a defining issue of this generation with many current efforts underway that assess the relationship of transportation and equity, and the related impacts. While findings of this study may support a broader discussion on transportation equity, and more narrowly the application of low-income discounts for other tolled facilities, the study was limited in its budget and scope to addressing the specific question of whether low-income toll discounts on the I-405/SR 167 ETLs are feasible and identifying the likely benefits and impacts of specific implementation options.

Key Finding: Low-Income Toll Discounts could Expand Transportation Access in the I-405 / SR 167 Corridor

While expanding access to the benefits of ETLs is limited in addressing bigger equity challenges, it can still be valuable to making the lives of individuals with low incomes easier. The existing ETLs already provide significant value to drivers of the corridor by providing a travel choice alternative that allows them to make a predictable and quicker trip. This program would help drivers with low incomes who use the corridor realize more of this benefit.

Key Finding: Drivers with Low Incomes have Diverse Travel Circumstances and Barriers to Program Access

This study's assessment shows that drivers with low incomes have diverse circumstances when it comes to how and when they use the corridor, including their origin and destination, trip purpose, and the time of day of their travel. While such diverse needs exist, study findings indicate drivers with low incomes currently tend to disproportionately use the ETLs in peak times.

There is also a diversity of barriers when it comes to participating in low-income programs. Meeting the varied needs of individuals with low incomes includes reducing the cultural, physical, and financial barriers to accessing the program.

Key Finding: Efficiencies can be Gained by Using Existing Eligibility Verification Systems

The most cost effective and value-added approach for implementing a new low-income toll discount program verification system is to use existing Department of Social and Health Services (DSHS) Benefit Verification System (BVS)—an online system free to use by partnering entities – and DSHS’s existing eligibility standards for enrollment in low-income programs.

- ▶ Under current DSHS low-income programs, the eligibility standard is approximately 200% of the Federal Poverty Level. This standard would also be appropriate for use in determining eligibility for a low-income toll program.

Key Finding: Both Selected Discount Options Provide Similar Benefits to Potential Program Participants, and to the State, with Assessment of which Provides More Value Not Conclusive

The two discount program options selected each provide for some level of free use of the lanes. The two selected program options are:

- ▶ **Fixed Number of Free Toll Trips:** program participants receive 10 free ETL toll trips per month, or
- ▶ **Fixed Toll Credits:** Program participants receive a monthly toll credit equal to the 100% of the toll usage of the average ETL customer – assessed at \$48 in toll credits per month.

The assessment of which option provides the most benefit to potential program participants was not conclusive. However, there are indeed some known benefits:

- ▶ **Ease of use:** they are similarly simple to understand and use for program participants, and are easy to administer
- ▶ **Minimal cost and performance impacts:** both options are estimated to have minimal impacts on the overall performance of the ETLs and have low operations costs
- ▶ **Transferable:** Both options could be expanded for use on other tolled facilities, pending further assessment of cost, revenue, and performance impacts

Both selected options also include the assumption that the standard program elements for enrollment and engagement identified in Chapter 3 would be a part of their structure.

Key Finding: Continued Work Needed on Assessing Costs, and Expanding Community Engagement Before Program Implementation

Preliminary costs are similar for each of the two options, but further analysis is needed to identify implementation details, refine policy choices, and engage Washington State Department of Transportation (WSDOT)’s new toll system vendor in exploration of system development costs. Engagement with potential program participants is also needed to clarify how the discount programs would likely be used and understand what approach provides the greatest value.

WSDOT’s tolling back-office system implemented in July 2021 includes capacity for a variety of discount toll options, such as participants paying a percentage of each toll, but functionality to provide a monthly bank of free trips or toll credits was not considered. Cost estimates for adding the ability to implement either of the two discount options recommended below range from \$500,000 - \$1 million in one-time implementation costs, and a relatively longer development timeframe. Though there would be higher one-time implementation costs, there is not anticipated to be a significant difference in on-going annual operating costs.

Regarding community engagement with potential low income drivers was challenging during the pandemic, and more is needed to help understand potential program participants’ opinions, preferences, and likely usage patterns to help refine the program implementation. This includes conducting further research to define implementation details and to refine policy choices such number of free trips or amount of credit per month. Further detailed analysis is needed to fully flesh out long-term corridor financial requirements, plans and timeline for corridor expansion, and sharpening projections for revenue and corridor performance in the future.

Recommendations

Based upon the research findings of this study, the recommendations arrived at support future implementation of a low-income tolling program, pending further research and analysis on the details described above, along with conducting further community engagement and outreach.

The eight recommendations below provide guidance on: (1) possible program components and policy choices, and (2) next steps to advance further development of a low-income toll discount program.

Recommendation 1: Develop a concept of operations for a low-income toll discount program

More work is needed to develop a detailed operational design and implementation plan. Such a plan will set forth the necessary program details, specific policies, technical system requirements, etc. that will then enable more precise analysis and estimation of the program costs and potential impact to toll revenues and performance, long-term.

Recommendation 2: Establish an implementation timeline that supports informed program selection and cost-effective approaches

Implementation of a low-income tolling program in the mid-2020s would provide time for effective program design, testing, and community engagement steps described in the study recommendations, as well as provide the time for legislative decision making.

Aiming for a mid-2020's implementation would also align closely with the opening of the I-405 ETLs between Renton and Bellevue, and expansion of the SR 167 ETLs to Puyallup anticipated to occur in 2024. As possible, coordination of traffic and revenue analysis and policy decisions in support of program design and implementation, and the analysis and policy decisions necessary for opening the facilities, would be a cost-effective approach that informs both processes and potentially reduces development time.

Recommendation 3: Advance the two selected program options as preferred options for further assessment

Both recommended program options should be moved forward as preferred options for further assessment. This is based primarily on three factors:

- ▶ Both selected options are feasible to implement;
- ▶ Both selected options provide strong benefits to potential program participants with a diverse set of travel circumstances and program access needs; and
- ▶ Both selected options did not demonstrate significant differences between the implementation challenges, operational costs, and the cost of foregone toll revenue.

As noted in the findings, the assessment of which option provides the most benefit to potential program participants was not conclusive. Further analysis and community engagement

could further inform the selection of a final option for implementation. The additional analysis should seek to validate study assumptions, inputs, and findings, based upon updated information, along with considering the additional information gathered from the expanded community engagement.

Additional considerations for implementation of a low-income discount toll program:

- ▶ **Financial Constraints:** Current law financial commitments assume that toll revenues will be sufficient to back issuance of over \$1 billion in bonds to fund corridor improvements. Recent forecasts that factor in the impact of the COVID pandemic no longer project toll revenues sufficient to fund the current law construction program. Any potential low-income toll discount program option could exacerbate the funding gap depending on how a low-income discount program is funded.
- ▶ **System Development:** The two recommended program options will require additional tolling back office adjustments and development time to implement.
- ▶ **Facility Performance Requirements:** Implementation of a low-income discount toll program will likely put additional pressure on meeting existing I-405 ETL performance requirements during the peak periods.
- ▶ **Benefits for Program Participants:** Assumed benefits for program participants are subject to future policy decisions and should be part of the further assessment. This includes the following:
 - Value of each option to the consumer (trips / credit per month): Adjustments may be necessary for implementation based on funding levels and/or input from further community outreach and assessment.
 - The study assumes that if a driver travels the entire ETL corridor, which is currently made up of two segments, that would count as two toll transactions, so in other words, two free trips would be deducted. However, if decided that a customer's complete trip through the corridor counts as one toll transaction, the revenue impact of providing free trips would be larger. The choice on how to define a toll transaction should consider ease of use for the driver, and ease of operations for WSDOT.

Recommendation 4: Engage potential program participants to inform the program design process

While this study attempted to gather early insights from impacted low-income communities, via two surveys of potential program participants, with the results being very valuable to gaining early insights that informed the findings and recommendations, further and continued outreach and input gathering is needed to advance a low-income toll program.

This should include establishment of an advisory panel. The panel would provide key input during the program design and selection phase, and would remain in place and provide long-term, periodic input on the program after it is implemented. The advisory panel should include potential participants of the program during the design phase and current program participants once implemented. The panel should be diverse with regard to race, geography of residence, age, and gender. Upon program implementation, the advisory panel should report out at least annually to the Washington State Transportation Commission (WSTC).

Additional and ongoing outreach to impacted drivers is valuable for at least four reasons:

1. to help the eventual program participants feel more engaged in the process;
2. to allow the implementing agencies to learn from the program participants who understand their own lives and needs best;
3. to answer questions that could not be reliably studied through an online survey, including the question of what method of enrollment (such as online, in-person, or via the phone) works best for what shares of eventual program participants; and
4. to lay the groundwork for encouraging program enrollment once the pilot is launched – this may include promotion at DSHS offices when individuals sign up to receive new services, or mailers sent to all DSHS clients (which should include the DSHS client number to make the enrollment process easier for the low-income toll program), but other promotion ideas are sure to arise from the outreach processes.

Recommendation 5: Implement a low-income toll discount program as a pilot initially, to test and gain further learnings

Along with a public engagement program, a pilot program could be useful to inform development of the concept of operations and to gain a better understanding of how potential program participants would use different program options. This will lead to better-informed selection of program options, benefit levels, needed toll system changes, and potential impacts to traffic, revenue, and system performance.

Planning for the pilot program must start early in the program design process to ensure adequate time for testing. Design and implementation of any pilot program should be informed through engagement with the program advisory panel and other outreach.

Evaluation of the pilot program should be driven by performance metrics, coordinated through the program advisory panel. Evaluations and metrics could determine the effectiveness of enrollment approaches, and use of the benefits. It could also be deliberate about measuring diversity and inclusion concerning geography, age, race, and ethnicity.

Recommendation 6: Use existing programs to support cost-effective program enrollment

Use of existing DSHS' eligibility verification system and eligibility criteria used for other social services, would enable significant cost-savings for program implementation and operations.

- ▶ Use of DSHS's Benefit Verification System (BVS), an online system free for use by partnering entities, provides the most cost-effective approach for defining and assessing low-income toll discount program eligibility.
- ▶ Use of eligibility criteria in place for Washington State residents who receive social services from DSHS would further limit costs for defining and assessing low-income toll discount program eligibility. This includes an income eligibility threshold of 200% of the Federal Poverty Level (FPL), a threshold that is also commonly used in low-income discount and benefit programs around the country.

Recommendation 7: Establish core program elements that support and enable participant access

Core program elements should include the following:

- ▶ Provide a free *Good To Go!* Flex Pass to program participants and do not require a minimum balance be kept nor a credit or debit card be linked to an account.
- ▶ Consistent with existing WSDOT capabilities, provide program information for public use in all primary languages for the region, with live translation available for other languages used in region, and using language that is judgement free.
- ▶ Show program information in visual formats as much as possible.
- ▶ Create an enrollment process (physical and remote) that is accommodating for participants with disabilities, and implemented using staff who have received equity training.
- ▶ Make program enrollment broadly geographically accessible to keep time cost of enrollment low for potential program participants needing in-person services.

Additional considerations for implementation of a low-income discount toll program:

- ▶ A variety of approaches to reduce barriers for customers who rely on cash payments should be evaluated in continued work and community outreach. Based on research for this study on financial access in Washington State, it is reasonable to assume that many potential program participants would rely on cash payment options, and that a significant portion would also have no checking or savings account.^{9 10} Given this, requiring a debit or credit card to participate in the program is likely to be a critical barrier to accessing and gaining benefits from a low-income tolling discount program.

Recommendation 8: Assess costs and benefits of expanding to all tolled facilities

This study only addressed low-income discount options for the I-405/ SR 167 ETLs, but offering such a program on one tolled facility but not the others may create fairness and geographic equity issues amongst the drivers of the different facilities. While each facility has unique operational realities and financial requirements that would need to be assessed and satisfied, consistent with WSTC efforts to develop system-wide tolling policies, an element of the concept of operations proposed in Recommendation 1 should identify and explore the challenges and opportunities of extending a low-income toll discount program to other tolled facilities, and assess whether implementation recommendations developed for the ETLs would change if applied systemwide.

⁹ Bank On Washington, <https://bankonwashington.org/>

¹⁰ Office of Financial Management, "Comparing Standards of Economic Distress", Deb Came and Erica Gardner, 2007, https://www.ofm.wa.gov/sites/default/files/public/legacy/humanserv/poverty/economic_distress.pdf



Endnotes

- 1 "Toll Relief", VDOT, 2018, https://www.fhwa.dot.gov/ipd/pdfs/tolling_and_pricing/resources/webinars/guidebook_and_toolkit_ej_webinar_040818.pdf
- 2 During the pandemic, this operator also offered 50% toll discounts to essential workers while a shelter-in-place order was in action in Dallas.
- 3 The research for the programs discussed in this section was supplemented by interviews with staff from the agencies.
- 4 The research for LA Metro's and SRTA's programs was supplemented by interviews conducted with staff at both agencies for this study.
- 5 In this case, net revenue refers to the toll revenues collected minus expenditures on roadway maintenance, express lanes operations, toll collection, and in some cases debt service, enforcement and marketing. Especially in the early years of operations for an express lanes corridor, it is possible for corridors to generate no net revenues, as the cost of maintenance and operations is greater than the toll revenues received.
- 6 SRTA makes attempts to later convert cash-account users to credit card accounts. The latter type of account has benefits: it allows the use of HOV discounts and is inter-operable with neighboring states' toll systems. The conversion can be done by mail.
- 7 "HR-White Salmon Bridge: Tolls to resume May 1 as port readies 'Pay-By-Plate', Breeze-By signups encouraged", *Emily Fitzgerald, Hood River News, 2020*, https://www.hoodrivernews.com/news/hr-white-salmon-bridge-tolls-to-resume-may-1-as-port-readies-pay-by/article_fbe6d468-897e-11ea-a27e-33a3cb39696c.html
- 8 The research for this section was supplemented by interviews conducted for this study with staff at DSHS, King County Metro, and WSDOT.
- 9 Notably, during the pandemic, ORCA LIFT usage was down substantially less than transit ridership overall, likely due to low-income essential workers' use of the program.
- 10 Seattle City Light already operates a low-income program. The Seattle City Light Utility Discount Program, through which households earning less than 70% of the state median income (approximately \$52,000, or approximately 200% of the FPL for a household of four) are eligible for discounts of 50%-60% on power and utilities. Eligibility is handled by the Seattle Human Services Department.
- 11 Washington State Ferries currently provides discounts to frequent riders, seniors, and disabled riders. Two key features of this program are that it is deliberately named, promoted, and discussed to lessen any sense of shame that users are receiving low-income assistance, and that users who are known to qualify (because of their public housing status) are opted in, being sent a letter that allows them to opt out of the program. This automatic enrollment makes up half of the program's users, and the agency estimates that it reaches approximately half of all eligible users (34,000 of 70,000-80,000). Separately, the agency also runs the Emergency Low Income Assistance program, which provides credits to users with low incomes (those below 80% of state median income) who are at risk of having their power shut off.
- 12 "Vehicle License Fee Rebate", Seattle Department of Transportation, <https://www.seattle.gov/transportation/projects-and-programs/programs/transit-program/vehicle-license-fee-rebate>
- 13 "Federal Poverty Level (FPL)", HealthCare.gov, <https://www.healthcare.gov/glossary/federal-poverty-level-fpl/>
- 14 "ALICE in Washington: A Financial Hardship Study", United Way, 2020, <https://www.unitedforalice.org/washington>
- 15 As defined in detail in the annual ALICE report: "The ALICE Household Survival Budget is an estimate of the minimal total cost of household essentials – housing,
- 16 "Frequently Asked Questions Related to the Poverty Guidelines and Poverty", U.S. Department of Health & Human Services, <https://aspe.hhs.gov/frequently-asked-questions-related-poverty-guidelines-and-poverty>
- 17 "Food Prices and Spending", United States Department of Agriculture, <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-prices-and-spending>
- 18 The study can be found at <http://depts.washington.edu/trac/bulkdisk/pdf/I-405ExpressTollLanesDSSGEquityFinal.pdf>
- 19 The research on this study was supplemented by an interview with one of the authors, Mark Hallenbeck.
- 20 The report can be found at https://www.transformca.org/sites/default/files/Pricing_Roads_Advancing_Equity_Combined_FINAL_190314.pdf
- 21 The report can be found at <http://www.trb.org/Main/Blurbs/177062.aspx>
- 22 The report can be found at https://www.fhwa.dot.gov/environment/environmental_justice/publications/tpp/index.cfm
- 23 The report can be found at <https://ops.fhwa.dot.gov/publications/fhwahop13033/fhwahop13033.pdf>; further
- 24 The report can be found at <http://www.trb.org/Main/Blurbs/180936.aspx>

