Benefits of Program Acceleration

September 2018

Prepared by:

Washington State Department of Transportation Puget Sound Gateway Program





Title VI Statement to Public: WSDOT ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For additional information regarding WSDOT's Title VI Program, contact the Department's Title VI Coordinator at 360-705-7098.

Americans with Disabilities Act (ADA) Information: This material can be made available in an alternate format by emailing the Office of Equal Opportunity at wsdotada@wsdot.wa.gov or by calling toll free, 855-362-4ADA (4232). Persons who are deaf or hard of hearing may make a request by calling the Washington State Relay at 711.



Table of Contents

| Executive Summary | 1 |
|---|----|
| Introduction | 4 |
| Program Description | 5 |
| SR 509 Completion Project | 5 |
| SR 167 Corridor Completion Project | 6 |
| Context for Assessing Program Acceleration Benefits | 7 |
| Sources of Program Funds | 9 |
| Legislative Schedule for Funding | |
| Types of Funding | |
| Connecting Washington State Funding | |
| Local Funding and Grants (Connecting Washington) | 10 |
| Infrastructure for Rebuilding America (INFRA) Grant Program | |
| Toll Funding | 12 |
| Funding Constraints and Opportunities | 15 |
| Connecting Washington State Funding Assumptions | 15 |
| Local Funding and Grant Assumptions | 15 |
| Toll Funding Assumptions | 16 |
| Uses of Program Funds | 16 |
| Capital Cost Estimates | |
| Inflation Indices | |
| Funding Constrained Baseline | |
| Construction Schedule Notes — Funding Constrained Baseline | |
| Funding Notes — Funding Constrained Baseline | |
| | |
| Program Acceleration Benefits | |
| Construction Acceleration Cases | |
| Case 1 Modest Acceleration | |
| Construction Schedule Notes — Case 1 Modest Acceleration | |
| Funding Notes — Case 1 Modest Acceleration | |
| Case 2 Medium Acceleration | |
| Construction Schedule Notes — Case 2 Medium Acceleration | |
| Funding Notes — Case 2 Medium Acceleration | |
| Case 3 Maximum Acceleration | |
| Construction Schedule Notes — Case 3 Maximum Acceleration | |
| Funding Notes — Case 3 Maximum Acceleration | |
| Financing and Delivery Options | |
| Advancing State Funds | |
| Public-Private Partnerships | |
| Combined Contracts | |
| Legislative Considerations | 34 |



| Benefits of Earlier Program Delivery | 35 |
|--|-----------|
| Quantifiable Transportation Economic Benefits | 35 |
| Quantifiable Financial Benefits | 35 |
| Other Local and Sub Regional Benefits | 36 |
| Annendix A: Program Acceleration Considerations and Benefits | Matrix 40 |

List of Exhibits

| Exhibit 1: Gateway Program Summary Schedule (Funding Constrained Baseline) | 4 |
|--|------|
| Exhibit 2: SR 509 Completion Project Map | 5 |
| Exhibit 3: SR 167 Completion Project Map | 7 |
| Exhibit 4: Gateway Program Funding Sources | 9 |
| Exhibit 5: Gateway Program Funding Schedule | . 10 |
| Exhibit 6: Summary of Local Funding Sources | . 11 |
| Exhibit 7: Toll Rate Schedule for Base Condition Modeling in 2025 (FY 2026) Dollars | . 13 |
| Exhibit 8: Potential Gross and Net Toll Revenue projections Base Condition Tolls a | and |
| Funding Constrained Baseline Schedule | . 14 |
| Exhibit 9: WSDOT June 2018 and December 2016 Cost Inflation Indices | . 17 |
| Exhibit 10: WSDOT June 2018 and December 2016 Cost Inflation Rates of Change | . 18 |
| Exhibit 11: Gateway Program Uses of Funds for the Funding Constrained Baseline | . 19 |
| Exhibit 12: Funding Constrained Baseline Sources and Uses of Funds | . 21 |
| Exhibit 13: Construction Acceleration Case Timelines and Program Costs | . 22 |
| Exhibit 14: Construction Expenditures by Schedule Acceleration Cases | . 23 |
| Exhibit 15: Case 1 — Modest Acceleration Sources and Uses of Funds | . 25 |
| Exhibit 16: Case 2 — Medium Acceleration Sources and Uses of Funds | . 27 |
| Exhibit 17: Case 3 — Maximum Acceleration Sources and Uses of Funds | . 29 |
| Exhibit 18: Spectrum of Public-Private Partnership Alternative Delivery Models | . 32 |
| Exhibit 19: Legislative Consideration Timelines by Program Acceleration Case | . 34 |
| Exhibit 20: Benefits by Program Acceleration Case | . 36 |
| Exhibit 21: Local Impacts by Community / Stakeholder from Stage 2 Acceleration | .38 |



Executive Summary

Puget Sound Gateway Program

Benefits of Program Acceleration

Background

In July 2015, the Washington State Legislature and Governor Inslee acted to fund the Puget Sound Gateway Program through the Connecting Washington Account. The Puget Sound Gateway Program completes two freight routes in Washington: State Route 167 in Pierce County and State Route 509 in King County. These projects provide essential connections to the ports of Tacoma and Seattle and will help ensure people and goods move more reliably through the Puget Sound region.

Funding for the total Puget Sound Gateway Program will come from the state gas tax, tolls, local contributions, and potential federal grants. Total funding for the project is \$1.88 billion; \$1.57 billion will come from the Connecting Washington Account, tolling will contribute \$180 million, and local contributions and grants will total \$130 million. WSDOT is also seeking federal grants.

Legislative Directive

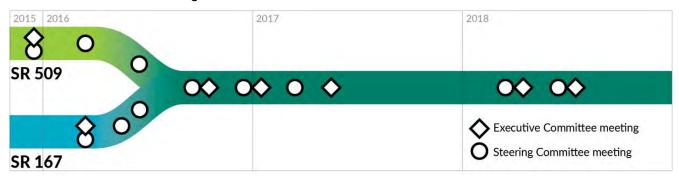
In the 2017 Legislative session Engrossed Senate Bill 5096 Section 306 directed that WSDOT develop of a Memorandum of Understanding (MOU) with local agency partners. As part of that direction the following direction was also stated:

[(20)(c)] During the course of developing the memorandum of understanding, the department must evaluate the project schedules to determine if there are any benefits to be gained by moving the project schedule forward.



Schedule Acceleration Process

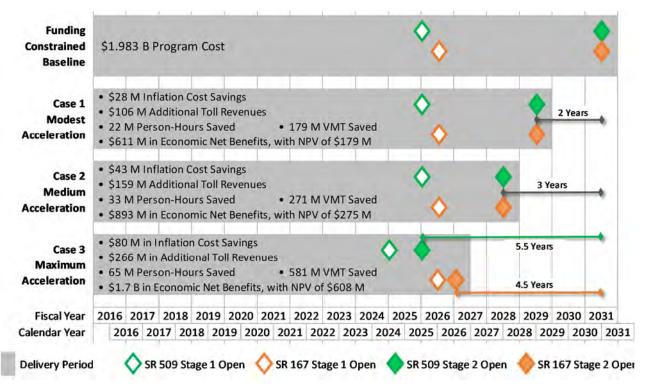
Collaboration with affected stakeholders began in 2015 through the joining of the SR 167 and SR 509 Executive and Steering Committees. Since then, the Joint Executive Committee and the Joint Steering Committee have met five times each. In July 2018, the Executive Committee reviewed the benefits and schedule acceleration findings.





Schedule Acceleration Summary

The chart below shows the summary of cost savings, economic benefits, and schedule advancement associated with three acceleration cases.



Funding Considerations

This report examines opportunities to, and mechanisms for accelerating the program schedule for three representative cases. Financing and delivery options included consideration of the following.

Advancing Tolling

Future toll revenues are assumed to repay bonds used to finance a portion of the capital costs. Cases 1, 2 and 3 assume that the toll financing from toll revenues could be advanced along with project delivery. Toll authorization and bond authorization would be needed from the Legislature. Advancing toll financing would help to facilitate earlier toll collections, earlier project completion, and reduced project costs.

Advancing State Funds

Case 2 and 3 assume that some Connecting Washington funds can be advanced. While the Legislature could advance these funds, this approach may not be feasible as it may impact other Connecting Washington funded projects.

Other options for advancing the Connecting Washington funds could involve short-term financing or a loan with legislative approval. Case 2 requires the Legislature to advance \$129 million in state funding from FY 2028 to FY 2025, but it also leaves \$20 million unused to be reallocated in FY 2030. Similarly, Case 3 requires that \$347 million be advanced from FYs 2026-29 to FYs 2023-25, and leaves \$69 million unused to be reallocated in FY 2028 and an additional \$20 million unused in FY 2030. Unused funds in later years could be used to help finance the advancement of earlier state funds.



Public-Private Partnerships

A Public-Private Partnership (P3) may also provide opportunities to deliver the Program faster, including advancing the Connecting Washington state funding. P3s comprise a spectrum of project delivery methods in the form of contractual agreements between a public agency (the owner) and a private entity (the private partner) that allow for greater private sector participation in the delivery and operation of projects. The Benefits of Program Acceleration Report provides a comprehensive overview of potential P3 options. However, current legislation restricts privately arranged financing for highway projects and may limit private sector interest.

For More Information

www.wsdot.wa.gov/projects/gateway

Amy Danberg
Puget Sound Gateway Program
Communications
danbera@consultant.wsdot.wa.gov
206-462-6356

Title VI Statement to Public: WSDOT ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For additional information regarding WSDOT's Title VI Program, contact the Department's Title VI Coordinator at 360-705-7098.

Americans with Disabilities Act (ADA) Information: This material can be made available in an alternate format by emailing the Office of Equal Opportunity at wsdotada@wsdot.wa.gov or by calling toll free, 855-362-4ADA (4232). Persons who are deaf or hard of hearing may make a request by calling the Washington State Relay at 711.

Appendix A includes a matrix that summarizes all of the program acceleration considerations along with the schedule, financial, and economic benefits for each representative acceleration case.



Introduction

In 2015, the Washington State Legislature passed the Connecting Washington Transportation Funding Package, primarily based on a new 11.9 cent gas tax. Via the Connecting Washington Account (CWA), the package commits \$16 billion in investments to enhance the statewide transportation system and maintain critical infrastructure, including \$1.88 billion for the Puget Sound Gateway Program (Gateway Program), comprising the State Route (SR) 509 Completion Project and the SR 167 Completion Project. In addition to providing funding, the Legislature requires that the Washington State Department of Transportation (WSDOT) implement the two completion projects as a "single corridor investment."

In the 2017 Legislative session, Engrossed Senate Bill 5096 Section 306(20)(c) directed WSDOT to develop a Memorandum of Understanding (MOU) among local agency partners for funding the \$130 million previously identified in the 2015 Connecting Washington legislation as coming from local sources. In addition, this legislative budget proviso asked WSDOT to analyze benefits of advancing the program's funding-driven schedule. Engrossed Senate Bill 5096 states that:

During the course of developing the memorandum of understanding, the department must evaluate the project schedules to determine if there are any benefits to be gained by moving the project schedule forward.

The Gateway Program team established a Funding Constrained Baseline program construction schedule that is aligned with the 16-year delivery of the program funding established in the CWA. This *Benefits of Program Acceleration* report examines opportunities to, and mechanisms for accelerating the program schedule, presented as three different representative cases. Additionally, these program acceleration cases are evaluated to assess their potential financial and economic benefits, in comparison to the Funding Constrained Baseline.

Exhibit 1 summarizes the program's implementation schedule by activity over the eight biennia (16 years) in accordance with phased allocation of Connecting Washington funds as determined by the Legislature.

BIENNIUM

2015-2017 2017-2019 2019-2021 2021-2023 2023-2025 2025-2027 2027-2029 2029-2031

PRELIMINARY ENGINEERING

CONSTRUCTION

EXHIBIT 1: GATEWAY PROGRAM SUMMARY SCHEDULE (FUNDING CONSTRAINED BASELINE)

RIGHT-OF-WAY



Program Description

The Gateway Program consists of the SR 509 Completion Project and the SR 167 Completion Project. The following summarizes the scope of funded improvements for each project, collectively referred to as Phase 1, which is split into Stages 1 and 2. Additional detailed information about each project's scope elements, construction stages, and delivery methods can be found in a companion document, the *Puget Sound Gateway Program: Construction and Implementation Plan*, dated September 2018.

SR 509 Completion Project

The SR 509 Completion Project is located in King County in the cities of Des Moines, Kent and SeaTac. The current project footprint remains mostly within the limits of the preferred build alternative documented in the 2003 FEIS. The NEPA re-evaluation was completed in January 2018.

The funded improvements will extend the existing SR 509 freeway southeasterly from its current South 188th Street terminus to I-5 and will add capacity to I-5 south of the SR 509 connection. The extension of SR 509 will be a new four-lane section (two lanes in each direction), from South 188th Street to I-5. The SR 509 Completion Project is proposed as a fully tolled facility based on legislative direction.

Exhibit 2 provides an overview map of the highway elements of the project, identified as Stage 1b and Stage 2.

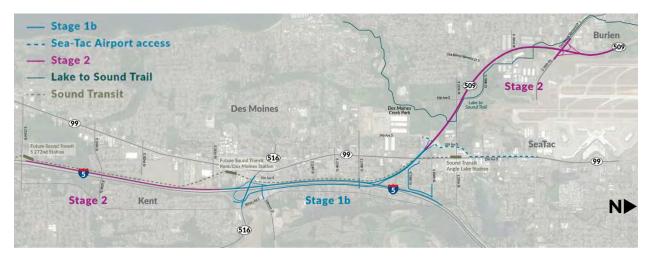


EXHIBIT 2: SR 509 COMPLETION PROJECT MAP

Not shown in Exhibit 2 are the Stage 1a elements built in partnership with Sound Transit. Stage 1a includes a new SR 99 bridge over SR 509 and retaining walls along I-5, separating the new southbound collector/distributor lanes from the guideway for the Sound Transit Federal Way Link Extension project.

Stage 1b builds two lanes in each direction between 28th / 24th Avenues South and the connection to I-5; constructs a new northbound I-5 auxiliary lane and two southbound I-5 collector / distributor lanes running parallel to and reconnecting with I-5 just north of SR



516; reconstructs the South 216th Street Bridge overcrossing; and reconstructs the SR 516 interchange including the connection to Veterans Drive.

In addition, a new interchange will be constructed to connect SR 509 with 28th / 24th Avenues South. This half-diamond interchange to the south will serve as a new connection to the Sound Transit Angle Lake light rail station, Lake to Sound Trailhead, Des Moines Creek Business Park and Seattle-Tacoma International Airport (Sea-Tac Airport). The partnership with Sound Transit also includes retaining walls along I-5 between the Link guideway and new I-5 southbound collector/distributor lanes.

In Stage 2, WSDOT will build two lanes in each direction between 28th / 24th Avenues South and South 188th Street, and reconstruct the existing SR 509 / South 188th Street interchange into a folded full-diamond interchange on the north side of South 188th Street.

At the other end of the project, a southbound auxiliary lane of I-5 will be constructed between the I-5 / SR 516 interchange and South 272nd Street.

SR 167 Corridor Completion Project

The SR 167 Completion Project is located in Pierce County in the cities of Puyallup, Fife, Milton, Edgewood, Tacoma and portions of unincorporated Pierce County. In addition, the majority of the project falls within the Puyallup Tribe of Indians (PTOI) reservation boundary. The current project footprint remains mostly within the limits of the preferred build alternative documented in the 2006 NEPA FEIS.

Stage 1 of the funded improvements builds approximately two miles of new four lane highway from SR 509 near the Port of Tacoma to a new interchange with I-5 near 70th Avenue crossing. The operational part of Stage 1 is referred to herein as the Port of Tacoma Spur due to the connection it creates between the Port of Tacoma and I-5.

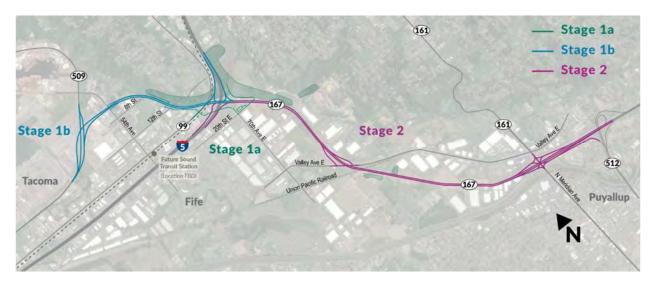
Stage 2 of the funded improvements will extend the existing SR 167 highway by building approximately four miles of new, four-lane limited-access highway from the current terminus in Puyallup at SR 161, through the Puyallup River valley on the north side of the river, and connecting to Interstate 5 at the new interchange near the 70th Avenue crossing.

The SR 167 Completion Project is proposed as a fully tolled facility based on legislative direction. The Port of Tacoma spur section west of I-5 and the main new SR 167 section east of I-5 are proposed to be tolled separately.

Exhibit 3 provides an overview map of the project, including Stage 1 and Stage 2 as well as the subdivision of Stage 1 into parts 1a and 1b.



EXHIBIT 3: SR 167 COMPLETION PROJECT MAP



SR 167 will connect to I-5 with a new diverging diamond interchange (DDI) with ramps to/from the north and south. WSDOT will reconstruct the 70th Street crossing to the west of the current location to make room for the new I-5/SR 167 DDI.

The new limited-access freeway segments of SR 167 will have interchanges at SR 161 (Meridian), Valley Avenue, I-5, 54th Avenue East and SR 509. WSDOT will reconstruct the SR 161/Meridian interchange to allow for the new SR 167 to be built above a new full single point urban interchange (SPUI) at Meridian Avenue. The new half-diamond interchange at Valley Avenue will include ramps to/from the west. West of I-5, a new half-SPUI with ramps to/from the east will be constructed at 54th Avenue E.

The SR 167 Completion Project also includes wetland mitigation and a riparian restoration program (RRP) for Hylebos Creek, Surprise Lake Tributary and Wapato Creek.

Context for Assessing Program Acceleration Benefits

The Funding Constrained Baseline construction schedule was established to align the expenditures (uses of funds) with the sources of funds made available by the Legislature under the Connecting Washington package. The estimated construction expenditures are based on the latest WSDOT projected inflation indices from June 2018, which have increased the total program cost by nearly \$100 million to \$1.983 billion.

When matched up against \$1.876 billion in funding identified by the Connecting Washington funding programmed by the Legislature over 16 years, plus an additional \$6 million in other state funds provided in the 2015-17 biennium, the total identified funding of \$1.882 billion current falls \$102 million short of the Funding Constrained Baseline expenditure plan. This \$102 million funding gap was placed in the final year of the schedule, fiscal year (FY) 2031, so that the annual sources and uses of funds were matched in all preceding years.



The current assumption is that the \$102 million funding gap would be filled by federal funding coming from one or more awards from a national competitive federal grant program prior to or in FY 2031. Because the current assumptions for \$130 million in local partner funding also includes \$20 million from national program federal grant sources, the total level of federal grants needed to fully fund the program under the Funding Constrained Baseline schedule is \$122 million.

The three representative Stage 2 program acceleration cases — modest, medium and maximum acceleration — presented within this *Benefits of Program Acceleration* report serve to illustrate the following:

- Advancing program funding to earlier points in time, explaining the assumptions and potential mechanisms for achieving funding earlier;
- Assessing how construction costs would be reduced due to inflation savings from program acceleration; and
- Closing the remaining funding gap based upon assumptions of the amount and timing for federal funds.

In addition to the financial benefits of construction cost inflation savings, each of the three acceleration cases are also evaluated for the dollar value of the incremental economic benefits of program acceleration, which are capitalized from the earlier realization of the program's projected person-hours of time savings and reductions in vehicle miles traveled.

The rest of this report is organized around the following sections that build upon the Funding Constrained base line and the three representative cases with increasing levels of program acceleration:

- Sources of Program Funds;
- Uses of Program Funds; and
- Program Acceleration Benefits.



Sources of Program Funds

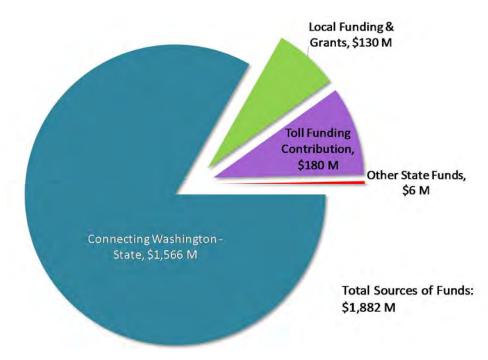
Legislative Schedule for Funding

In 2015, the Washington State Legislature passed the Connecting Washington Transportation Funding Package, primarily based on a new 11.9 cent gas tax. The package commits \$16 billion in investments to enhance the statewide transportation system as well as maintain and preserve critical infrastructure.

The Gateway Program received the largest share of this package of any project at nearly \$1.88 billion distributed over 16 years through fiscal year (FY) 2031, with the Legislature budgeting the funds as \$1.57 billion in state funds, \$180 million from tolling, and \$130 million in local contributions. In addition, \$6 million in early state funding was provided in the 2015-17 Biennium, the majority of which was allocated for preliminary engineering. Receiving the funding over such a long period poses challenges for program delivery and creates opportunities to look for ways to accelerate program funding and reap the benefits of earlier delivery, provided this can be done without adversely impacting the delivery of other Connecting Washington projects.

Exhibit 4 illustrates the relative shares of Gateway Program funding by type. Exhibit 5 shows how the Legislature programmed the funding by each biennium, as reflected in their 2017 budget and a subsequently approved transfer to advance \$40 million of funds for right-of-way purchases from the 2019-21 biennium to the 2017-19 biennium. This transfer was the result of slower than expected expenditures on other Connecting Washington projects.

EXHIBIT 4: GATEWAY PROGRAM FUNDING SOURCES





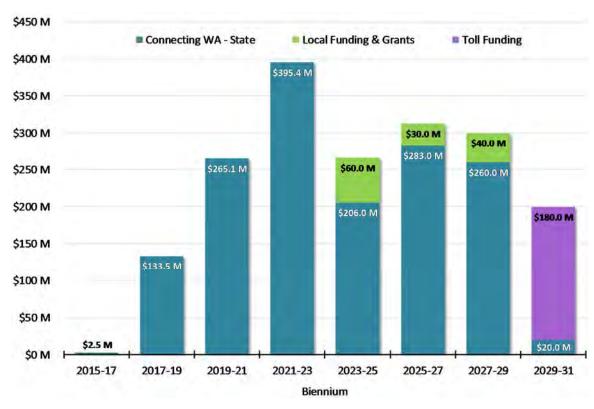


EXHIBIT 5: GATEWAY PROGRAM FUNDING SCHEDULE

Note: The \$6 M in other state funds from the 2015-17 biennium is not shown above.

Types of Funding

Connecting Washington State Funding

The Connecting Washington Transportation Funding Package committed \$1.57 billion in state funding for the Gateway Program. The source of these funds is a combination of motor vehicle fuel tax revenue and bond proceeds that leverage future motor vehicle fuel tax revenues.

Local Funding and Grants (Connecting Washington)

In developing the Connecting Washington Transportation Funding Package, the Legislature directed local cities, counties and ports to collectively raise \$130 million toward the Gateway Program construction. The local funding strategy employs a combination of partner contributions and third-party grants to achieve the \$130 million target. A Local Funding Memorandum of Understanding, submitted to the Legislature in June 2018, was developed in consultation with partner agencies and commits them to \$74.1 million in direct contributions. Partner contributions will be used as the local match to leverage state and federal grants from various programs available for funding transportation projects to yield the total \$130 million local contribution.



The Gateway Program was separated into several specific "local nexus" projects so as to best pair them with a local applicant and align them with the criteria of various grant sources. The first-round fundraising effort in 2018 consists of six grant requests. To-date, four of the 2018 grants have been successful, with \$14.4 million awarded or selected for award. They are:

- Interurban Trail (SR 167 Stage 1a), Direct Legislative Appropriation, \$1.4 million
- Veterans Drive Extension (SR 509 Stage 1b), Puget Sound Regional Council, regional federal funds competition, \$4.0 million
- Port of Tacoma Spur, Puget Sound Regional Council, regional federal competitive, \$4.0 million
- 70th Avenue E., Washington State Freight Mobility Strategic Investment Board, statewide competition, \$5.0 million

The remaining 2018 application requests an additional \$5.0 million:

• 70th Avenue E., Washington State Transportation Improvement Board, statewide competitive for urban arterials, \$5 million

The successful awards in 2018 suggest that the Gateway local nexus projects are strong grant contenders. Future grant rounds will seek an additional \$10 million from state grant sources and \$6.5 million from PSRC regional federal grants for a total of \$35.9 million in state and regional federal grants.

The remaining balance of \$20 million is planned to come as a portion of a national federal grant from the USDOT Infrastructure for Rebuilding America (INFRA) or Better Utilizing Investments to Leverage Development (BUILD) funding programs or their successors.

EXHIBIT 6: SUMMARY OF LOCAL FUNDING SOURCES

| COMMITTED | | | | | | | | |
|----------------------------|---------------|--|--|--|--|--|--|--|
| Local Direct Contributions | \$74,100,000 | | | | | | | |
| State Grants | \$6,400,000 | | | | | | | |
| Regional Federal Grants | \$8,000,000 | | | | | | | |
| PLANNED | | | | | | | | |
| State Grants | \$15,000,000 | | | | | | | |
| Regional Federal Grants | \$6,500,000 | | | | | | | |
| National Federal Grant | \$20,000,000 | | | | | | | |
| TOTAL | \$130,000,000 | | | | | | | |



Infrastructure for Rebuilding America (INFRA) Grant Program

The federal INFRA grant program provides dedicated, discretionary funding for projects that address critical issues facing our nation's highways and bridges. The competitive program is administered by the USDOT in which applicants compete for funding based on the merits of each candidate project and how it scores under a half dozen selection criteria.

In late 2017, the Gateway Program applied for a \$111 million INFRA grant in the large project category. While not among the 20 large projects selected among 116 applicants, WSDOT learned during a recent debrief that the program scored very well and was among the shortlist that was put forward for final consideration by the USDOT Secretary.

The Gateway Program is expected to provide significant economic benefits from improving travel times, reliability, and safety, with a focus on freight and major regional system continuity by improving global sea and airport access. Given these attributes, the program is well positioned to compete for merit-based national federal grant programs such as INFRA and BUILD, and WSDOT is hopeful that the program will achieve some merit-based federal funding over the next four to six years.

The Gateway Program's preliminary financial plan assumes that INFRA or successor program for grant funding (potentially augmented with a BUILD or successor program grant) will be used to close any gap between the sum of the three Connecting Washington sources and the total program capital cost. For purposes of evaluating the options for and assessing the benefits of program acceleration, the program's financial plan tests various schedule acceleration cases in which one or more INFRA or equivalent grants ranging from \$98 to 130 million are awarded at different points in time. Multiple grant application attempts may be necessary to achieve these funding levels. It is also possible that these levels of federal grants may not materialize.

Toll Funding

The Connecting Washington funding package also included \$180 million in funding from tolls. In arriving at this number, the Legislature took direction from the 2013 Puget Sound Gateway Project Funding and Phasing Study, which examined the financial feasibility of tolling the SR 509 and SR 167 Completion Projects. Specifically, the 2013 study estimated toll traffic, gross toll revenues, and resulting net revenue projections after various deductions including toll and facility O&M costs. A 20% reduction was then taken off the net revenue projections as an allowance for potential uncertainty associated with the preliminary nature of the traffic and revenue projections, with the remaining 80% of net revenues determining the cash flow available to support project financing. Two types of financing were considered, state-backed bonds and stand-alone toll revenue bonds, the latter assuming that only tolls are pledged to repayment of the bonds with higher interest rate (6.25%) and debt service coverage (2.0x) assumptions, and thus lower bond proceeds. Estimated bond proceeds in the 2013 study totaled \$180 million from stand-alone toll revenue bonds when leveraging 80% of the net revenue projections.

The current Gateway Program analysis efforts include updated toll traffic and revenue projections which are preliminary and ongoing, but represent a refinement over the traffic



and revenue projections prepared for the 2013 study. These efforts are helping to ascertain the effects of different toll rates and policies, provide some initial information to begin discussions with the Washington State Transportation Commission (the state's toll rate setting authority), and confirm that tolling still has the capacity to yield \$180 million in project funding. A "Base Condition" toll scenario was defined in which time-of-day variable tolls would be charged on a fixed schedule, as shown in Exhibit 7 below. These Base Condition tolls, expressed in future year of collection (FY2025/FY 2026) dollars, are not assumed to escalate over time. If expressed in today's dollars, the equivalent tolls would be about 20% less.

EXHIBIT 7: TOLL RATE SCHEDULE FOR BASE CONDITION MODELING IN 2025 (FY 2026) DOLLARS

| | SR | 509 | SR | 167 | Port of Tacoma Spur | | |
|--------------------------|---------------|------------|---------------|-----------|-----------------------|--------|--|
| | Northbound | Southbound | Eastbound | Westbound | Eastbound Westbound | | |
| Morning Peak Period | \$2.40 \$1.20 | | \$1.80 | \$3.00 | \$0.90 | \$0.90 | |
| Midday | \$1.20 | \$1.20 | \$1.20 | \$1.20 | \$0.90 | \$0.90 | |
| Afternoon Peak Period | \$1.20 | \$2.40 | \$3.00 | \$1.80 | \$0.90 | \$0.90 | |
| Evening | \$1.20 \$1.20 | | \$1.20 | \$1.20 | \$0.90 | \$0.90 | |
| Night | \$1.20 \$1.20 | | \$1.20 \$1.20 | | \$0.90 \$0.90 | | |
| Range of Rates | \$1.20 | - 2.40 | \$1.20 | - 3.00 | \$0.90 (no variation) | | |

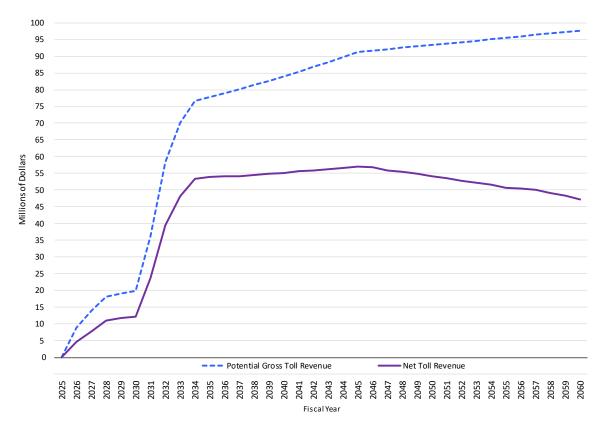
Note: Toll rates shown are for two-axle vehicles with a *Good To Go!* account. Vehicles without a *Good To Go!* account assumed to pay a \$2 higher toll. Vehicles with three or more axles would pay a multiple of these tolls.

Exhibit 8 illustrates the preliminary forecast for potential gross toll revenues under the Base Condition toll schedule above, with the timing for Stage 1 and Stage 2 tolling aligned with the Funding Constrained Baseline delivery schedule. Potential gross toll revenues represent the revenue that would be generated if the appropriate tolls were collected without delay from every vehicle using the toll facilities. Ramp-up adjustments over the first 24 months of Stage 1 and Stage 2 operations account for the time it takes travelers to become accustomed to tolling, obtain a *Good To Go!* account and decide which travel option works best for them. With no toll escalation assumed in the Base Condition, the growth in potential gross toll revenues is driven entirely by forecasted traffic growth once the Stage 2 ramp-up is complete.

Exhibit 8 also illustrates the preliminary projection for net toll revenues after factoring in various revenue adjustments, leakage, toll collection O&M costs, and facility O&M costs. Net toll revenues represent the cash flow that is available to support financing and other uses such as reserves for major maintenance, repair and replacement (R&R) activities.



EXHIBIT 8: POTENTIAL GROSS AND NET TOLL REVENUE PROJECTIONS | BASE CONDITION TOLLS AND FUNDING CONSTRAINED BASELINE SCHEDULE



- The current preliminary net revenue projections for the Gateway Program range from 34% to 75% higher than those prepared in the 2013 study when compared over Stage 2 post-completion / post ramp-up forecast period.
- Without any toll escalation assumed, tolls are projected to sustain net revenues in excess of \$45 million per year for 30 years following the ramp-up period.

Considering both of the above points, the current net revenue projections would also appear to have the capacity to yield at least \$180 million in up front capital funding from borrowing against the future net toll revenues.

The department will engage the Office of the State Treasurer (OST) for a more comprehensive analysis of toll financial capacity. For purposes of this report, preliminary financial capacity analysis was conducted using more conservative assumptions than the 2013 study with the sole objective of confirming that the Base Condition tolls could support at least \$180 in net toll bond proceeds for the Funding Constrained Baseline schedule or any of the three schedule acceleration cases described herein that advance toll funding.

The Washington State Transportation Commission (WSTC) will establish toll rates and policies. WSDOT will continue to make refinements to the toll traffic and revenue modeling and net toll revenue projections to support and collaborate with the WSTC and OST as they assess various toll policy and financing scenarios, respectively.



Funding Constraints and Opportunities

The timing of the Gateway Program funding is set in the State's capital program budget by the Legislature on a biennium (two fiscal year) basis, as shown in Exhibit 5. Absent any action to advance these funding amounts earlier in time, the schedule for delivery of the Gateway Program is constrained by the availability of these funds.

The Gateway Program's engineering team considers that there are opportunities to significantly accelerate the program delivery, especially in Stage 2, if funding can be provided earlier than what is currently budgeted as shown in Exhibit 5.

For purposes of examining potential schedule acceleration cases, the following assumptions are made about the funding timing constraints and opportunities.

Connecting Washington State Funding Assumptions

- The Legislature has programmed the approximately \$1.566 billion in state funds by biennium, covering FY 2016 through FY 2031.
- Funds can be readily shifted around within the two fiscal years of each biennium as needed.
- Budgeted funds in a biennium can be readily deferred to a later biennium without penalty or adverse impacts to other Connecting Washington projects.
- Budgeted funds in a biennium can only be advanced to an earlier biennium with legislative action, and it is assumed that any such advancement does not adversely impact any other Connecting Washington project. Opportunities to advance Connecting Washington state funds may include:
 - Direct advancement by the Legislature, assuming surplus funds are available for transfer based upon the pace of program-wide Connecting Washington project expenditures.
 - Indirect advancement involving short-term loan approved by the Legislature to borrow funds for use in one biennium to be repaid (with interest) from funds received in a subsequent biennium.
 - Regardless of the approach, advancing some Connecting Washington state funds may require the Gateway Program to forgo a portion of the current or subsequent funds to pay interest or otherwise compensate the lending party or project that must await repayment.

Local Funding and Grant Assumptions

- The current legislative budget shows the \$130 million of local funding distributed in FY 2024 through FY 2029.
- The first \$20 million in federal grant funding WSDOT hopes to obtain from one or more federal grant programs is assumed to be counted as part of the local contribution.



- The Gateway Program has already successfully raised \$14.4 million from grant programs, and the program team has prepared a realistic forecast that spreads out the local funding contributions and secured grants from FY 2019 through FY 2029.
- The acceleration cases will start with the team's local funding forecast and further advance the local contributions and grants if needed to accommodate completion dates earlier than FY 2029.

Toll Funding Assumptions

- The current legislative budget shows the \$180 million of toll funding, assumed to be bond proceeds in FYs 2030 and 2031 from leveraging future net toll revenues.
- Toll bonds can be issued up to three years prior to commencing Stage 2 toll operations:
 - This will require capitalizing interest costs (borrowing more than is needed for capital construction, with the additional amount used to pay interest during construction until tolls can fully cover debt service).
 - Stage 1 net toll revenues can be used for pay-as-you-go construction expenditures or contribute to debt service, thereby lowering the amount of capitalized interest.
- Preliminary projections support the assumption that the net toll revenue stream is sufficiently robust to finance at least \$180 million in upfront capital funding under the range of project acceleration cases examined herein that would shift the start of Stage 1 and Stage 2 tolling.

Uses of Program Funds

Capital Cost Estimates

Capital cost estimates for the SR 509 and SR 167 Completion Projects comprising the Gateway Program were updated in late 2017 and put through a probabilistic cost and schedule risk assessment using WSDOT's Cost Estimate Validation Process (CEVP®), with the following objectives:

- Validate the program cost and schedule estimates;
- Assess and quantify the associated cost and schedule uncertainty as separate projects under the Puget Sound Gateway Program; and
- Prioritize project risks and opportunities for future risk management.

The CEVP® analysis was documented in the May 7, 2018 final report, which presented the 50th percentile capital cost estimate at \$1.889 billion in year of expenditure (YOE) dollars. This estimate relied on the then current WSDOT forecasts for future construction, right-of-way, and preliminary engineering inflation indices, dated December 2016.



In June of 2018, WSDOT updated these three inflation indices, with the most impactful revisions occurring as increases to the construction cost index. As a result, the Gateway Program team undertook an additional update to the program capital cost estimate to capture the effects of the revised inflation indices and adjust the expenditure schedule to match the availability of funding.

Inflation Indices

Exhibit 9 illustrates the WSDOT revised June 2018 and previous December 2016 cost inflation indices, and Exhibit 10 shows the annual rates of change (inflation rates) in these indices. The preliminary engineering cost index shows only subtle changes. The right-of-way index is lower, which helps to reduce the estimated cost for the remaining land purchases, which are estimated to be largely completed by the end of FY 2020. However, it is the construction cost index — which represents 85% of the total capital costs — that is driving the current capital cost estimates higher. The cumulative effect of higher construction cost escalation estimates in FYs 2019-22 offset any subsequent dampening in the inflation rate, with the forecast period net increase in the construction cost index averaging 4.7% higher.

EXHIBIT 9: WSDOT JUNE 2018 AND DECEMBER 2016 COST INFLATION INDICES

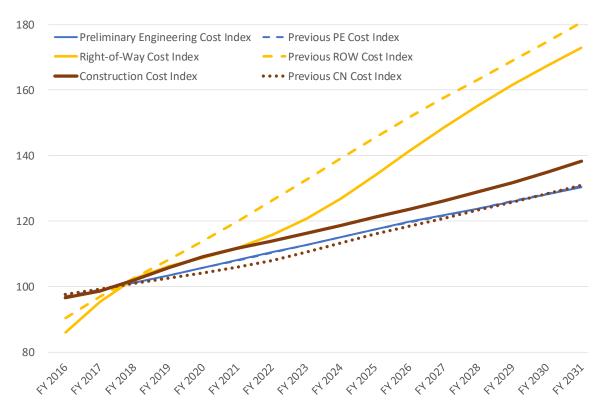
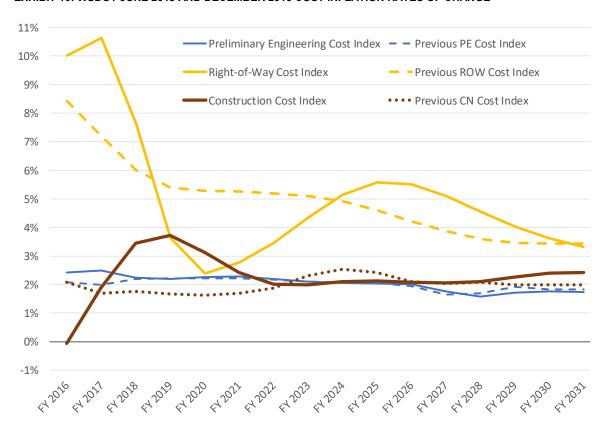




EXHIBIT 10: WSDOT JUNE 2018 AND DECEMBER 2016 COST INFLATION RATES OF CHANGE



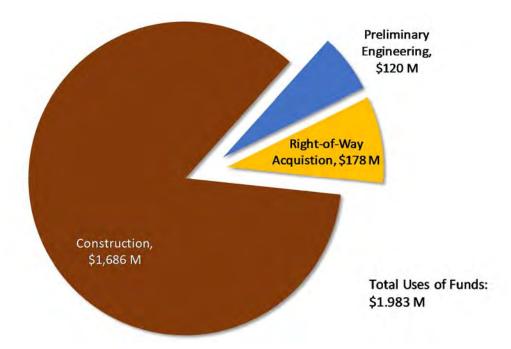
Funding Constrained Baseline

As shown in Exhibit 5, beyond the current biennium, the legislative budgeted funding for the Gateway Program is fairly uniform over the next 12 years. In updating the capital cost estimates, the program team set out to capture the latest inflation estimates while constraining the construction expenditures and ultimate delivery to align with the availability of funding. This primarily involved extending the schedule for Stage 2, and resulted in a new YOE cost estimate of \$1.983 billion, which is 5% higher than the May 2018 CEVP® estimate of \$1.889 billion. Compared with available funding, there is a funding gap of \$102 million assuming no national program federal funding beyond the \$20 million included in the local funding assumptions.

Exhibit 11 below shows the distribution of these expenditures by type: preliminary engineering, right-of-way, and construction. Preliminary engineering activities represent 6% of the capital cost, and right-of-way 9%, with construction capturing 85%.



EXHIBIT 11: GATEWAY PROGRAM USES OF FUNDS FOR THE FUNDING CONSTRAINED BASELINE



The \$1.983 billion program cost estimate that aligns the construction expenditure schedule with the available, legislative budgeted funding is called the Funding Constrained Baseline. This title reflects its role as the reference point or basis of comparison from which to evaluate the benefits of program schedule acceleration. The Funding Constrained Baseline also serves as the benchmark cost and schedule for the Gateway Program Construction and Implementation Report as well as WSDOT's Capital Program Management System (CPMS) and Transportation Executive Information System (TEIS).

Exhibit 12 illustrates the aligned sources and uses of funds for the Funding Constrained Baseline program cost and schedule, by fiscal year.

Construction Schedule Notes — Funding Constrained Baseline

- Construction expenditures align with available funding as currently budgeted by the Legislature.
- Construction is completed in FY 2031 (assuming that the funding gap is filled in that year).
- Stage 1 open to traffic:
 - o SR 509: FY 2026 (July 2025)
 - o SR 167: mid FY 2026 (January 2026)
- Stage 2 open to traffic in mid FY 2031 (January 2031)

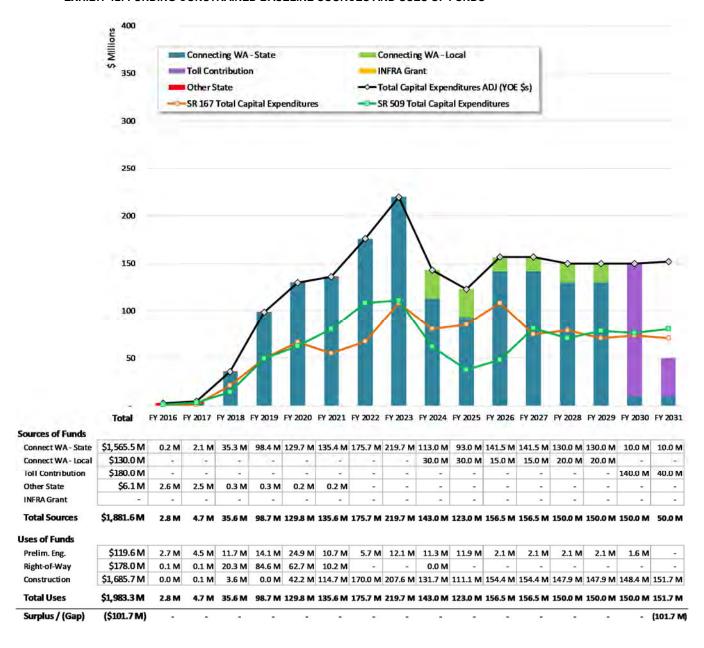


Funding Notes — Funding Constrained Baseline

- Connecting Washington State funding by fiscal year adheres to the legislative budget totals by biennium.
- Toll funding by fiscal year adheres to the legislative budget totals by biennium (FYs 2030-31).
- Local funding by fiscal year adheres to the legislative budget totals by biennium, much of which would come later than the Gateway Program team's current expectations, made with notice to the local cities, counties and ports and reflecting local grant awards already received.
- No national program federal grant funding beyond the \$20 million included in the \$130 million local funding contribution is assumed during construction, which leaves a funding gap of \$102 million in FY 2031 that would ultimately need to be made up to fully fund the current scope of work.



EXHIBIT 12: FUNDING CONSTRAINED BASELINE SOURCES AND USES OF FUNDS





Program Acceleration Benefits

Construction Acceleration Cases

The aforementioned legislative budget proviso asks WSDOT to analyze benefits of advancing the program's funding-driven schedule. Three example cases for Gateway Program schedule acceleration were developed to assess technical feasibility and potential financial and economic benefits, relative to the Funding Constrained Baseline schedule. Each case builds on the previous case with additional advancement of the Stage 2 schedule, as well as minor advancement of SR 509 Stage 1.

- Case 1 Modest Acceleration
- Case 2 Medium Acceleration
- Case 3 Maximum Acceleration

The acceleration in the schedule for program completion ranges from two years under Case 1 Modest Acceleration to 4.5 years under Case 3 Maximum Acceleration. The dates by which the Stage 2 program components are open for operations with tolling generally follows the same pattern as construction completion, though six months earlier. The one exception comes under Case 3 where SR 509 Stage 2 opens one year earlier than SR 167, or 5.5 years earlier than under the Funding Constrained Baseline. SR 509 Stage 1 tolling also opens one year earlier in Case 3 than in the other cases.

Exhibit 13 presents the construction timelines for the Funding Constrained Baseline and the three acceleration cases, and includes the Stage 1 and Stage 2 tolling start dates for both SR 509 and SR 167, as well as the total program cost.

EXHIBIT 13: CONSTRUCTION ACCELERATION CASE TIMELINES AND PROGRAM COSTS

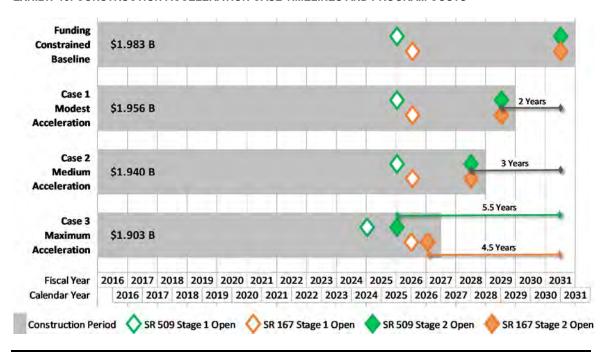




EXHIBIT 14: CONSTRUCTION EXPENDITURES BY SCHEDULE ACCELERATION CASES

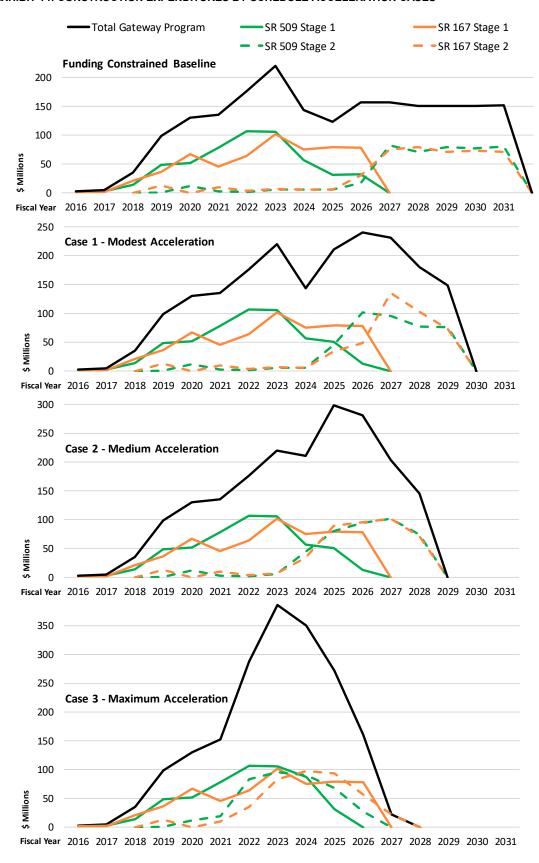




Exhibit 14 illustrates how the three acceleration cases progressively compress the construction schedule while increasing the average annual expenditures. Schedule compression occurs primarily within Stage 2, though for SR 509, the later parts of the Stage 1 construction expenditures are also somewhat accelerated.

Under the Funding Constrained Baseline, the two construction stages are largely sequential. For Case 1 Modest Acceleration, a bit of overlap between Stages 1 and 2 begins to occur, though there remains two separate and distinct periods of peak expenditures. For Case 2 Medium Acceleration, Stage 2 construction expenditures are ramped up well ahead of Stage 1 completion, and the two distinct peak expenditure periods are closer together with a less prominent transition. By Case 3 Maximum Acceleration, Stage 1 and 2 expenditures are largely concurrent and there are no longer two separate peak construction periods, which sets up the opportunity to facilitate a single delivery contract for each project.

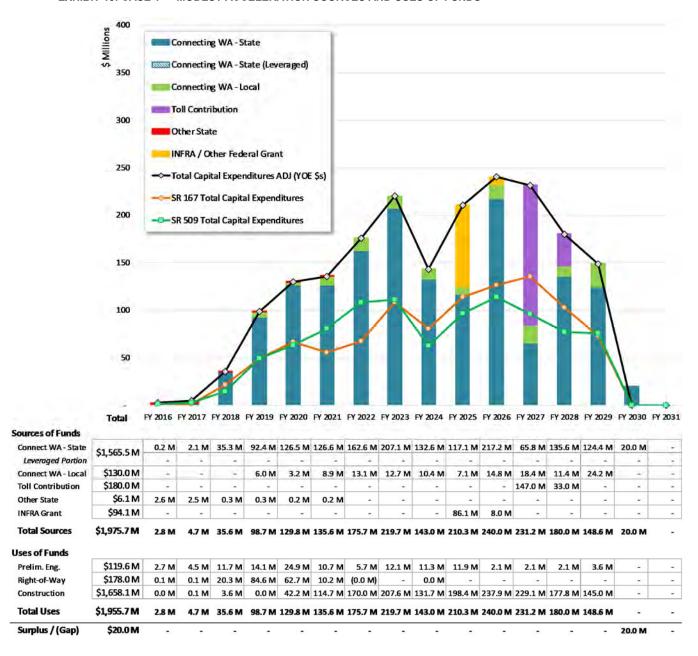
While the focus of this report is on the benefits of program acceleration, there are potential risks associated with meeting the increasing levels of schedule compression under the three representative cases, including those related to legislative action, financing costs, and timely receipt of federal and local grants included in balancing a financial plan. Some of these risks are highlighted further under each acceleration case; however, for the most part, risk analysis and mitigation will be forthcoming as policymakers consider options and propose new, tailored cases building upon the representative examples presented herein.



Case 1 Modest Acceleration

Exhibit 15 presents the aligned sources and uses of funds for the Case 1 Modest Acceleration program cost and schedule, by fiscal year. Projected inflation savings have lowered the overall program cost estimate by nearly \$28 million relative to the Funding Constrained Baseline.

EXHIBIT 15: CASE 1 — MODEST ACCELERATION SOURCES AND USES OF FUNDS





Construction Schedule Notes — Case 1 Modest Acceleration

- Construction expenditures are accelerated by two years with completion in FY 2029 and funding advanced to match.
- Stage 1 open to traffic dates have not changed:
 - o SR 509: FY 2026 (July 2025)
 - o SR 167: mid FY 2026 (January 2026)
- Stage 2 open to traffic dates have been accelerated by two years to mid FY 2029 (January 2029).
- Schedule acceleration results in inflation cost savings of nearly \$28 million for the Gateway Program.

Funding Notes — Case 1 Modest Acceleration

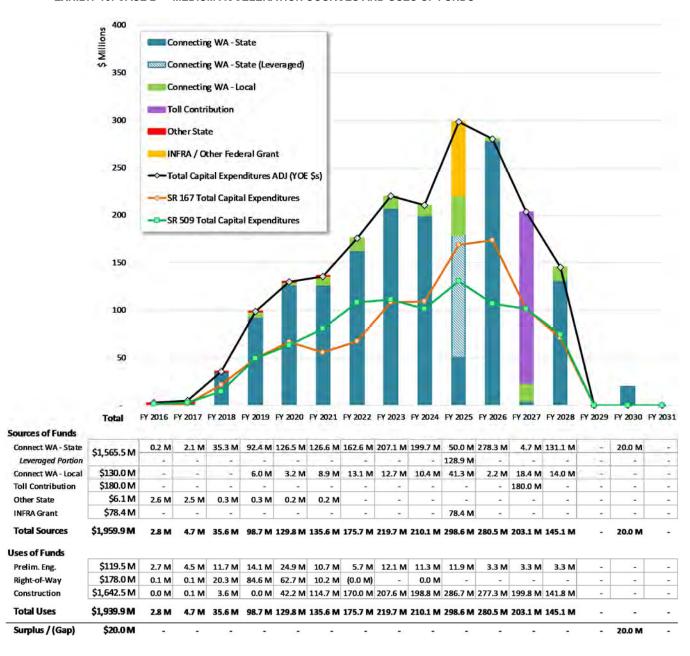
- Connecting Washington State funding by fiscal year adheres to the legislative budget totals by biennium, with the following exceptions deferring funds:
 - \$44 million in state funding in FYs 2019-23 (over three biennia) is deferred until FY 2024 (2023-25 biennium) to accommodate an equal amount of local funding that is expected to be available in the same years.
 - \$20 million in state funding budgeted for FY 2030 (2029-31 biennium) is left unused since Case 1 completes program construction in FY 2029.
- Toll funding by fiscal year totaling \$180 million is advanced by three years to FYs 2027-28, which is up to 2.5 years prior to Stage 2 toll operations but subsequent to Stage 1 toll operations.
- Local funding by fiscal year is advanced to match the Gateway Program team's best expectations, made with notice to local cities, counties and ports and reflecting local grant awards already received.
 - The \$20 million of local funding assumed to originate from national federal grant programs is assumed to be part of a larger federal grant (i.e. INFRA or successor) in FYs 2025-26.
- National program federal grant funding of \$114.1 million is assumed to be received in FYs 2025-26, with \$20 million counted as part of the local funding contribution in Exhibit 15, and the remaining \$94.1 million categorized as federal.



Case 2 Medium Acceleration

Exhibit 16 presents the aligned sources and uses of funds for the Case 2 Medium Acceleration program cost and schedule, by fiscal year. Projected inflation savings have lowered the overall program cost estimate by more than \$43 million relative to the Funding Constrained Baseline.

EXHIBIT 16: CASE 2 — MEDIUM ACCELERATION SOURCES AND USES OF FUNDS





Construction Schedule Notes — Case 2 Medium Acceleration

- Construction expenditures are accelerated by three years with completion in FY 2028 and funding advanced to match.
- Stage 1 open to traffic dates have not changed:
 - o SR 509: FY 2026 (July 2025)
 - o SR 167: mid FY 2026 (January 2026)
- Stage 2 open to traffic dates have been accelerated by three years to mid FY 2028 (January 2028), compared with the Funding Constrained Baseline.
- Schedule acceleration results in inflation cost savings of over \$43 million for the Gateway Program.

Funding Notes — Case 2 Medium Acceleration

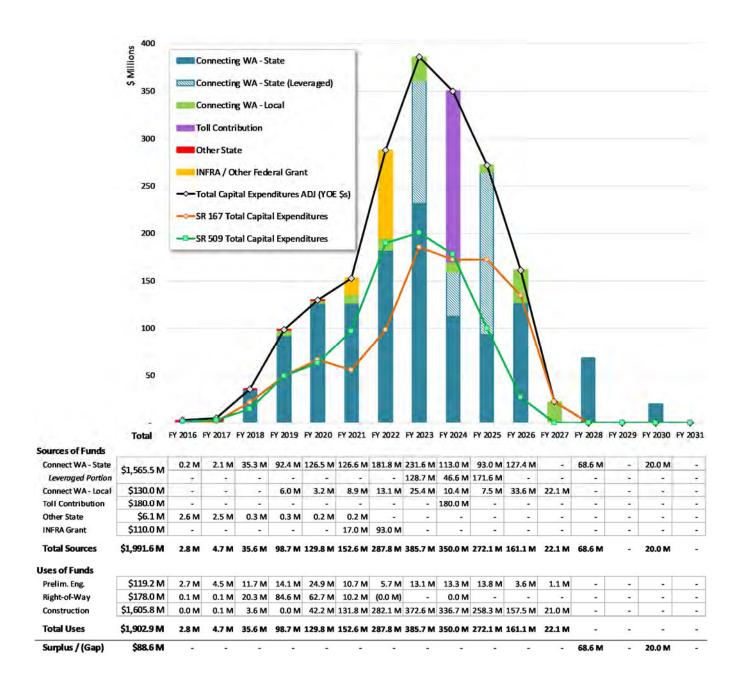
- Connecting Washington State funding by fiscal year adheres to the legislative budget totals by biennium, with the following acceleration and deferral exceptions:
 - \$129 million in state funding is advanced by two biennia, from FY 2028 in the Funding Constrained Baseline to FY 2025 in Case 2
 - As with Case 2, \$44 million in state funding in FYs 2019-23 (over three biennia) is deferred until FY 2024 (2023-25 biennium) to accommodate an equal amount of local funding that is expected to be available in the same years.
 - \$20 million in state funding budgeted for FY 2030 (2029-31 biennium) is left unused since Case 2 completes program construction in FY 2028.
- Toll funding by fiscal year totaling \$180 million is advanced by up to four years to FY 2027, which is 1.5 years prior to Stage 2 toll operations but subsequent to the start of Stage 1 toll operations.
- Local funding by fiscal year, already adjusted to match the Gateway Program team's best expectations in Case 1, would incorporate further acceleration, including the advancement of local funding that would otherwise become available after program completion.
 - The \$20 million of local funding assumed to originate from national federal grant programs is assumed to be part of a larger federal grant (i.e. INFRA or successor) in FYs 2025-26.
 - Financing costs, if any, associated with accelerating local funding commitments, have not been considered.
- National program federal grant funding of \$98.4 million is assumed to be received in FYs 2025-26, with \$20 million counted as part of the local funding contribution in Exhibit 16, and the remaining \$78.4 million categorized as federal.



Case 3 Maximum Acceleration

Exhibit 17 presents the aligned sources and uses of funds for the Case 3 Maximum Acceleration program cost and schedule, by fiscal year. Projected inflation savings have lowered the overall program cost estimate by more than \$80 million relative to the Funding Constrained Baseline.

EXHIBIT 17: CASE 3 — MAXIMUM ACCELERATION SOURCES AND USES OF FUNDS





Construction Schedule Notes — Case 3 Maximum Acceleration

- Construction expenditures are accelerated by 4.5 years for the program as a whole to mid FY 2027, with the SR 509 Corridor Completion Project wrapping up as much as a year earlier.
- Stage 1 open to traffic dates:
 - o SR 509: FY 2025 (July 2024), one year earlier than the other cases
 - o SR 167: mid FY 2026 (January 2026)
- Stage 2 open to traffic dates have been accelerated by up to 5.5 years:
 - SR 509: FY 2026 (July 2025), 5.5 years earlier than the Funding Constrained Baseline
 - SR 167: mid FY 2026 (January 2026), 4.5 years earlier than the Funding Constrained Baseline
- Schedule acceleration results in inflation cost savings of over \$80 million for the Gateway Program.

Funding Notes — Case 3 Maximum Acceleration

- Case 3 Maximum Acceleration considers the fastest possible delivery of the program assuming that funding is not a constraint while balancing the risks of compressed delivery against the risk savings of acceleration.
- Connecting Washington State funding by fiscal year makes several departures from the legislative budget totals by biennium:
 - \$347 million in state funding is advanced by two biennia, from FYs 2026 29 in the Funding Constrained Baseline to FYs 2023-25 in Case 3
 - Similar to the other cases, \$18 million in state funding in FYs 2019-22 (over two biennia) is deferred until FYs 2022-23 (2021-23 biennium) to accommodate local funding that is expected to be available in the same years.
 - \$68.6 million in state funding budgeted for FY 2028 (2027-29 biennium) is left unused since Case 3 completes program construction in FY 2027
 - Similarly, \$20 million in state funding budgeted for FY 2030 (2029-31 biennium) is left unused since Case 3 completes program construction in FY 2027.
- Toll funding by fiscal year totaling \$180 million is advanced by up to seven years to FY 2024, which is two years prior to Stage 2 toll operations and at least a year prior to the start of Stage 1 toll operations.
- Local funding by fiscal year, already adjusted to match the Gateway Program team's best expectations in Case 1 and then accelerated in Case 2, would



incorporate further acceleration, including local the advancement of local funding that would otherwise become available after program completion.

- The \$20 million of local funding assumed to originate from national federal grant programs is assumed to be part of a larger federal grant (i.e. INFRA or successor) in FYs 2025-26.
- Financing costs, if any, associated with accelerating local funding commitments, have not been considered.
- National program federal grant funding of \$130.0 million is assumed to be received in FYs 2025-26, with \$20 million counted as part of the local funding contribution in Exhibit 15, and the remaining \$110.0 million categorized as federal.

Financing and Delivery Options

Advancing State Funds

Case 2 Medium Acceleration, and to a greater extent, Case 3 Maximum Acceleration, assume that some of the Connecting Washington state funding can be advanced to earlier points in time. While this could be achieved directly by action of the Legislature, such an approach may not be feasible due to the potential adverse effects on the delivery of other Connecting Washington projects. Providing earlier Gateway Program funding is likely to require that one or more other projects defer their funding unless future motor fuel tax revenues come in ahead of schedule or one or more of the other Connecting Washington projects falls behind schedule.

Other, more indirect options for advancing the Connecting Washington state funds could involve some form of short-term financing or a loan with legislative approval. Case 2 Medium Acceleration requires \$129 million in state funding be advanced from FY 2028 to FY 2025, but also leaves behind \$20 million that becomes available in FY 2030. Similarly, Case 3 Maximum Acceleration requires that \$347 million be advanced from FYs 2026-29 in the Funding Constrained Baseline to FYs 2023-25, and leaves behind \$69 million that becomes available in FY 2028 and another \$20 million in FY 2030, well after the projected FY 2027 completion.

The combined \$89 million in "unused" state funds that become available after program completion under Case 3 Maximum Acceleration could provide a means to pay the financing or other costs for advancing the \$347 million in state funds that is required for acceleration. Essentially, a \$426 million subset of Connecting Washington state funds delivered according to the schedule shown in Exhibit 5 could be available to exchange for \$347 million delivered sooner to facilitate schedule acceleration. The same would be true for Case 2 Medium Acceleration, albeit on a smaller scale.

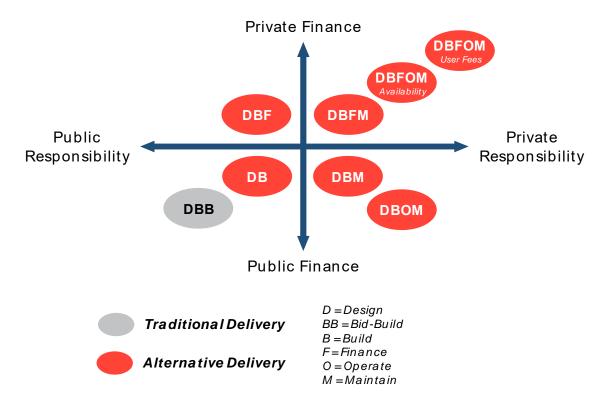
Public-Private Partnerships

A Public-Private Partnership (P3), depending on the nature of the partnership, may also provide financing opportunities to advance the Connecting Washington state funding. P3s comprise a spectrum of alternative project delivery methods codified in the form of



contractual agreements between a public agency (the owner) and a private entity (the private partner) that allow for greater private sector participation in the delivery and operation of projects. A P3 contract could leverage private sector involvement in design, financing, construction, operations and/or maintenance of the facility. Exhibit 18 illustrates the spectrum of P3 models across delivery and financing responsibilities.

EXHIBIT 18: SPECTRUM OF PUBLIC-PRIVATE PARTNERSHIP ALTERNATIVE DELIVERY MODELS



The Design-Build-Finance-Operate-Maintain (DBFOM) model provides the full potential of the P3 delivery method in which the private partner would arrange the project financing. However, Washington State's P3 statutes would need to be overhauled by the Legislature to allow for a DBFOM P3, or cultivate interest in any form other than design-build, in part because the current P3 law restricts privately arranged financing for highway projects.

From a financing perspective for the Gateway Program, a toll-concession DBFOM P3 would leverage the future net toll revenues, likely using a combination of commercial bank debt, private activity bonds (if capacity is available), and a USDOT Transportation Infrastructure Finance and Innovation Act (TIFIA) loan. Loans from the TIFIA program have low interest costs and advantageous repayment terms, including the capitalization of interest during construction, post-completion deferral of principal repayments during toll revenue ramp-up, and/or the sculpting of principal payments around other debt or growing revenues. These features make the program advantageous for projects that employ an extended, multi-stage delivery period like the Gateway Program. While a TIFIA loan is a financing tool that can benefit both public and privately financed projects, when weighed against an involved application and approval process, its merits can be more



advantageous for a P3 financing, where the cost differential between TIFIA and private taxable debt is considerably greater than for public tax-exempt bonds.

A DBFOM P3 could also help with the advancement of the Connecting Washington state funding by combining the elements of a toll concession with an availability payment concession. Specifically, an availability payment mechanism could be deployed in which the P3 concessionaire provides the funding when needed via equity or debt and receives availability progress payments for meeting program milestones as work is completed and/or over time post-completion. For Case 3, the additional \$347 million needed to be advanced to FYs 2023-25 to provide delivery by FY 2027 could be set aside as budgeted and combined with the additional \$89 million otherwise unused in FY 2028 and FY 2030 to make the availability payments inclusive of an investment rate of return to the concessionaire.

Alternatively, if the State would prefer to retain full control over the toll revenue stream and the risks therein, the entire P3 contract could be structured as a DBFOM availability payment concession, with the P3 private partner providing the funding as needed for delivery, and the public partner (the state) using the Connecting Washington state and local funds plus the net toll revenues over time to disburse the agreed upon availability payments.

A P3 private partner under a DBFOM concession contract may be able to bring additional innovation to the program design with the goal of lowering life-cycle costs, since the private partner may have different incentives when also tasked with operating and maintaining the corridors over the concession period.

Because legislative action would be required to implement most project delivery methods along the P3 spectrum beyond design-build, there may be interest in establishing the Gateway Program, or one of its corridor projects, as a pilot project to assess the benefits of a DBFOM or similar more privately-focused P3 agreement. If interest develops for more private sector participation via P3 delivery for the Gateway Program, then additional analysis, including a value for money assessment, would be warranted.

Combined Contracts

Under the maximum acceleration case, the high degree of overlap or concurrent delivery of Stage 1 and Stage 2 would warrant the careful evaluation of combining the delivery contract vehicles for both stages for each of the completion projects. There could be some efficiency, synergy and single point-of-contact advantages from having one design-build contract for SR 509 and one for SR 167, each of which would combine the later elements of Stage 1 (Stage 1b) with Stage 2. However, the execution of single delivery contracts for one or both of the completion projects would require having the Stage 2 funding plan in place in advance of the Stage 1b contract procurement process for each project. The procurement of the Stage 1b design-build contracts are expected to begin as early as late 2019, with award by as soon as mid-2020. Meeting such a timeline would require early legislative action in 2019 to advance the Connecting Washington – State funding or otherwise provide full funding authorization.



Legislative Considerations

In order for the Gateway Program to proceed, there would be two points at which legislative direction or action would be needed:

- Toll authorization, formally codifying the decision to toll the SR 509 and SR 167
 Corridor Completion Projects; and
- Bond authorization to allow for borrowing against future net toll revenues to provide the \$180 million up-front toll funding contribution toward construction.

Compared with the Funding Constrained Baseline schedule, the various acceleration cases would require the above two legislative milestones at earlier points in time. Moreover, Cases 2 and 3 will most likely require additional legislative action(s) to advance the Connecting Washington state funding and/or enable alternative P3 delivery methods, with these additional steps potentially adding risk of timely completion to facilitate the progressively heightened acceleration.

Exhibit 19 summarizes the various points in time in which legislative consideration is required.

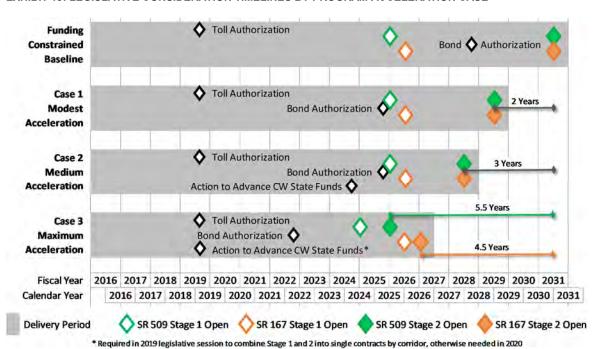


EXHIBIT 19: LEGISLATIVE CONSIDERATION TIMELINES BY PROGRAM ACCELERATION CASE



Benefits of Earlier Program Delivery

Quantifiable Transportation Economic Benefits

To fulfill the application requirements for the Federal INFRA discretionary grant program, a benefit-cost analysis (BCA) for the Gateway Program was prepared in late 2017. Making use of travel-demand modeling performed in connection with program planning efforts, and assuming a project schedule that aligns with the Funding Constrained Baseline, the BCA describes expected travel-related outcomes and mobility benefits that would be realized on an annual basis by both the SR 509 and SR 167 Completion Projects, and converts those outcomes into monetary values.

These outcomes, which are described for both the project facilities and across the regional roadway network, include changes in vehicle-miles traveled (VMT) for both automobiles and trucks; travel-time savings expressed as reductions in person-hours traveled (PHT); and reductions in fuel consumption, tailpipe emissions, pavement damage, and noise pollution. The BCA results indicate that the Gateway Program is expected to generate substantial economic benefits for the Puget Sound region, with an estimated net present value (NPV) in excess of \$2.8 billion in 2017 dollars, discounted to 2017 using a 7% real discount rate.

That BCA model, along with its associated inputs and assumptions, was used to quantify and monetize the incremental benefits that would be delivered by an accelerated project schedule for the Gateway Program. This "incremental" BCA was conducted by leveraging the existing travel-demand modeling to forecast how travel-related outcomes would change under the three acceleration cases. That is, the BCA model captures the incremental benefits that would be generated by the project's earlier opening dates, subtracts the incremental O&M costs that would be incurred, and therefore describes the net economic benefits that can reasonably be expected to be generated by accelerating the Gateway Program.

According to this analysis, accelerating the Gateway Program would produce substantial economic benefits for the Puget Sound region, and deliver those benefits to the public sooner than in the Funding Constrained Baseline.

Exhibit 20 summarizes the level of incremental economic mobility benefits for each acceleration case in terms of VMT and PHT cost savings and the economic value of improved mobility from earlier delivery.

Quantifiable Financial Benefits

Program acceleration also delivers key financial benefits. Earlier completion results in a lower program cost as construction materials and labor activities experience less cost inflation.

In addition, earlier delivery allows tolling to start sooner, yielding additional toll revenues, concurrent with the additional mobility benefits.



Exhibit 20 also presents the financial benefits of inflation cost savings and additional toll revenues for each program acceleration case.

Appendix A includes a matrix that summarizes all of the program acceleration considerations along with the schedule, financial, and economic benefits for each representative acceleration case in terms of VMT and PHT saved and the economic value of improved mobility from earlier delivery.

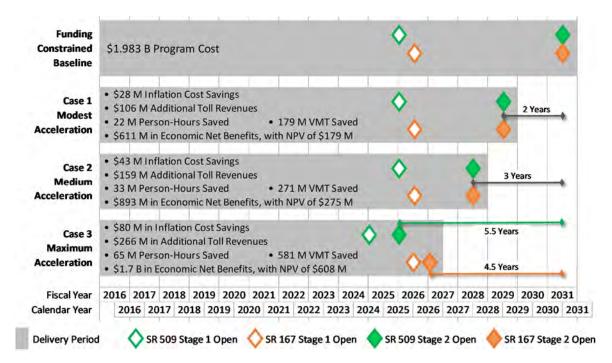


EXHIBIT 20: BENEFITS BY PROGRAM ACCELERATION CASE

Note: NPV stands for discounted Net Present Value, evaluated using a 7% real discount rate.

Other Local and Sub Regional Benefits

A consideration of program acceleration benefits must also include how the changes to travel time and accessibility across the network will impact the cities, counties, and ports in the region according to a different timetable. Although the expected long-term benefits of the project will generally be equal, providing transportation network improvements quicker presents advantages through the earlier receipt of benefits. This can include benefits such as sales tax revenue from highway construction; traffic congestion relief; traffic safety improvements; and economic development opportunities, among others.

The acceleration of Stage 2 of the SR 509 Completion Project will result in benefits accruing to communities 2 to 5.5 years earlier than under the Funding Constrained Baseline, as shown in Exhibit 20. Two main elements of Stage 2 will be the primary source of these benefits:



- Extending SR 509 provides improved regional access overall, and creates an alternative route to I-5 into Seattle
- Improvements to the S 188th Street interchange with SR 509 will provide better access via I-5 / SR 509 from the south to local communities around the new alignment, and will provide a second alternate access point for the Sea-Tac Airport

In addition, auxiliary lane improvements within I-5 southbound, south of SR 516, to manage increased traffic flows to/from SR 509 are also expected as part of Stage 2.

Accelerating Stage 2 of the SR 167 Completion Project will have significant impacts due to the new connection made between I-5 and the end of the existing limited access alignment of SR 167 in Puyallup. Schedule acceleration would advance the completion date of the project by 2 to 4.5 years, as shown in Exhibit 20, and result in communities in the area receiving significant accessibility benefits at an earlier date. The two major elements of the project expected to provide benefits include the following:

- The new Valley Avenue interchange with SR 167 will provide access via the new limited access highway to I-5 / Port of Tacoma and the SR 167 corridor to the east, providing greater regional access to eastern Fife and the surrounding area.
- The new North Meridian Avenue / SR 161 interchange and its connection with the existing SR 167 limited access highway provides improved access for several communities in the area, including Edgewood, Puyallup, Sumner, and Pacific. This linkage will reduce travel times and the improvement in accessibility will increase the feasibility for new development in these areas.

The benefits that will accrue faster to various local communities and stakeholders due to Stage 2 program schedule acceleration are summarized in Exhibit 21 below.



EXHIBIT 21: LOCAL IMPACTS BY COMMUNITY / STAKEHOLDER FROM STAGE 2 ACCELERATION

| Community / Stakeholder | Accelerated Benefit |
|----------------------------|---|
| | SR 509 COMPLETION PROJECT |
| Port of Seattle | Reductions in travel times for access to the Duwamish MIC from locations in the south, via the new SR 509 alignment (15–19 minutes travel time savings to/from Federal Way) Alternate access route to Sea-Tac International Airport supported at S 188th Street |
| King County | Receipt of over \$360k in general sales tax receipts, plus about \$480k in sales taxes allocated for mental health, criminal justice programs (\$840k in total sales tax receipts to the county) |
| Burien | Improved interchange at S 188th Street provides greater access to south Burien (up to 7–10% time savings) Increased traffic volumes on SR 509 but also some increased truck traffic volumes on local streets used to access the new section of SR 509. |
| Des Moines | Receipt of over \$180k in sales tax receipts Major traffic diversions from local streets to limited access SR 509 alignment, with associated traffic safety benefits |
| Kent | Receipt of over \$140k in sales tax receipts |
| SeaTac | Receipt of about \$1.7M in sales tax receipts Improved interchange at S 188th Street provide alternate access to Sea-Tac Airport and the city from the south Connection created to the regional Lake to Sound Trail |
| | SR 167 COMPLETION PROJECT |
| Port of Tacoma | Improved travel times and access to warehousing and logistics uses along the SR 167 corridor |
| Pierce County | Receipt of \$970k in general sales tax receipts, plus about \$1.2M in sales taxes dedicated to specific programs (total \$2.1M) Significant diversion of traffic from local county roads to limited access highways (with traffic safety and maintenance benefits) |
| Edgewood | Receipt of about \$95k in sales tax receipts Development of storm water mitigation infrastructure to support future growth Improved access to I-5, SR 167 via SR 161 and new interchange at N Meridian Ave Lower traffic volumes (with safety and maintenance benefits) with lower through traffic |



| Community / Stakeholder | Accelerated Benefit |
|----------------------------|--|
| Fife | Receipt of over \$880k in sales tax receipts Significant diversion of traffic volumes from Valley Ave and N Levee Road (with associated safety and maintenance benefits) Direct access to SR 167 limited access highway via Valley Road interchange Improved development feasibility in eastern Fife/Valley Road area due to increased accessibility, lower travel times |
| Pacific | Improvements in regional travel times after completion of the SR 167 alignment in Stage 2 Improved development feasibility due to increased accessibility, lower travel times |
| Puyallup | Receipt of over \$966k in sales tax receipts Significant diversion of traffic volumes from N Levee Road and Valley Ave (with associated safety and maintenance benefits) Improvement in levels of service at the N Meridian Avenue interchange Substantial improvements in travel times and accessibility due to the new SR 167 alignment and improved N Meridian Avenue interchange in Stage 2 Improved commercial development feasibility due to increased accessibility, lower travel times |
| Sumner | Improvements in regional travel times after completion of the SR 167 alignment in Stage 2 Improved commercial development feasibility due to increased accessibility, lower travel times |



Appendix A: Program Acceleration Considerations and Benefits Matrix



Acceleration Considerations and Benefits

In addition to the Funding Constrained Baseline case (existing schedule and funding allocation), WSDOT identified three acceleration cases to evaluate: modest, medium, and maximum. The following table details the considerations for each case and the associated benefits.

Considerations

Benefits

| | Considerations | | | | | | | | | | | | |
|------------------------------------|--|---|---|---|--|--|--|--|--|---------------------------------|---|---|--|
| | Connecting Washington - State Funds | Connecting Washington - Local Funds | Toll Funding Contribution | Federal Grants (INFRA, BUILD) | Construction Complete | Open to Traffic (Stage 1) | Open to Traffic (Stage 2) | Program Cost and Inflation Savings | Reduced Miles of Vehicle Travel | Hours of Time Saved | Value of Earlier Net Mobility Benefits in Future Dollars | Present Value of Earlier Net Mobility Benefits in 2017 \$s (7% Real Discount Rate) | Comments |
| Funding Constrained Baseline | Per Legislature | Per Legislature | Per Legislature | None | Completed in 2031 | SR 509: FY 2026 SR 167: mid FY 2026 | SR 509: mid FY 2031 SR 167: mid FY 2031 | \$1,983 M | N/A | N/A | N/A | N/A | Under the current cost estimates, there would be a \$102 M funding gap in FY 2031, presumed to be filled with federal funding. |
| Case #1 Modest Acceleration | Early year funds delayed (based on expected availability of local funding) | Optimized | In FY 2027-28 2.5 Years Before Stage 2 Toll Operations | \$114 M in FY 2025-26 (\$20 M as part of the local contribution & \$94 M as federal) | Completed 2 years earlier | SR 509: FY 2026 SR 167: mid FY 2026" | SR 509: mid FY 2029 SR 167: mid FY 2029 | \$1,956 M Inflation savings of \$28 M | 179 M miles over 2 years | 22 M hours over 2 years | \$611 M over 2 years | \$179 M over 2 years | Defers \$44 M in early Connecting Washington funds until FY 2024 Leaves \$20 M in unused Connecting Washington funds in FY 2030 Federal grants would be reduced with additional toll funding Generates an additional \$106 M in toll revenue |
| Case #2 Medium Acceleration | Later year funds advanced Early year funds delayed | Optimized & accelerated | In FY 2027 1.5 Years Before Stage 2 Toll Operations | \$98 M in FY 2025 (\$20 M as part of the local contribution & \$78 M as federal) | Completed 3 years earlier | SR 509: FY 2026 SR 167: mid FY 2026 | SR 509: mid FY 2028 SR 167: mid FY 2028 | \$1,940 M Inflation savings of \$43 M | 271 M miles over 3 years | 33 M hours over 3 years | \$893 M over 3 years | \$275 M over 3 years | Advances \$129 M by 2 biennia from FY 2028 to FY 2025 Defers \$44 M in early Connecting Washington funds until FY 2024 Leaves \$20 M in unused Connecting Washington funds in FY 2030 Generates an additional \$159 M in toll revenue |
| Case #3 Maximum Acceleration | Later year funds advanced indirectly (financing) or directly (legislature) Early year funds delayed | Optimized & accelerated | In FY 2024 2-3 Years Before Stage 2 Toll Operations | \$130 M in FY 2021-22 (\$20 M as part of the local contribution & \$110 M as federal) | Completed 4.5 years earlier for SR 167 Completed 5.5 years earlier for SR 509 | SR 509: FY 2025 SR 167: mid FY 2026 | SR 509: FY 2026 SR 167: FY 2027 | \$1,903 M Inflation savings of \$80 M | 581 M miles over 5.5 years | 65 M hours over 5.5 years | \$1,714 M over 5.5 years | \$608 M over 5.5 years | Advances \$364 M in later Connecting Washington funds by 2 biennia Defers \$18 M in early Connecting Washington funds until FY 2024 Leaves \$20 M in unused Connecting Washington funds in FY 2024 and \$69 M in FY 2028 which could provide return on investment (pay financing costs) for advancing other Connecting Washington funds Generates an additional \$266 M in toll revenue |