



Puget Sound Gateway Program

INFRA Application

February 25, 2020



Attachment 1: Project Narrative

All Application Materials Available at www.wsdot.wa.gov/projects/gateway

Inside Cover Page

Basic Project Information:	
Project Name	Puget Sound Gateway Program
Project Sponsor	Washington State Department of Transportation
Was an INFRA application for this project submitted previously? If yes, what was the name of the project in the previous application?	Yes (FY 2017/18 and FY 2019) Puget Sound Gateway Program
Project Costs:	
INFRA Request Amount	\$ 98.4 M
Estimated Federal Funding (excluding INFRA)	\$ 16.0 M
Estimated Non-Federal Funding	\$ 1,916.7 M
Future Eligible Project Cost	\$ 1,909.0 M
Previously Incurred Project Costs (through 12/31/2019)	\$ 122.1 M
Total Project Cost	\$ 2,031.1 M
Are matching funds restricted to a specific project component?	No
Project Eligibility:	
Approximately how much of the estimated future eligible project costs will be spent on components of the project currently located on the National Highway Freight Network?	\$ 1,909.0 M
Approximately how much of the estimated future eligible project costs will be spent on components of the project currently located on the National Highway System?	\$ 1,909.0 M
Approximately how much of the estimated future eligible project costs will be spent on components constituting railway-highway grade crossing or grade separation projects?	\$ 6.8 M
Approximately how much of the estimated future eligible project costs will be spent on components constituting intermodal or freight rail projects, or freight projects within the boundaries of a public or private freight rail, water (including ports) or intermodal facility?	None
Project Location:	
State in which the project is located	Washington
Small or large project?	Large
Urbanized Area in which project is located, if applicable.	Seattle
Population of Urbanized Area	3,059,393
Is the project currently programmed in the TIP?	Yes
Is the project currently programmed in the STIP?	Yes
Is the project currently programmed in the MPO Long Range Transportation Plan?	Yes
Is the project currently programmed in the State Long Range Transportation Plan?	Yes
Is the project currently programmed in the State Freight Plan?	Yes

February 24, 2020

Secretary Elaine L. Chao
U.S. Department of Transportation
Office of the Secretary of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Dear Secretary Chao:

The Washington State Department of Transportation (WSDOT) is pleased to submit this application for the **Puget Sound Gateway Program** under the Infrastructure for Rebuilding America (INFRA) program. WSDOT's INFRA funding request is for \$98.4 million, matched by over \$1.9 billion in state, toll and local funding.

The **Puget Sound Gateway Program** integrates the State Route (SR) 509 and SR 167 Completion Projects with improvements to Interstate 5 and improved connectivity to Interstate 90, completing needed "missing links" in the Primary Highway Freight System accessing Sea-Tac International Airport, and the Ports of Seattle and Tacoma, collectively the Northwest Seaport Alliance (NWSA). The NWSA is a unique partnership between these two ports jointly managing marine cargo facilities, including the fourth-largest container port complex in North America. NWSA cargo activity employs over 58,000 people and supports goods movement from every corner of the country. Forty percent of all jobs in Washington are tied to trade. That includes hundreds of thousands of jobs in both rural and urban areas tied to the use of Sea-Tac International Airport and NWSA facilities.

Federal investment in the **Puget Sound Gateway Program** is important to the American economy. More than 90% of exports by value arrive by truck at the region's ports. Outside of Washington, the majority of NWSA export cargo by value originates from Wisconsin, Minnesota, Iowa, Nebraska, South Dakota, Montana, Idaho, California and Oregon, and ranges from agricultural products to machinery and electronics. The NWSA ranks as the second largest port complex in the country as measured by agricultural trade tonnage. However, these exports are severely constrained by congested highway bottlenecks leading to the ports. These rurally-produced, trade-dependent commodities need efficient and reliable highway infrastructure to transport them to markets. For example, trucks carrying wheat from Montana currently spend nearly an hour of their 13-hour journey traveling the final nine miles to the Port of Tacoma.

The **Puget Sound Gateway Program** offers an immediate way for the federal government to partner with regional, state, and local governments to eliminate a bottleneck in the national supply chain. The SR 509 and SR 167 Completion Projects have completed environmental reviews and are being delivered through innovative Design-Build procurement. With INFRA grant funding, the **Puget Sound Gateway Program** can reverse decades-long shortfalls in transportation system funding, closing key gaps in the nation's freight highway network.

We greatly appreciate USDOT's consideration of the requested investment in the **Puget Sound Gateway Program**.

Sincerely,



Roger Millar, P.E., FASCE, FAICP
Secretary of Transportation

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1 Project Description

1.1 Project Summary

Federal investment in the [Puget Sound Gateway Program](#) is vital to the continued success of the U.S. economy. Today, agricultural and manufactured goods produced in rural areas of Wisconsin, Minnesota, Iowa, Nebraska, South Dakota, Montana, Idaho, California, Oregon and Washington are stalled in traffic for only the final 10-15 miles of their trip into area marine ports and the airport. Imported goods are similarly delayed from the onset as they struggle through the Puget Sound freight highway network. International exports and productivity in the Pacific Northwest cannot reach their potential because shippers and farmers do not have direct access to the Ports of Tacoma and Seattle, operating together as the [Northwest Seaport Alliance \(NWSA\)](#), and the [Seattle-Tacoma International \(Sea-Tac\) Airport](#).

The [Puget Sound Gateway Program](#) offers a near-term solution to this problem: an integrated program comprising the [State Route \(SR\) 509 Completion Project](#) and the [SR 167 Completion Project](#), combined with improvements to Interstate 5 (I-5) where both corridors will make “missing link” connections (Figure 2). The [Puget Sound Gateway Program](#) will complete the highway system links to I-5 that the nation needs to relieve unnecessary congestion, reduce collisions, and support the ability of the Puget Sound’s port system to serve as a fundamental foundation of the U.S. economy, supporting every corner of the country.

The [Washington State Department of Transportation](#) (WSDOT) is requesting \$98.4 million (M) in INFRA grant funds to leverage \$1.93 billion (B) in local, state, federal, and toll funding for the Gateway Program. The Washington State Legislature and local governments, including \$60 M from the two ports, have collaborated to fund 95% of the Gateway Program. However, WSDOT needs this INFRA grant investment to close the 5% funding gap in order to complete the Gateway Program.

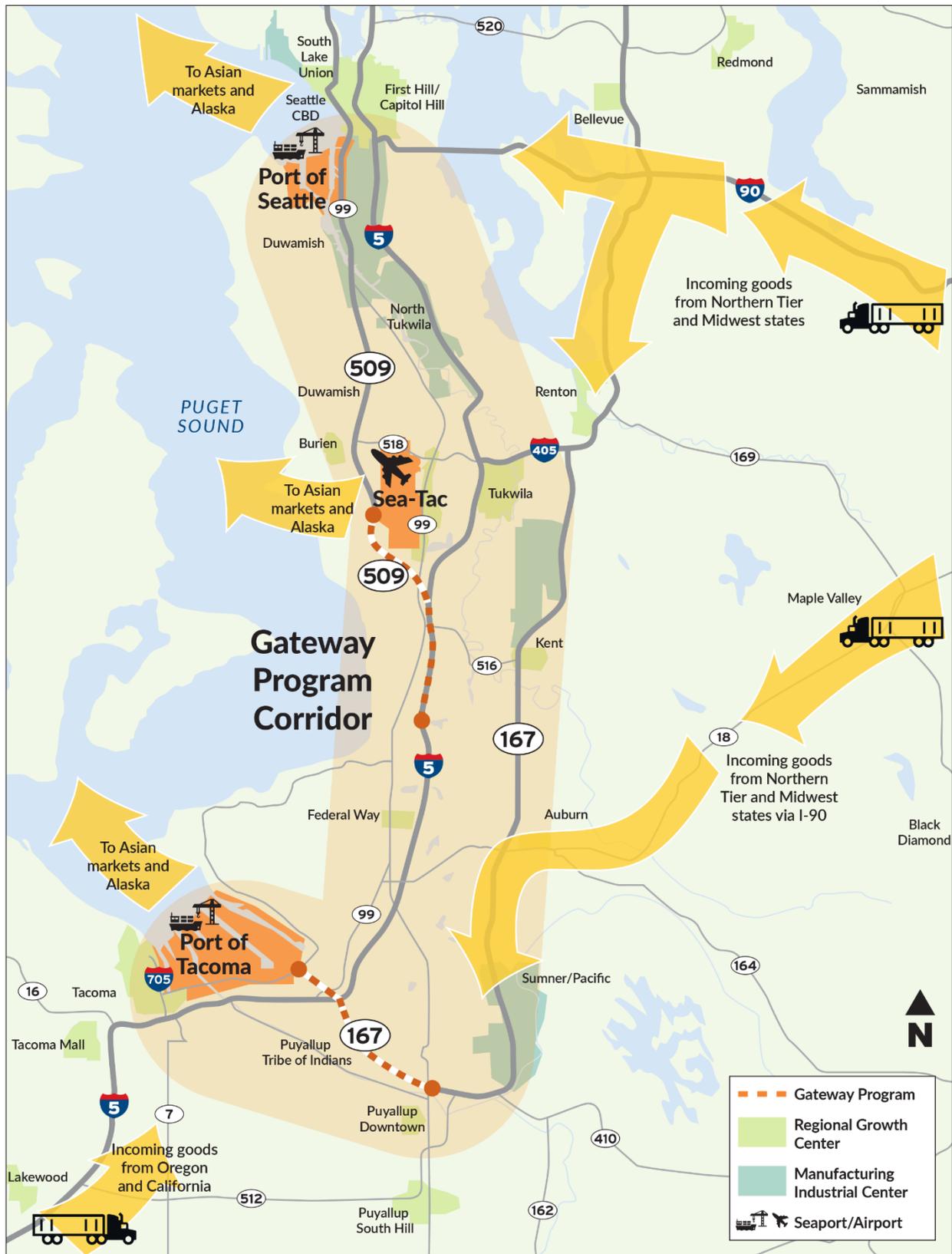
WSDOT completed environmental reviews and is delivering both projects using innovative procurement with construction underway this month. Together and individually, the two projects are cost-effective with a combined net present value (NPV) of \$2.48 B and benefit-cost ratio (BCR) of 3.07 evaluated over 20 years post-completion. They include innovative variable tolling and ITS technologies designed to support future V2X infrastructure for connected and automated vehicles. As tolled roadways, the completed projects can provide sustainable speed and reliability to freight as well as dedicated revenues to cover full lifecycle costs.

Funding the Gateway Program as a network of projects is the most economically-impactful way of delivering two badly-needed, interconnected improvements to the highway network. The planned improvements directly address severe traffic congestion that delays freight entering and leaving the Puget Sound region. Over 95% of the traffic delays for trucks hauling fruit from Eastern Washington, potatoes from Idaho, or grain from Montana heading to Asia markets occurs in the last few miles on congested highways accessing the ports. In direct support of the recent US-China Trade Pact and the USMCA, the Gateway Program will allow goods from across the nation to access international markets more efficiently.

FIGURE 1. FREIGHT WAITING AT THE CURRENT TERMINUS OF SR 167 (LEFT) AND OUTSIDE THE PORT OF TACOMA (RIGHT) WITHOUT THE PUGET SOUND GATEWAY PROGRAM



FIGURE 2. LOCATION MAP OF PUGET SOUND GATEWAY PROGRAM



1.2 Project Description

In 2012, following two decades of project development, WSDOT began an effort to develop an integrated, sustainable approach to completing the SR 167 and SR 509 Completion Projects to relieve congestion and improve access to the Ports of Tacoma and Seattle, and Sea-Tac. Currently, the incomplete freeways dead-end and feed into local streets and arterials. The two projects were combined into the **Puget Sound Gateway Program** because of their similarities. Together the projects complete 12 miles of missing highway system links that offer freight mobility benefits through added capacity and improved connectivity to I-5 and the port facilities (Figures 3 and 4). A link to the Gateway Program video is provided in Figure 5.

FIGURE 3. SR 509 COMPLETION PROJECT



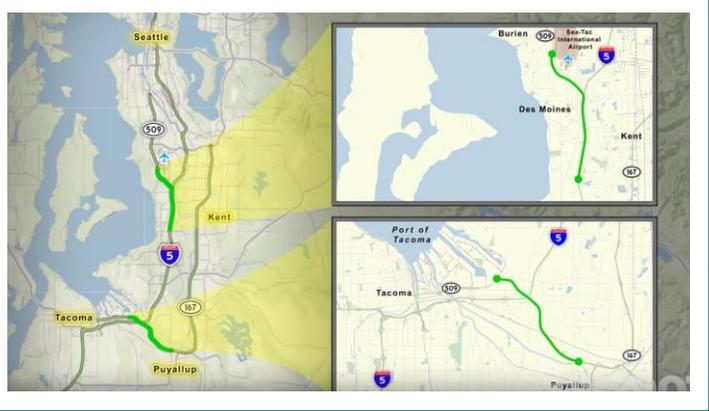
1. South Access to Sea-Tac Airport
2. Lake to Sound Trail Final Segment
3. Early Work: 24th Ave S Bridge
4. Electronic Tolling of SR 509
5. Integrated Design with Sound Transit light rail

FIGURE 4. SR 167 COMPLETION PROJECT



1. Electronic Tolling of SR 167
2. Future Sound Transit light rail
3. Riparian Restoration Program
4. Diverging Diamond Interchange
5. Single Point Urban Interchange

FIGURE 5. GATEWAY PROGRAM VIDEO



The purpose and need for both projects, as stated in their Final Environmental Impact Statements and Environmental Re-evaluation documents, are also similar, as shown in Table 1.

TABLE 1. PURPOSE AND NEED FOR THE SR 167 AND SR 509 COMPLETION PROJECTS

	SR 167 Completion Project ¹	SR 509 Completion Project ²
Purpose	To improve regional highway connections with an extension of SR 167 to serve current and future transportation needs in northern Pierce County and to enhance regional freight mobility and access to the Port of Tacoma .	To improve regional highway connections with an extension of SR 509 to serve current and future transportation needs in southwest King County and to enhance southern access to Sea-Tac Airport .
Need	To create system linkages, accommodate travel demand and capacity needs, and improve intermodal relationships.	
Transportation Challenge the Project Seeks to Address	The SR 167 freeway currently terminates in Puyallup at SR 161 (N Meridian Ave) and does not connect to I-5 and the regional transportation highway system; this leaves a major gap in the system. As a result, local streets and major transportation routes are at or over capacity given current travel demand. This situation is expected to worsen as travel demand for the Port of Tacoma and major roadways increases.	The SR 509 freeway currently terminates at S 188th St and does not connect to the regional transportation highway system; this leaves a major gap in the system. As a result, local streets and major transportation routes like I-5 are at or over capacity given current travel demand. This situation is expected to worsen as travel demand for Sea-Tac Airport and major roadways increases.

1.3 Project History

The *Puget Sound Gateway Program* has been in development since the mid-2000s when the SR 167 and SR 509 Completion Projects were under environmental review. Over the next decade, WSDOT continued moving the corridor completion projects forward through initial environmental approvals, acquiring large amounts of right-of-way and working on preliminary design and tolling and phasing strategies. In 2010, WSDOT completed toll feasibility studies for SR 167 and SR 509 which showed tolling could help fund the projects while also managing traffic volumes and creating an opportunity to phase construction.

In 2010, the Puget Sound Regional Council's (PSRC) [Transportation 2040: The 2040 Metropolitan Transportation Plan](#) prioritized the two highway projects to enhance freight mobility and solidify the Puget Sound region's strategic position as a critical gateway for international trade.³ In 2012, WSDOT briefed legislators, transportation committee members, local elected officials from south King and Pierce counties and the Ports of Seattle and Tacoma to gather input in developing the approach to the [SR 509, I-5 and SR 167 Funding and Phasing Study: Strategic Corridor Design Review](#). In 2013, WSDOT assembled a stakeholder committee consisting of representatives from local jurisdictions along the SR 167 and SR 509 corridors to share technical information and solicit their input on corridor priorities related to phasing. The stakeholder committee endorsed the key principles for the Gateway Program: add capacity strategically, meet the needs of both freight and commuters, provide full freight connectivity and prioritize initial connections to address the highest demand freight movements. Using these principles, the stakeholders agreed upon a phased approach to completing the SR 167 and SR 509 corridors.

As a result of stakeholder engagement, coalitions of business and government unified in support of the Gateway Program. Leaders from the state legislature and Congress, King and Pierce counties, cities, and

¹ WSDOT & FHWA, [Puget Sound Gateway Program-Phase 1 of the SR 167 Completion Project Environmental Re-evaluation](#), Dec. 2018, p. 3.

² WSDOT & FHWA, [Puget Sound Gateway Program-Phase 1 of the SR 509 Completion Project Environmental Re-evaluation](#), Jan. 2018, p. 2.

³ Puget Sound Regional Council, [Transportation 2040: The 2040 Metropolitan Transportation Plan](#), May 2010, p. 27.

Ports of Seattle and Tacoma also rallied behind the Program. With this support, the Washington State Legislature approved the [Connecting Washington Transportation Funding Package \(CWTFP\)](#) in July 2015, investing \$1.86 B in state, toll and local investments in the Gateway Program, the most of any project in the 16-year, \$16 B package. The majority of CWTFP funding comes from an additional 11.9¢ motor fuel tax.

In the eyes of the Washington State Legislature, the SR 509 and the SR 167 Completion Projects are inseparably integrated as the Gateway Program. The CWTFP requires that WSDOT “implement the project’s construction as a single corridor investment” and “develop a coordinated corridor construction and implementation plan for SR 167 and SR 509 in collaboration with affected stakeholders.”⁴ The two projects are functionally linked together via I-5, the West Coast’s economic and mobility backbone, connecting three economic engines — the Ports of Tacoma and Seattle, and Sea-Tac Airport — to key supply chains and rural producers across the Northern Tier and Midwest states.

Since 2015 WSDOT has expended \$122.3 M to complete environmental re-evaluations, conduct preliminary engineering (PE), acquire right-of-way (ROW), and initiate construction on both projects. In 2018, WSDOT submitted to the Washington State Legislature the [Puget Sound Gateway Construction and Implementation Plan](#), which provided a baseline delivery schedule extending over 13 years, and the [Puget Sound Gateway Benefits of Program Acceleration Report](#), which offered options for delivering the Program and its benefits sooner. In 2019, the Legislature demonstrated its continued commitment by passing a bill which provided the Gateway Program with toll and bond authorization, securing the toll revenue needed for the projects and accelerating the program schedule by three years.

In 2016, 2017, and 2019, WSDOT submitted FASTLANE/INFRA grant applications for the Gateway Program. Today, in spite of numerous other worthy projects that would benefit from federal aid, WSDOT is now only submitting this one INFRA grant request to USDOT for the Program.

2 Project Location

The [Puget Sound Gateway Program](#) is located in the Pacific Northwest region in Washington’s 7th, 8th, 9th, and 10th Congressional Districts. Figure 2 shows how it provides “last mile” and system network connections to I-5, the West Coast’s economic lifeline from Mexico to Canada, along with connections to Interstate 90 (I-90) via SR 18 or I-405, serving Northern Tier and Midwest states.

Project Coordinates:

SR 167 Completion Project: Latitude 47.205° N, Longitude -122.294° W to Latitude 47.247° N, Longitude -122.386° W

SR 509 Completion Project: Latitude 47.358° N, Longitude -122.297° W to Latitude 47.434° N, Longitude -122.296° W

The SR 167 Completion Project in Pierce County will build a new two-mile highway connecting I-5 to the Port of Tacoma, and the missing four miles of SR 167 between its current terminus at SR 161 (Meridian Ave) and I-5. The Project is wholly within Pierce County and predominantly within the Puyallup Tribe of Indians’ reservation boundaries as well as in the cities of Tacoma, Fife, Milton, Edgewood and Puyallup, and Congressional Districts 8, 9 and 10.

The SR 509 Completion Project in King County will build the missing two miles of SR 509 from S 188th St to I-5, a new interchange for accessing Sea-Tac Airport from the south at 24th Ave S, as well as four miles of improvements on I-5. The SR 509 Completion Project is wholly within King County in the cities of Burien, SeaTac, Des Moines, and Kent, and in Congressional Districts 7 and 9.

The Gateway Program includes interchanges accessing four future light rail stations and new segments of regional trail projects, and is in the Seattle Urbanized Area, with a population of 3,059,393.⁵

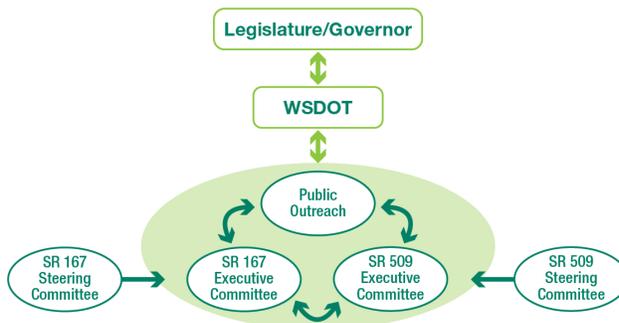
⁴ [SB 5988](#), State of Washington 64th Legislature, 2015 Regular Session, p.8

⁵ <https://www.transportation.gov/buildamerica/infagrants/urbanized-area>

3 Project Parties

WSDOT (DUNS: 8088839950000) serves as the sponsoring agency and is responsible for delivery of the **Puget Sound Gateway Program**, which represents a broad, united coalition of funding partners and project stake-holders. This coalition of 14 cities, two counties and two port districts has, over the past two decades, been instrumental in advancing the Gateway Program. The Puyallup Tribe of Indians strongly supports completing SR 167, of which 90% is located within their reservation boundaries.

FIGURE 6. PUGET SOUND GATEWAY PROGRAM DECISION-MAKING PROCESS



The wide range of support from local, regional, state, and federal officials, as well as private sector partners, is evident in the letters of support for the Gateway Program provided in **Appendix B - Attachment 3**. In addition to local jurisdictions and businesses, industry organizations provided letters, including the National Association of Wheat Growers, the Coalition for America's Gateways and Trade Corridors (CAGTC), the Washington Apple Commission, the Washington State Potato Commission, the Northwest Horticultural Council, the Washington Farm Bureau, and the Washington Trucking Association, among others. The Ports of Tacoma and Seattle have agreed to invest \$60 M into the Program.

The SR 167 and SR 509 Executive and Steering Committees partner with WSDOT to advise the agency on policy and design decisions. Figure 6 shows the Committees' roles in decision-making for the Gateway Program, which has resulted in collaboration and buy-in from a diverse group of stakeholders. The Executive Committee is comprised of 26 cities, counties, tribes, and public agencies, along with representatives from WSDOT, FHWA, Freight Mobility Strategic Investment Board, Washington State Transportation Commission, Pierce Transit, and Sound Transit. The Steering Committee is composed of senior staff from the agencies and jurisdictions, as well as business and freight community representatives. Executive and Steering Committee meeting materials are available at the SR 167 and SR 509 project websites.

4 Grant Funds, Sources and Uses of Project Funds

The requested \$98.4 M in federal INFRA grant funds would comprise only 5.2% of \$1.91 B in future eligible costs, closing the gap in the overall **Puget Sound Gateway Program** \$2.03 B expenditure plan (Table 2). Combining the INFRA request with \$16 M in locally-procured federal funding awarded by the PSRC, total federal funding would be \$114.4 M, or 6% of future eligible costs, matching 94% in non-federal sources.

Through the CWTFP, the Legislature has provided WSDOT \$1.566 B in new state funds, coupling this contribution to a requirement that an additional \$130 M would come from of local stakeholder contributions. A [Local Funding and Phasing Memorandum of Understanding](#) (MOU) executed in June 2018 stipulates that \$20 M of the \$130 M local contribution is to be sourced from a national competitive federal grant program and is included as part of this INFRA grant request. Another \$8 M has been secured as federal funding from the PSRC via locally awarded grants, with \$8 M more planned. The remaining \$94 M is committed locally, including \$60 M from the two ports. In 2019, the Legislature passed a bill formally providing the Gateway Program with toll and bond authorization.⁶ Originally targeted at \$180 M, an updated toll traffic and revenue study indicates that tolls have the capacity to generate \$251 M of net bond proceeds (funding) in FY 2027. With another \$6.2 M from other state sources, the Gateway Program has lined up \$1.93 B out of the \$2.03 B

⁶ [Engrossed Senate Substitute Bill \(ESSB\) 5825](#)

program, leaving a gap of \$98.4 M. **Receipt of a \$98.4 M INFRA grant would provide the following beneficial outcomes:**

- **Closes the funding gap** — The requested \$98.4 M INFRA grant will complete the funding for these “missing link” corridor completion projects. Without an INFRA grant, the Gateway Program cannot be completed, and as a result there would be no toll revenues to repay borrowed funds.
- **Accelerates program delivery** — The Legislature authorized the advancement of \$128.9 M in CWTFP state funds by up to four years, contingent upon WSDOT receiving a \$98.4 M INFRA grant. Collectively, this allows both SR 509 and SR 167 to be completed and operational in FY 2028, three years earlier than originally planned. Schedule acceleration also generates \$43 M in construction cost inflation savings.
- **Requires only minimal federal assistance** — A \$98.4 M INFRA grant represents just 5% of future eligible costs, with the total federal share at \$114.4 M, or 6% of future eligible costs. With 94% of the funding in place, WSDOT and local partners have demonstrated their commitment to this program.

4.1 Previously Incurred Expenses

The period of previously incurred project costs extends from state fiscal year (FY) 2016⁷ through mid-FY 2020. FY 2016 marks the date at which the legislature’s CWTFP went into effect, providing a clear dividing line between the new combined Gateway Program delivery and the planning, environmental, and ROW acquisition activities previously completed separately by corridor. Between July 1, 2015 and December 31, 2019, Gateway Program expenditures totaled \$122.1 M, with \$41.4 M for PE (including re-evaluation of environmental reviews), \$72.3 M for ROW acquisition, and \$8.5 M for construction, as shown in Table 2.

TABLE 2. PUGET SOUND GATEWAY PROGRAM COST SUMMARY

Cost Category	Previously Incurred Costs	Future Eligible Costs	Program Total
Prelim. Engineering & Design	\$41.4 M	\$88.1 M	\$129.5 M
Right-of-Way	\$72.3 M	\$69.2 M	\$141.5 M
Construction	\$8.5 M	\$1,751.7 M	\$1,760.1 M
TOTAL	\$122.1 M (6%)	\$1,909.0 M (94%)	\$2,031.1 M (100%)

4.2 Future Eligible Costs

Future eligible costs total \$1.91 B in year of expenditure (YOE) dollars, with \$88.1 M for PE, \$69.2 M for ROW, and \$1.75 B for construction (Table 2), and are split 51% for SR 167 and 49% for SR 509 plus I-5. Table 3 shows the distribution of funding sources allocated to previously incurred and future eligible costs.

TABLE 3. PUGET SOUND GATEWAY PROGRAM FUNDING SOURCE SUMMARY

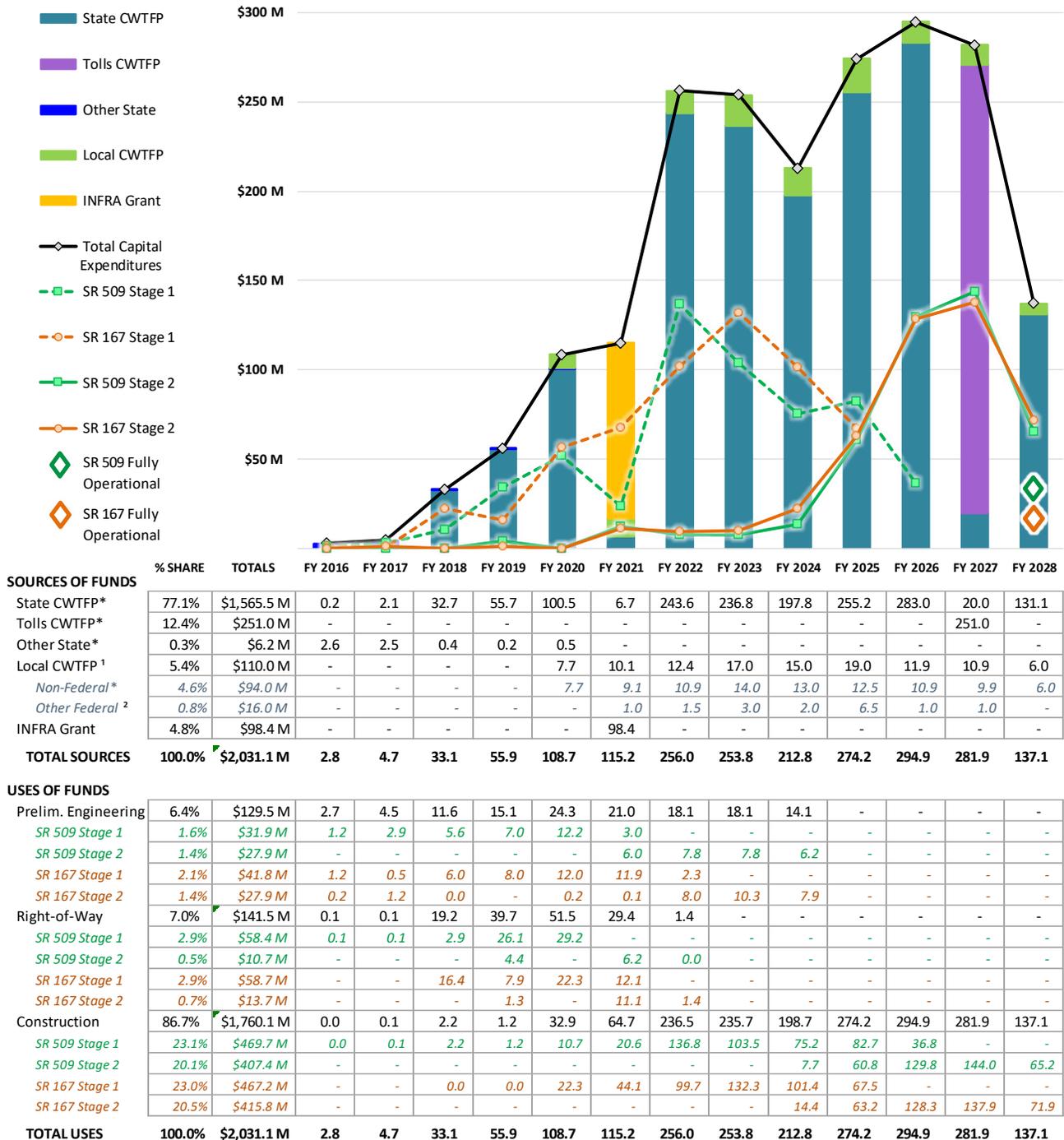
Funding Source	Funding Category	Previously Incurred Costs	Future Eligible Costs	Program Total
State CWTFP	Non-Federal	\$116.3 M	\$1,449.2 M	\$1,565.5 M
Tolls CWTFP	Non-Federal		\$251.0 M	\$251.0 M
Other State	Non-Federal	\$5.9 M	\$0.4 M	\$6.2 M
Local CWTFP		–	\$110.0 M	\$110.0 M
	<i>Non-Federal</i>		<i>94.0 M</i>	<i>94.0 M</i>
	<i>Other Federal</i>		<i>16.0 M</i>	<i>16.0 M</i>
INFRA Grant	INFRA	–	\$98.4 M	\$98.4 M
TOTAL		\$122.1 M (6%)	\$1,909.0 M (94%)	\$2,031.1 M (100%)
<i>INFRA Share of Total</i>		–	5.2%	4.8%
<i>Overall Federal Share of Total</i>		–	6.0%	5.6%

⁷ State fiscal year 2016 runs from July 1, 2015 through June 30, 2016.

4.3 Budget and Spending Plan

The **Puget Sound Gateway Program** has \$1.933 B in funding, with \$1.566 B in CWTFP state funds available in programmed amounts for each two-year biennium through the biennium ending in FY 2029 that could be deferred but cannot be advanced earlier in time. Subject to these funding constraints, WSDOT has optimized the phasing and cash flow as shown in Figure 7, which summarizes the \$2.031 B Gateway Program’s planned annual sources of funds by type and uses of funds by project and stage.

FIGURE 7. PUGET SOUND GATEWAY PROGRAM PROJECTED SOURCES AND USES OF FUNDS



* Non-Federal funding ¹ \$110 M in local funding is net of \$20 M assumed within the INFRA grant request ² \$8 M secured out of \$16 M planned PSRC MPO grants (federal source)

WSDOT completed its third probabilistic risk-based review in late 2019 to update and verify the accuracy and reasonableness of current costs and schedules, and to identify and monitor project uncertainties. WSDOT's Cost Estimation Validation Process (CEVP®) includes previously-incurred expenses and factors in risk contingency into the total project cost and schedule and will continue to be updated at key points during project development.

4.4 Operating Sources and Uses

In providing state funding under the CWTFP, the Washington State Legislature intended for the Gateway Program's two new highway segments to be tolled with a funding target set at \$180 M in 2015. In 2019, the Legislature passed a bill authorizing tolling of the Gateway facilities and providing bond authorization.⁸ Tolls provide a sustainable means to pay for routine annual operations and maintenance (O&M) as well as periodic capital repair and replacement (R&R). An updated toll traffic and revenue study completed in 2018, confirmed that tolls have the capacity to fully fund future O&M and R&R expenditures in addition to generating \$251 M in net bond proceeds (funding) for construction in FY 2027.

5 Merit Criteria

5.1 Support for National and Regional Economic Vitality

The **Puget Sound Gateway Program** is needed to support the national and regional economies. By providing direct freeway routes that reduce travel times and improve safety and reliability, the Program improves the movement of goods into and out of the NWSA and Sea-Tac Airport. The movement of cargo through the Puget Sound's marine and air ports generates business revenue to local and national firms providing vessel and cargo handling services at the marine and air terminals, as well as rural agricultural producers in the Puget Sound and Midwest states.

The State of Washington is one of the most trade-dependent state in the nation, with 40% of all jobs tied to trade, including hundreds of thousands in both rural and urban areas who work for importers and exporters that use NWSA and Sea-Tac Airport cargo facilities.⁹ The Seattle-Tacoma-Bellevue metropolitan area alone is now the 4th largest goods exporter among U.S. metro areas shipping out \$59.7 B in goods in 2018, a 69% increase since 2010.¹⁰ Table 4 shows the economic impact of the NWSA and Sea-Tac Airport cargo facilities, which support over 178,000 direct and indirect jobs and generate \$35 B in business revenue.

As Table 4 provides, NWSA and Sea-Tac Airport exported nearly 11 million metric tons of cargo valued at over \$24 B in 2019. These facilities represent critical infrastructure for the nation's agricultural industry and the rural communities. In fact, according to the U.S. Department of Agriculture, the NWSA is the second largest port in the country as measured by agricultural trade tonnage.¹¹ The State of Washington's \$49 B agriculture and food-manufacturing sector is a cornerstone of its economy primarily in rural communities in eastern Washington.¹² More than \$15.1 B in food and agricultural products were exported through NWSA ports in 2013, the third largest value for any state in the U.S. The NWSA is the nation's leading export gateway

⁸ [Engrossed Senate Substitute Bill \(ESSB\) 5825](#).

⁹ U.S. Senate Committee on Commerce, Science and Transportation Subcommittee on Transportation and Safety, "Building Infrastructure in America: Overview of the Build America Bureau and the U.S. Department of Transportation Rural Initiatives", [Testimony of The Honorable John McCarthy, Port of Tacoma Commission President and Co-Chair of The Northwest Seaport Alliance](#), January 28, 2020, p. 1.

¹⁰ U.S. Department of Commerce, International Trade Administration, Office of Trade and Economic Analysis, Industry and Analysis, [Seattle-Tacoma-Bellevue, WA Merchandise Exports](#), October 2019.

¹¹ U.S. Senate Committee on Commerce, Science and Transportation Subcommittee on Transportation and Safety, "Building Infrastructure in America: Overview of the Build America Bureau and the U.S. Department of Transportation Rural Initiatives", [Testimony of The Honorable John McCarthy, Port of Tacoma Commission President and Co-Chair of The Northwest Seaport Alliance](#), January 28, 2020, p. 2.

¹² WSDOT, [2017 Washington State Freight System Plan](#), p. 6.

for refrigerated agriculture products, exporting 186,400 twenty-foot equivalent units (TEUs) in 2018 and representing nearly 20% of national volumes. Washington’s potato industry relies on NWSA seaport facilities to ship 70% of the 10 billion pounds of potatoes produced that are exported.¹³ Cherries produced in rural Washington rely on Sea-Tac for fast export to international markets with 17,451 metric tons reported in 2019 worth a declared value of \$115.9 M.¹⁴

TABLE 4. ECONOMIC IMPACT OF SEA-TAC AIRPORT AND THE NORTHWEST SEAPORT ALLIANCE (2017)

	NWSA	Sea-Tac Airport Cargo	TOTAL
Jobs Supported (2017)	58,400 jobs, including 20,100 direct jobs (2017)	119,700 jobs (2019)	178,100 jobs
Business Revenue (2017)	\$12.4 B (2017)	\$22.7 B (2019)	\$35.1 B
State Taxes Generated (2017)	\$135.9 M (2017)	\$521 M (2019)	\$656.9 M
Labor Income (2017)	\$4.0 B (2017)	\$5.5 B (2019)	\$9.5 B
National Ranking (2018)	4 th largest container gateway in North America	19 th largest U.S. air cargo gateway by tonnage	--
Export Cargo Handled (2019)	Over 10.5 million metric tons of containerized cargo valued at \$12.4 B	74,633 metric tons of air cargo valued at \$11.8 B	Nearly 10.6 million metric tons of cargo valued at \$24.2 B
Top Export Commodities	Agricultural products (e.g. oil seeds, grain, seed, fruits, plants), industrial machinery, and computers	Computers, aircraft engines & parts, medical/surgical apparatus, immunological products, cherries & seafood	--

Sources: [NWSA Economic Impact](#), [PSRC Freight Work Program](#), and Sea-Tac Airport 2019 Year-End Air Cargo Fact Sheet (dated 2/5/2020).

The Puget Sound ports serve not just the Pacific Northwest, but also the entire nation. Nearly 60% of the NWSA’s containerized import volumes are bound for the Midwest and other destinations outside the Pacific Northwest. The NWSA exports 8% and imports 26% of Nebraska’s containerized waterborne cargo. It also handles at least 10% of Illinois’ top ten containerized waterborne imports, about 90% of containerized cargo from Montana, half the containerized exports from Oregon and Idaho, and at least 20% from Minnesota, the Dakotas, and Iowa. Most U.S. soybeans are grown in the Midwest and 23% of all U.S. soybean exports including those from Nebraska and Illinois are shipped through bulk and container terminals in the Pacific Northwest. However, of the costs of shipping to Asia, as much as 40% is moving it from the packing facility to the port itself.¹⁵

Exports moving through the NWSA and Sea-Tac are constrained by congested freight highway infrastructure. Given the relatively low margins for agricultural goods, small increases in cost have serious implications for the future of farmers in every corner of the country. NWSA’s main competitors are the nearby Canadian ports of Vancouver and Prince Rupert, which in recent years have aggressively targeted U.S.-bound cargo with substantial financial and policy support from the government of Canada. In the past two years the government

¹³ U.S. Senate Committee on Commerce, Science and Transportation Subcommittee on Transportation and Safety, “Building Infrastructure in America: Overview of the Build America Bureau and the U.S. Department of Transportation Rural Initiatives”, [Testimony of The Honorable John McCarthy, Port of Tacoma Commission President and Co-Chair of The Northwest Seaport Alliance](#), January 28, 2020, p. 2.

¹⁴ Sea-Tac Airport, 2019.

¹⁵ U.S. Senate Committee on Commerce, Science and Transportation Subcommittee on Transportation and Safety, “Building Infrastructure in America: Overview of the Build America Bureau and the U.S. Department of Transportation Rural Initiatives”, [Testimony of The Honorable John McCarthy, Port of Tacoma Commission President and Co-Chair of The Northwest Seaport Alliance](#), January 28, 2020, pp. 2-3.

of Canada awarded \$US 384 M to the ports of Vancouver and Prince Rupert alone for projects that support goods movement through those ports. Canadian federal investment in their trade gateways and highway corridors that connect the ports to population centers in the Canadian and U.S. heartland now offer an efficient and lower-cost alternative to shipping through NWSA, which has lost 15% of its market share to the British Columbia ports since 2007.¹⁶ Meanwhile, the Port of Tacoma is left behind as the only significant port on the west coast, including Canada, which does not have access via an expressway.

WSDOT is a member of the [Great Northern Corridor Coalition](#), a multi-state, multimodal coalition representing eight states and over 38 million Americans. The Coalition has helped to create a collective identification and prioritization of corridor-enhancing projects like the Gateway Program that contribute to the seamless movement of freight and people across the U.S. The Gateway Program serves the Great Northern Corridor, an east-west artery from Chicago through the upper plains to the ports in Washington that links the nation's supply chain for agriculture, energy products, raw materials and finished goods in the Coalition's 8 states and provides a vital link for global trade.



In order to maximize the competitiveness of the U.S. and the Puget Sound air and marine facilities, reliable freight highway corridors are needed to and from the Sea-Tac Airport and NWSA marine ports. Freight-dependent industries are currently hindered by congestion and lack of alternatives to I-5 to reach the NWSA facilities and Sea-Tac Airport. Table 5 displays total U.S. exports and imports that moved through the two marine ports and Sea-Tac Airport in 2018. Over 91% of exports by value and 84% by tonnage were transported from U.S. origins to area ports by truck. These highway freight movements to and from the NWSA marine ports and Sea-Tac Airport are currently forced to utilize congested roads, including local roadways with at-grade intersections to reach the ports.

By completing two missing links that connect the state's two largest marine ports and largest airport with I-5, and ultimately, I-90, the [Puget Sound Gateway Program](#) will relieve "last mile" congestion for the cargo destined for the

TABLE 5. U.S. TRADE THROUGH SEATTLE PORTS BY MODE IN 2018

	Exports		Imports	
	Value	Tons	Value	Tons
Truck / Hwy	\$52.9 B	18.7 M	\$29.7 B	10.4 M
All Modes	\$57.8 B	22.3 M	\$36.0 B	14.2 M

Source: Federal Highway Administration Freight Analysis Framework (FAF)

¹⁶ Ibid., pp.3-4.

NWSA marine ports and Sea-Tac Airport. These new SR 167 and SR 509 highway segments will provide direct access into and out of I-5 and these ports, producing many benefits as detailed in this INFRA grant application’s benefit-cost analysis (BCA).

5.1.1 Benefit-Cost Analysis

The accompanying BCA shows the *Puget Sound Gateway Program* to be highly cost-effective, as shown in Table 6 and in **Appendix A - Attachment 2**. The BCA found that the Program will generate an estimated \$3.67 B in present-value benefits (2018 dollars, discounted at 7%) over the first 20 years of its useful life beginning with the first full year of operations (FY 2029), with an associated cost of \$1.20 B over the same period, resulting in a net-present value (NPV) of \$2.48 B and a benefit-cost ratio (BCR) of 3.07. The net benefits are even greater for a 30-year post-completion evaluation period, which may be more appropriate for long-lived assets such as these two new “greenfield” roadway segments that complete each corridor.¹⁷

TABLE 6. BENEFIT-COST ANALYSIS RESULTS (7% REAL DISCOUNT RATE)

Case	20-Year Evaluation Period		30-Year Evaluation Period	
	Net Present Value (2018 \$)	Benefit-Cost Ratio	Net Present Value (2018 \$)	Benefit-Cost Ratio
<i>SR 509 Completion Project</i>	\$1.56 B	3.64	\$2.12 B	4.60
<i>SR 167 Completion Project</i>	\$0.92 B	2.51	\$1.31 B	3.15
Program Total	\$2.48 B	3.07	\$3.43 B	3.86

Source: WSP analysis with present value discounting at a real rate of 7%; corridor values may not sum to program totals due to rounding errors.

The greatest benefits found through the BCA are related to the following outcomes:

Eliminating bottlenecks in the freight supply chain

The BCA performed for the Gateway Program in connection with this INFRA application quantified its likely impacts on travel times throughout the region, finding that auto and truck users would realize nearly \$3.12 B in travel time savings over the 20-year operating period following completion of the Gateway Program. This distributes more than \$192 M in savings for truck users and approximately \$2.93 B for auto users when present-value discounted at 7%. This economic benefit is the result of an estimated 717 M person-hours of travel time savings over the same period. For a 30-year operating period post-completion, time savings increases to 1.3 B person-hours saved, with a discounted present value of \$4.03 B.

The I-5 corridor has the highest levels of congestion in Washington with 234,000 annual average daily trips near Sea-Tac where I-5 meets Interstate 405 (I-405) / SR 518.¹⁸ Truck volumes on SR 509, I-5, and SR 167 are expected to increase by approximately 2% per year to 46,600 trucks per day in 2020 due to population and employment growth and economic development in the local area.¹⁹ At this rate, truck traffic is increasing faster than passenger-vehicle traffic, with truck bottlenecks more likely near the Ports of Seattle and Tacoma. In Tacoma, where the state’s highest daily truck traffic occurs, average daily truck volumes make up 11% of average daily traffic volumes, or 21,353 trucks in 2018.²⁰

This situation is expected to worsen due to a 35% projected rise in truck freight tonnage moved on the statewide roadway network by 2035.²¹ An estimated 44% of regional truck trips generated by the NWSA are

¹⁷ USDOT, [Benefit-Cost Analysis Guidance for Discretionary Grant Programs](#), January 2020, p. 11

¹⁸ WSDOT, [2016 Annual Traffic Report](#), p. 42

¹⁹ WSDOT, [SR 509: Corridor Completion/I-5/South Access Road FEIS](#), p. 1-12

²⁰ WSDOT, [2016 Annual Traffic Report](#) and [Traffic GeoPortal](#) (MP 131.22, 11,000 increase in ADT).

²¹ WSDOT, [2017 Washington State Freight System Plan](#), p. 31.

destined for these warehouses and distribution centers in the SR 167 corridor.²² By 2025, the warehouses in the region are expected to experience an additional 3,210 daily trucks to/from the NWSA, with the Port of Tacoma accounting for 82% of that growth.

Schedule reliability for trucks will, therefore, worsen if trucks continue to be forced to use local streets to reach the Port of Tacoma. The SR 167 Completion Project will allow truck traffic to directly travel from the Port of Tacoma to the existing SR 167 corridor and warehousing districts, improving corridor travel times by up to 30-40%.²³ It will also improve connectivity between I-5 and SR 167, making it easier for traffic to shift between the two corridors. SR 167 offers an alternate route to I-5 when incidents occur. Without the SR 167 Completion Project, drivers have few, if any, freeway alternatives to relieve pressure on the system.

The SR 509 Completion Project will eliminate freight highway bottlenecks and accommodate a southern access point to Sea-Tac Airport as well as southern access to the Port of Seattle. It will ease congestion on I-5, and decrease congestion on other north/south freeways and arterial corridors within the Project area (SR 599, SR 518, SR 99, and Des Moines Memorial Drive) by diverting the more than 30,000 daily trips currently made on these facilities to the SR 509 corridor. In addition, the SR 509 Completion Project will provide congestion relief for the more than 9,000 trucks who currently travel on I-5 or local roads and highways in the area and would use the completed SR 509 highway once it is extended.²⁴

Achieving significant reductions in traffic fatalities and serious injuries on the transportation system

The BCA for this INFRA application shows that the *Puget Sound Gateway Program* will prevent 12,488 motor vehicle incidents (i.e., fatality-causing, injury-causing and no-injury crashes) relative to the no-build scenario, accounting for approximately \$207 M in quantified safety benefits over 20 years of the Program's useful life, in 2018 dollars using a 7% discount rate. Without the improvements, the occurrence of collisions is expected to increase as congestion worsens. Completing the SR 167 and SR 509 limited access facilities will attract a significant number of trips away from congested facilities with high numbers of conflict points.

Without the SR 167 Completion Project, trucks travelling to and from the Port of Tacoma will continue to use local streets (N Meridian and River Rd, Valley Ave E and 54th Ave E) to access the Port (Figure 8). Trucks are involved in 70% of all crashes in the vicinity of the Port of Tacoma, nearly twice the countywide average. Accident rates on River Road, the current non-freeway segment of SR 167, are 20% to 70% higher than statewide averages for similar highways and will worsen over time without the SR 167 Completion Project.²⁵

From 2013 to 2017, a total of 289 collisions occurred on I-5 between Mileposts 150 to 151.22 near the SR 509 alignment. With the SR 509 Completion Project, truck and vehicle trips will be removed from the congested sections

FIGURE 8. 2018 CRASH SCENE AT RIVER RD (SR 167)



Source: Tacoma Firefighters

²²Berk & Associates, *An Economic Assessment of the SR 167 Extension Project*, April 2007, pp. 3, 24)

²³ WSDOT, *SR 167 NEPA Re-Evaluation Appendices, Transportation Discipline Report for NEPA Re-Evaluation of Phase 1, SR 167 Completion Project*, p. 48

²⁴ WSDOT, *Freight Mobility Study – SR 509 South Access Road Project*, CH2M Hill Engineers with Heffron Transportation, K2 & Associates, December 21, 1998, pp. ES-3 – ES-5.

²⁵ WSDOT, *SR 167 Puyallup to SR 509 Tier II FEIS*, Introduction, p. 1-2.

of SR 518 and I-5 which will improve operations on those facilities and reduce the prevalence of congestion-related crashes, the most frequent crash types present on both facilities. The new SR 509 limited access corridor will also greatly reduce conflict points and crash exposure for vehicles and pedestrians from local streets such as S. 200th St., which experienced a total of 75 collisions between the I-5 interchange and 28th Ave S. for the 2013-2017 analysis period.

5.2 Leveraging of Federal Funding

WSDOT is requesting \$98.4 M in INFRA grant funds to fill the funding gap in the **Puget Sound Gateway Program**. Including another \$16 M in locally-procured federal funding awarded by the PSRC, total federal funding would be \$114.4 M. To minimize the size of the INFRA grant request, WSDOT has maximized the non-federal sources of Gateway Program funding with \$1.92 B in state, toll, and non-federal local dollars. With help from the Legislature, WSDOT has optimized project phasing to realize over \$40 M in inflation savings. The requested INFRA grant would **match 94% in other funding sources** to bridge the current funding gap and allow both SR 509 and SR 167 to be completed and operational in FY 2028, three years earlier than originally budgeted. There are no constraints limiting the use of non-federal funding contributions, other than the schedule by which the Legislature makes CWTFP state funds available.

5.3 Potential for Innovation

WSDOT has a well-established track record of pursuing innovation in technology, project delivery, and project financing, especially for major projects such as the **Puget Sound Gateway Program**.

5.3.1 Innovation Area #1: Technology

Variable Tolling to Manage Congestion

Open road tolling with tolls on all lanes using rates that vary by time of day or travel direction is a recent innovation in congestion management and safety enhancement as demonstrated on WSDOT's SR 520 (Figure 9) under the USDOT Urban Partnership Agreement. WSDOT will manage use of the roadway with toll rates that vary on a schedule by time of day to provide for speed and reliability of freight flows. Higher tolls will be charged during times of peak demand to maintain speed and throughput, thus minimizing congestion. Lower tolls will be charged at off-peak times, offering an incentive for motorists to switch their road use from peak to lower demand times of day. Using the latest in tolling technology, variable tolls will be collected electronically at highway speeds using *Good To Go!* transponders or photos of license plates.

FIGURE 9. VARIABLE TOLLING ON WSDOT'S SR 520



In 2019, WSDOT opened the SR 99 tunnel in Seattle with a similar variable tolling operation. The same innovative and proven toll technologies will be deployed on the Gateway corridors, which will provide consistent and reliable trips, especially benefitting trucks serving the Ports of Tacoma and Seattle and all traffic accessing Sea-Tac Airport from the south.

ITS Infrastructure to be Future-Ready

In its agreements with construction contractors and technology vendors as part of the all-electronic, open road tolling of the SR 509 and SR 167 Completion Projects, WSDOT will specify the best-available materials technology and adopt the latest standards to maximize future readiness. WSDOT will install advanced ITS

systems as part of the Gateway Program, including fiber optic network cable, conduit network expansion, data communications equipment, data stations, monitoring cameras, ramp meters, variable message signs (VMS), and overhead toll collection tag readers and cameras. VMS will display travel time information for major routes and destinations enabling motorists to take their most efficient route.

For every minute a freeway travel lane is blocked by an incident during peak travel period, four to ten minutes of travel delay result after the incident is cleared. WSDOT uses camera and flow data to deploy incident response teams (IRT) to incidents that block lanes, ramps and shoulders.

By directly deploying the IRT from the Traffic Management Center (Figure 10), WSDOT reduces incident investigation and clean-up time after only a few minutes on the scene. This rapid response minimizes lane blockage time, and reduces traffic backups, secondary collisions, and wasted fuel use by vehicles stopped in traffic, thereby increasing travel time reliability. WSDOT will increase the IRT by at least two vehicles and assign them to the Gateway corridors during peak hours, further reducing the incident response time.

The planned ITS infrastructure, which includes the broadband communications network to support it, will be designed to support future V2X infrastructure deployment, including bandwidth sizing, locations for radio placement, and sizing of cabinets and other supporting infrastructure. Pavement markings and signage will reflect the latest research and standards for machine-readability to support ease of automated vehicle use of the corridors. Information about toll rates and travel times to the two seaports and the airport, including data collected from in-roadway hardware, will be broadcast in real time, allowing mobile apps, navigation software, and connected vehicles to use this information to optimize route choices and travel decisions.

FIGURE 10. WSDOT TRAFFIC MANAGEMENT CENTER DEPLOYS IRT



5.3.2 Innovation Area #2: Project Delivery

In 2018, at the direction of the Legislature, WSDOT analyzed cost savings, economic benefits, and schedule advancement. The [Puget Sound Gateway Program: Benefits of Program Acceleration Report](#) provides the results of this analysis, exploring financing and delivery options for completing the **Puget Sound Gateway Program** ahead of the current schedule in order to deliver the mobility and economic benefits sooner. In 2019, the Legislature directed WSDOT to accelerate program delivery by three years, authorized tolling, and provided bond authorization, all of which are contingent upon receiving the requested INFRA grant of \$98.4 M.²⁶

Program acceleration delivers:

- ✓ \$43 M in program inflation cost savings
- ✓ 33 M person hours saved
- ✓ 271 M VMT saved
- ✓ Net economic benefits of \$275 M

Contracting & Procurement

The Gateway Program is being delivered through **Design-Build** (D-B) procurement, in alignment with FHWA's Every Day Counts **EDC-2 Innovations**. Combined with **Lump Sum Bidding**, D-B provides early price knowledge and certainty. WSDOT is implementing a **Best Value Procurement** evaluation process, balancing proposed innovations with costs to achieve the best value (price and technical score) for the public dollar. WSDOT also uses **Alternative Technical Concepts** (EDC-2) in the D-B process to promote contractor and designer innovations, as well as savings and benefits to WSDOT from successful innovations. Further, WSDOT has implemented **Practical Design Workshops** at the beginning of the D-B contracts to optimize project elements, using stipends to acquire the rights to bidders' innovative ideas and allowing WSDOT to include bidders' innovations in the ultimate contract.

²⁶ [Engrossed Senate Substitute Bill \(ESSB\) 5825](#).

To support the **Best Value Procurement with Lump Sum Bidding**, WSDOT uses the Cost Estimate Validation Process ([CEVP®](#)), which aligns with FHWA Cost Estimate Review (CER) guidance. On an annual basis, WSDOT completes a probabilistic risk-based review that verifies accuracy and reasonableness of current costs and schedules and identifies project uncertainties. As testament to the value of the CEVP® process, the successful contractor's bid price for the Gateway Program's first D-B contract (awarded in 2019) was within 5% of the CEVP® estimate.

Innovative Permitting

The Gateway Program completed the National Environmental Policy Act (NEPA) re-evaluation process. Beyond NEPA, the State of Washington's process for environmental review used by the Program provides a potential model for environmental review and permitting for other large projects.

The State Legislature mandates WSDOT to "streamline the permitting process by developing and maintaining positive relationships with the regulatory agencies and the Indian tribes."²⁷ As such, the State's policy is to "expedite project delivery and routine maintenance activities through the use of programmatic agreements and permits where possible and seek new opportunities to eliminate duplicative processes."²⁸ The law directs WSDOT to streamline permitting by implementing "a multiagency permit program ...consisting of appropriate regulatory agency staff with oversight and management from [WSDOT]."²⁹

WSDOT implemented the laws through standard practices utilized across the agency. The State's [Joint Aquatic Resources Permit Application](#) process was developed by federal and state permitting agencies to allow applicants in Washington to submit one permit application to trigger concurrent permit review periods establishing a "one-stop-shop" for multiple permits. Permittees also have available to them the [Liaison Program](#), which provides staff at state and federal resource permitting (U.S. Army Corps of Engineers, Washington Department of Ecology) and Endangered Species Act agencies (United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration) dedicated to expediting portions of the environmental review for WSDOT transportation projects and reviewing / negotiating complex mitigation compensation.

Every Day Counts Initiative

WSDOT plans to use [Every Day Counts Initiative](#) technologies and innovations to shorten and enhance project delivery and meet an accelerated project delivery schedule that will be facilitated through receipt of an INFRA grant (two years for the SR 167 Completion Project and three years for the SR 509 Completion Project). Very early in the NEPA re-evaluation process, WSDOT clarified the scope of preliminary design, developing early design refinements in alignment with [FHWA Order 6640.1A](#). The NEPA re-evaluation refined the original project components in light of more recent traffic forecasts and the decision to implement tolling on both corridors, following WSDOT's guidance for [Implementing Quality Environmental Documents](#). This promoted rapid review and processing of the re-evaluation package. To support the re-evaluation, both projects developed preliminary design work to set the projects' footprints and environmental impact limits. The impact limits defined the extent of project impacts for the NEPA analysis.

WSDOT developed design for the SR 167 and SR 509 Completion Projects in accordance with WSDOT's [Practical Solutions](#) approach. WSDOT implements **practical design** approach, focusing on providing maximum benefit to the transportation system, promoting freedom to innovate and developing tailored solutions based on the specific project purpose and need. For the Gateway Program, practical design involved cooperation with 18 affected jurisdictions in a regional model of cooperation, which allowed WSDOT and stakeholders to evaluate previous project plans and confirm that the design met current demands and

²⁷ [RCW, § 47.85.020](#)

²⁸ [RCW, § 47.85.005](#)

²⁹ [RCW, § 47.85.020](#)

needs. WSDOT engaged stakeholders in both the SR 167 and SR 509 corridors to review project needs, develop and prioritize solutions, and agree on a preferred option. This innovative, performance-based approach to making project decisions with affected stakeholders will continue to inform Gateway Program decisions for the greatest return on investment during project design. The [Practical Solutions](#) process also resulted in the execution of a [Local Funding and Phasing MOU](#) that specifies potential grant funding requests, local matching funds, and local funding requirements.

The Gateway Program has undertaken a **data-driven safety analysis** (DDSA) as part of its interchange justification report update (IJR) and design analysis to reduce crashes. Through these processes, optimal designs have been developed, considering both safety and cost.

The Gateway Program is also implementing **innovative intersection and interchange geometrics** to improve operations and safety. The SR 167 Completion Project will include a **diverging diamond interchange** (DDI) at the SR 167 / I-5 interchange, which will reduce conflict points, decrease wait times at signals, increase traffic flow, and move more people in higher-populated areas. Each intersection associated with the proposed construction had an **intersection control evaluation** (ICE) conducted using DDSA procedures. Where the evaluation determined appropriate, roundabouts were selected due to their significant safety performance and delay reduction advantages. The Program will include six new roundabouts – four on SR 509 and two on SR 167 – which equates to roundabouts at more than half of the new intersections.

Finally, the Gateway Program is implementing innovative [Accelerated Bridge Construction](#) (ABC) and **Prefabricated Bridge Elements and Systems** (PBES) practices to make optimal use of funding and minimize impacts to the public during construction. ABC and PBES will be used in all SR 167 and SR 509 Completion Project structures in the form of pre-cast bridge elements. For the SR 509 Completion Project, PBES will take the form of three-sided buried structures for twin tunnel structures under I-5 for Veterans Dr. PBES will provide shorter construction durations for the buried structures, significantly reducing impacts to the traveling public.

5.3.3 Innovation Area #3: Innovative Financing

The **Puget Sound Gateway Program** utilizes both innovative financing and benefits from a recent statewide transportation revenue package. As noted in Section 4, the Legislature has authorized tolling on both the SR 509 and SR 167 new highway segments, and further provided bond authorization. This will allow tolls — as direct project user fees — to finance \$251 M of the Gateway Program cost. In addition to paying debt service on the \$251 M of capital funding, tolls will also pay for the corridor's routine annual O&M costs and periodic R&R expenses indefinitely. As such, tolling sustainably manages the new capacity to block congestion and covers lifecycle costs. The utility of toll revenues to fund the Gateway Program was established through a series of toll feasibility studies WSDOT completed for both corridors, including the 2013 [Puget Sound Gateway Project Funding and Phasing Study](#) and the 2018 Level II traffic and revenue study.³⁰ These studies progressively validate the capacity for tolls to contribute \$251 M in capital funding, pay for O&M and R&R costs over time, and help sustain efficient traffic operations into the future.

The majority of funds to develop and construct the Gateway Program consist of state transportation revenue from the CWTFP. The CWTFP mandates that local stakeholders contribute \$130 M, of which \$20 M is counted as part of the \$98.4 M INFRA request. Tying the \$1.566 B state contribution to the local stakeholder contributions, including \$60 M from the Ports of Seattle and Tacoma, is an innovation for the State of Washington, and has been memorialized in a [MOU](#) that engages the two ports, King and Pierce Counties, and eight local cities.

³⁰ <https://www.wsdot.wa.gov/Projects/Gateway/FundingPhasingStudy.htm>.

Finally, it should be noted that a legislative proviso provides for the competitive sale of surplus land acquired in the 1970s prior to revisions to the projects' alignments, the proceeds of which go back into the Gateway construction account rather than into the State's Transportation Fund.

5.4 Performance and Accountability

5.4.1 Plan to Address Full Life-Cycle Costs

The BCA performed for the *Puget Sound Gateway Program* in connection with this INFRA application estimates the full life-cycle costs of the Gateway Program (capital, O&M and R&R) to be \$1.32 B in present value discounted 2018 dollars from FY 2016 through construction plus over a 20-year post-construction evaluation period ending in FY 2048, and \$1.34 B over a 30-year post-construction period ending in FY 2058.

With acceleration of Gateway Program afforded by an INFRA grant, tolling on SR 509 would begin in FY 2026 with completion of the first stage, and continue as Stage 2 construction is completed, with full toll operations in place by mid-FY 2028. Tolling of the first stage of SR 167 follows six months later in mid FY 2026, with Stage 2 tolling beginning mid-FY 2028. All construction is projected to be completed by the end of FY 2028, with **FY 2029 as the first post-completion, full year of toll operations for both corridors**. Potential gross toll revenues in FY 2029 are forecasted to be \$55.9 M per year, with \$25.8 M from SR 509 and \$30.0 M from SR 167.³¹

WSDOT has prepared for future operations and maintenance of the Gateway Program's O&M costs — as well as for the costs of periodic R&R of capital — with an asset management plan that relies on dedicated toll revenue rather than federal funding or state gas taxes. Per toll authorization passed by the 2019 Legislature, toll revenues would not only pay debt service on the toll bonds but will also cover all routine facility and toll collection O&M costs as well as the periodic roadway and toll collection R&R costs. State statutes require that tolls generated by the Gateway Program “must be used only to construct, improve, preserve, maintain, manage, or operate... [the program] in which the revenue is collected.”³² Through FY 2048 (20 years of post-completion operations), roadway and toll collection O&M and R&R costs to be paid by tolls are projected to total over \$900 M in inflated YOY dollars.

Washington's Federal-Aid Highway Program is primarily dedicated to the preservation of transportation assets. WSDOT's use of federal-aid funding is consistent with the preservation and performance expectations set forth in MAP-21. Under the FAST Act, Washington is projected to receive on average \$718 M per year.³³ The Federal-Aid Highway Program funds approximately 25% of the state's Highway Construction Program. The CWTFP passed by the Legislature in 2015 provided dedicated state, local and toll funding to the Gateway Program. The gap closure funding by this INFRA grant seeks 5% federal aid for the Gateway Program, for a total federal share of only 6% of future eligible costs.

5.4.2 Accountability Measures

WSDOT proposes to apply specific, measurable outcomes upon which some or all INFRA grant funds would be conditioned to advance INFRA program goals. Table 7 provides the details regarding two specific sets of performance measures — the first meeting specific construction start and completion dates and the second achieving specific indicators of project success that will be evident within 12 months of project completion.

WSDOT acknowledges that failure to meet the specified construction deadlines or produce the specific project outcomes in the time allotted will subject the project to forfeiture or return of up to 10% of the awarded funds, or \$9.84 M if the full grant request is awarded.

³¹ Based on Stantec's 2018 Level II T&R for WSDOT, with adjustments to ramp-up factors to align with the proposed program acceleration.

³² [Engrossed Senate Substitute Bill \(ESSB\) 5825 as codified in RCW 47.56.895 and RCW 47.56.820](#)

³³ <https://www.fhwa.dot.gov/fastact/estfy20162020apports.pdf>

TABLE 7. PERFORMANCE AND ACCOUNTABILITY FRAMEWORK

Proposed Performance and Accountability Metrics for INFRA Grant Availability		
Condition	INFRA Program Goals Supported	
(1) Meeting specific construction start and completion dates		
<i>Triggering Event – BEGIN AND END OF CONSTRUCTION</i>	<i>Target Deadline</i>	
• Issue NTP for SR 509 Stage 1 D-B contract	Q2 2021	
• Issue NTP for SR 167 Stage 1 D-B contract	Q1 2022	
• Substantial Completion of SR 509 Stage 2 D-B contract	Q3 2028	
• Substantial Completion of SR 167 Stage 2 D-B contract	Q3 2028	
(2) Achieving a specific indicator of project success within 12 months of project completion		
<i>Triggering Event – FREIGHT SPEED AND RELIABILITY</i>	<i>Target Deadline</i>	
• Achieve 45+ mph 90% of the time on SR 509 Stage 1	Q3 2026	
• Achieve 45+ mph 90% of the time on SR 167 Stage 1	Q1 2027	
• Achieve 45+ mph 90% of the time on SR 509 Stage 1 and 2 (full corridor)	Q1 2029	
• Achieve 45+ mph 90% of the time on SR 167 Stage 1 and 2 (full corridor)	Q1 2029	

- **Reduced project delivery delays:** Receipt of INFRA funds closes the funding gap and facilitates the Legislature’s direction to accelerate the Program acceleration by three years to meet milestone targets.
- **Freight Movement and Economic Vitality:** Staged construction provides earlier mobility benefits for goods and people, promoting jobs and a stronger economy via connections to I-5 and I-90, the major freight corridors linking rural agricultural communities to domestic and international markets.
- **System Reliability:** Variable tolling of the new SR 509 and SR 167 roadways by time of day helps to manage the attraction of trips from other facilities, thereby maintaining reliable travel times and minimizing congestion.
- **Environmental Sustainability:** Managing traffic demand using tolling allows full implementation of Practical Solutions, right sizing the project footprint to sustainably manage capacity into the future.

Note: Target deadline dates shown reflect calendar year quarters.

6 Project Readiness

Planning, design, environmental review, and significant ROW acquisition have been completed, and an early D-B contract is beginning construction as of February 2020, which ensures the Gateway Program is ready to obligate INFRA funds well before the September 30, 2023 deadline.

6.1 Technical Feasibility

6.1.1 Engineering Activities

Recognizing that both the SR 167 and SR 509 Completion Projects have been planned since 1991 and had EIS documents completed in 2003 and 2006 respectively, there is a strong history that forms the backbone of engineering and design. As described in Section 5.3.2, WSDOT has been using a [Practical Solutions](#) performance-based approach to transportation decision-making on the [Puget Sound Gateway Program](#). Practical Design efforts in 2016 refined the basis of design for both projects, including: project essential needs identification; context understanding; development of performance metrics and targets; and alternatives development, rating and screening. Practical Design engaged stakeholders early to effectively refine the scope to meet the essential and contextual performance needs within budget constraints

In 2019 WSDOT vetted the preliminary designs with an independent construction contractor team to review constructability, quantities, unit prices, and identify potential risks and mitigation opportunities. This effort

was successfully used to validate the engineers' estimates for the D-B contract and came within 5% of the CEVP® results (described in Section 6.1.2).

6.1.2 Basis for the Cost Estimate

The cost estimate provided in this INFRA grant application is the product of WSDOT's [Cost Estimate Validation Process \(CEVP®\)](#) conducted to validate program costs, schedule, and risks.³⁴ The process involved workshops that provided the project team the means to evaluate the quality and completeness of the current cost estimate and risk register and increase confidence in the final results for the cost and schedule, as well as identifying areas of uncertainty that need to be monitored. The CEVP® results provide the project team with actionable information on risk events and allows them to manage the risks on an ongoing basis to better control project cost and schedule. The Risk Register is reviewed and updated monthly at both the project and program level to ensure that risks are managed and mitigated and opportunities for cost savings are exploited. In 2019 WSDOT reconfirmed the cost indices used in the June 2018 update to the Gateway Program capital cost estimate which captured the effects of revised inflation indices and adjust the expenditure schedule to match the availability of funding.

6.1.3 Detailed Statement of Work

The SR 167 Completion Project will construct two miles of new highway connecting the Port of Tacoma with I-5 in Fife, as well as the last four miles of the SR 167 highway between Puyallup and Fife (See Figure 4). The new 4-lane limited access expressway segments will have interchanges at SR 161, Valley Ave, I-5, 54th Ave, and SR 509 at the Port of Tacoma. It will consist of elevated roadways constructed on embankment, requiring approximately 8 million tons of borrow material, and 23 bridges to cross over multiple local streets, the Union Pacific Railroad Tacoma to Seattle line, Wapato Creek, and I-5.

The SR 167 project has been divided into two stages:

- *Stage 1* includes the two-mile connection between the Port of Tacoma and I-5, including the interchange with I-5; and
- *Stage 2* includes the four-mile connection (SR 167) from SR 161 to the new I-5 interchange.

Any INFRA funds received as a result of this application will be applied to Stage 1 construction which is anticipated to be awarded for construction by Q1 2022 for SR 167.

The SR 509 Completion Project will construct the last 2.5 miles of SR 509 through the City of SeaTac, connecting into I-5 (see Figure 3). The project will also construct 4 miles of improvements on I-5, adding a auxiliary lane northbound from SR 516 to the I-5/SR 509 interchange, a southbound collector distributor road from the I-5/SR 509 interchange to SR 516, and a southbound auxiliary lane from SR 516 to S 272nd St interchange. The new 4-lane limited access expressway will add interchanges at 24th Ave S and I-5, and reconstructed interchanges at S 188th St and SR 516 on I-5. The project will construct 11 bridges over local road, wetland and stream, and highways. The SR 509 roadway profile varies from cut to fill, resulting in approximately two million tons of surplus material.

The SR 509 Completion Project has also been divided into two stages:

- *Stage 1* includes SR 509 improvements related to the Sound Transit FWLE project and the extension of SR 509 from I-5 to 24th Ave S, including the interchange with I-5; and
- *Stage 2* includes the extension of SR 509 to S 188th St.

Any INFRA funds received as a result of this application will be applied to Stage 1 construction, the D-B contracts for which are anticipated to be awarded by Q2 2021 for SR 509.

³⁴ See <https://www.wsdot.wa.gov/construction-planning/project-management/risk-assessment/home>.

6.2 Project Schedule

Table 8 summarizes key project schedule milestones. All necessary activities will be completed to allow grant funds to be obligated in advance of the September 30, 2023 statutory deadline. Environmental review and re-evaluation have been completed. Approximately 90% of the SR 167 Completion Project right-of-way (ROW) and 70% of the SR 509 Completion Project ROW has been acquired.

INFRA grant obligation has been incorporated into the schedule, and is anticipated to occur in Q3 2020, providing ample time to ensure that any unexpected delays will not put the funds at risk of expiring before they are obligated. The SR 509 Completion Project can begin construction quickly upon receipt of an INFRA grant, and grant funds will be spent expeditiously once construction starts. In addition, all ROW acquisition will be completed in a timely manner in accordance with 49 C.F.R. Part 24.

TABLE 8. PUGET SOUND GATEWAY PROGRAM MILESTONE SCHEDULE (CY)

Key Project Milestone	SR 509 Anticipated Completion	SR 167 Anticipated Completion
NEPA Re-evaluation	Completed Q1 2018	Completed Q4 2018
Interchange Justification Report	Completed Q3 2019	Completed Q3 2019
Design Approval	Q1 2020	Q3 2020
Bid-Ready Design	Q1 2020	Q3 2020
ROW Acquisition	Q3 2020	Q1 2021
INFRA Grant Obligation	Q3 2020	
D-B RFQ Stage 1	Completed Q3 2019	Q4 2020
D-B RFP Ad Stage 1	Q3 2020	Q1 2021
Issue NTP for Stage 1 D-B Construction	Q2 2021	Q1 2022
Stage 1 Tolling Begins	Q2 2025	Q1 2026
Stage 1 End of Construction	Q1 2026	Q3 2026
D-B RFQ Stage 2	Q1 2023	Q4 2022
D-B RFP Ad Stage 2	Q2 2023	Q2 2023
Issue NTP for Stage 2 D-B Construction	Q1 2024	Q4 2023
Stage 2 Tolling Begins	Q1 2028	Q1 2028
Stage 2 End of Construction	Q3 2028	Q3 2028

6.3 Required Approvals

6.3.1 Environmental Permits and Reviews

The Washington Department of Ecology (Ecology), the Washington Department of Fish and Wildlife (WDFW), and U.S. Army Corps of Engineers (USACE) already approved permits for certain advanced wetland mitigation sites. However, new permits will be needed prior to construction of the SR 509 and SR 167 Completion Projects. The anticipated approvals needed from federal, state and local agencies include:

1. Section 404 Clean Water Act Permit from USACE;
2. Hydraulic Project Approval from the WDFW;
3. Section 401 Water Quality Certification and Coastal Zone Management (CZM) Consistency Certification from Ecology, U.S. Environmental Protection Agency (EPA) and Puyallup Tribe of Indians;
4. Section 402 NPDES Construction Stormwater General Permit from Ecology; and
5. Various permits/exemptions or demonstrated compliance with Critical Area Ordinances (CAO) for critical areas, noise variances (if nighttime construction noise will occur), grading/clearing permits, and shoreline substantial development and conditional use/variance permits from local agencies.

Environmental Studies

The Federal Highway Administration (FHWA) approved the SR 167 Completion Project's Tier I EIS with a Record of Decision (ROD) in 1999 and [Tier II EIS](#) with a [ROD](#) in 2007. FHWA approved the SR 509 EIS and

issued a [ROD](#) in 2003 for the SR 509 Completion Project and the South Access to Sea-Tac Airport.³⁵ In January 2018, FHWA and WSDOT completed a [NEPA re-evaluation for the SR 509 Completion Project](#). In December 2018, FHWA and WSDOT completed a [NEPA re-evaluation for the SR 167 Completion Project](#). The re-evaluations determined no new significant impacts compared to those previously documented.

Discussions with USDOT Modal Administrations

WSDOT holds monthly meetings and ongoing coordination with FHWA’s Washington Division Office. FHWA also participates in the Executive and Steering Committee for the SR 509 and SR 167 Completion Projects.

Public Engagement

WSDOT has worked closely with stakeholders and communities along both project alignments since 1991. Public involvement is comprised of workshops, open houses (on line and in person), public meetings, and hearings,³⁶ as well as government-to-government consultation with the Puyallup Tribe of Indians to ensure Tribe concerns are considered and incorporated where feasible.³⁷ WSDOT has also coordinated with environmental organizations (e.g., [Citizens for a Healthy Bay](#), [EarthCorps](#), and [Tahoma Audubon Society](#)) on project development and design, along with property owners and regulatory authorities regarding certain properties in the project corridor that affect project design.

FIGURE 11. ENGAGING THE COMMUNITY AT AN OPEN HOUSE



Significant stakeholder engagement was required during the year-long effort to down-size the program to its current scope that occurred through a series of Practical Design workshops. Although not required under NEPA, WSDOT and FHWA chose to provide 30-days for interested agencies/tribes and the public to review and provide comments on the Environmental Re-Evaluations for both projects. The SR 509 re-evaluation online open house between January 24 and February 22, 2018 had a total of 3,663 unique users that visited the site and 43,929 unique page views.³⁸ The SR 167 re-evaluation online open house occurred between January 14 and February 14, 2019 had a total of 881 unique users that visited the site and 128 who accessed the comments page.³⁹ Public engagement meeting dates and materials are available at the SR 509 and SR 167 Completion Project websites.

6.3.2 State and Local Approvals

During the EIS process, multiple state and local agencies provided approvals for the projects. WSDOT participated in an Interagency Working Agreement to Integrate Special Aquatic Resources Permit Requirements into the federal and state environmental review (NEPA/SEPA) processes early in the project programming and project development stages. The signatories included FHWA, National Marine Fisheries Service (NMFS), USACE, EPA, U.S. Fish and Wildlife Services (USFWS), Ecology, WDFW, and WSDOT. The signatory agencies participated in the development of the project through the completion of the ROD.

³⁵ [Record of Decision for State Route 509: Corridor Completion/I-5/South Access Road Project, Southwest King County, Washington](#), Federal Highway Administration, March 20, 2003, p.2.

³⁶ Ibid.

³⁷ Ibid.

³⁸ WSDOT, [SR 509 NEPA Re-Evaluation Public Comment Summary](#), March 2018, p. 2.

³⁹ WSDOT, [SR 167 NEPA Re-Evaluation Online Open House Summary](#), February, 2019, p. 5.

6.3.3 Federal Transportation Requirements Affecting State and Local Planning

Both stages of the SR 167 and SR 509 Completion Projects are included in the approved [2020-2023 Statewide Transportation Improvement Program](#) (STIP ID WDNW-1124, WDNW-2016, WDO-410, WDO-472, and WDO-449), a four-year, prioritized program of federally-funded transportation projects, as well as regionally significant state and local transportation projects.⁴⁰ They are also included in the PSRC’s [2018 Regional Transportation Plan](#) (Project ID 1659, 1722, 1613, 4429)⁴¹ and [2019-2022 Region Transportation Improvement Plan](#)⁴² (Project Numbers WDNW-1124, WDNW-2016, WDO-410, WDO-472, and WDO-449).

Both the SR 167 and SR 509 Completion Projects have been designated as Critical Urban Freight Corridors in Washington State, part of the National Highway Freight Network (NHFN). Both projects were also identified in the [2014 Washington State Freight Mobility Plan](#) as unfunded freight investments for highways.⁴³ The Program is also identified in the [2017 Washington State Freight System Plan](#) as an example of “a major investment by WSDOT and other partners to provide additional capacity and reliability for the movement of freight in and out of the waterfront industrial areas in both Seattle and Tacoma.”⁴⁴

6.4 Assessment of Project Risks and Mitigation Strategies

Risks to project implementation and completion have been identified and analyzed through the CEVP® review. Table 9 presents the top three risks and mitigation strategies if they occur. A risk management strategy, risk management plan, and a risk owner have been developed for all identified risks. The Risk Register is reviewed and updated monthly at both the project and program level to ensure that risks are managed and mitigated and opportunities for cost savings are exploited.

TABLE 9. RISKS AND MITIGATION STRATEGIES

RISK	DESCRIPTION	COST RISK	MITIGATION STRATEGY
Additional Fish Passage Improvements	Identification of new fish barriers based on design development changes and new stream identification from current field work.	\$19.3 M	Market conditions are difficult to predict even a few years into the future, so a provision to accept this risk is included in the cost estimate.
Additional Local Street / Intersection Improvements	Local municipalities could insist on additional mitigation for operational traffic impacts.	\$15.0 M	WSDOT is working closely with all impacted local jurisdictions to understand and anticipate local operational mitigation requirements.
Additional ROW settlement costs	Additional settlement costs may be required due to changes in property use, local development, full vs. partial acquisitions, and/or other factors.	\$8.3 M	Advance the ROW acquisition, get all of ROW purchased by end of 2021 to mitigate cost increases.

⁴⁰ WSDOT, [Full List of 2020 to 2023 STIP Projects](#), pp. 615-616, 681-683.

⁴¹ Puget Sound Regional Council, [2018 Regional Transportation Plan: Appendix G – Regional Capacity Projects List](#).

⁴² Puget Sound Regional Council, [Central Puget Sound – Regional Transportation Improvement Program, as of Amendment 20-00, Approved Jan. 10, 2020](#), pp. A-439, A-475, A-538, A-555, A-570.

⁴³ WSDOT, [Washington State Freight Mobility Plan](#), Project List, pp. 21 and 24.

⁴⁴ WSDOT, [Washington State Freight System Plan](#), p. 51.

7 Large Project Requirements

Because the *Puget Sound Gateway Program* is in a single state and greater than \$100 M, it is a large project for purposes of the INFRA grant program and meets statutory requirements as shown in Table 10.

TABLE 10. LARGE PROJECT REQUIREMENTS MATRIX

QUESTION	RESPONSE														
1. Does the project generate national or regional economic, mobility, safety benefits?	Yes. The economic, mobility, and safety benefits of the Program and the scale of their impact in national or regional terms are covered in Section 5.1.														
2. Is the project cost effective?	Yes. The results of the Benefit Cost Analysis (BCA), as well as the analyses of independent project components, is described in Section 5.1.1 of this Project Narrative and the BCA Report (Appendix A - Attachment 2).														
3. Does the project contribute to one or more of the Goals listed under 23 USC 150?	Yes. The Project contributes to the following national goals: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">1) Safety</td> <td rowspan="5">See Section 5.1 of this Project Narrative and the BCA Report (Appendix A - Attachment 2).</td> </tr> <tr> <td>2) Infrastructure condition</td> </tr> <tr> <td>3) Congestion reduction</td> </tr> <tr> <td>4) System reliability</td> </tr> <tr> <td>5) Freight movement and economic vitality</td> </tr> <tr> <td>6) Environmental sustainability</td> <td rowspan="2">See Sections 5.3.2 and 6.2 of this Project Narrative.</td> </tr> <tr> <td>7) Reduced project delivery delays</td> </tr> </table>	1) Safety	See Section 5.1 of this Project Narrative and the BCA Report (Appendix A - Attachment 2).	2) Infrastructure condition	3) Congestion reduction	4) System reliability	5) Freight movement and economic vitality	6) Environmental sustainability	See Sections 5.3.2 and 6.2 of this Project Narrative.	7) Reduced project delivery delays					
1) Safety	See Section 5.1 of this Project Narrative and the BCA Report (Appendix A - Attachment 2).														
2) Infrastructure condition															
3) Congestion reduction															
4) System reliability															
5) Freight movement and economic vitality															
6) Environmental sustainability	See Sections 5.3.2 and 6.2 of this Project Narrative.														
7) Reduced project delivery delays															
4. Is the project based on the results of preliminary engineering?	Yes. The following activities have been completed as of the date of application submission: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">✓ Environmental Assessments</td> <td style="width: 50%;">✓ Utility Engineering</td> </tr> <tr> <td>✓ Metes and Bounds Surveys</td> <td>✓ Topographic Surveys</td> </tr> <tr> <td>✓ Geotechnical Investigations</td> <td>✓ Hydrologic Analysis</td> </tr> <tr> <td>✓ Hazardous Materials Assessments</td> <td>✓ Traffic Studies</td> </tr> <tr> <td>✓ General estimates of material types and quantities</td> <td>✓ Financial Plans</td> </tr> <tr> <td>✓ SR 509 Stage 1 is shovel-ready now</td> <td>✓ Revenue Estimates</td> </tr> <tr> <td>✓ SR 167 Stage 1 early work construction is underway</td> <td></td> </tr> </table>	✓ Environmental Assessments	✓ Utility Engineering	✓ Metes and Bounds Surveys	✓ Topographic Surveys	✓ Geotechnical Investigations	✓ Hydrologic Analysis	✓ Hazardous Materials Assessments	✓ Traffic Studies	✓ General estimates of material types and quantities	✓ Financial Plans	✓ SR 509 Stage 1 is shovel-ready now	✓ Revenue Estimates	✓ SR 167 Stage 1 early work construction is underway	
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✓ General estimates of material types and quantities	✓ Financial Plans														
✓ SR 509 Stage 1 is shovel-ready now	✓ Revenue Estimates														
✓ SR 167 Stage 1 early work construction is underway															
5a. With respect to non-federal financial commitments, does the project have one or more stable and dependable funding or financing sources to construct, maintain, and operate?	Yes. Funding sources and amounts that will account for all project costs for the Program and each independent project are described in Sections 4, 5.2, and 5.4 of this Project Narrative.														
5b. Are contingency amounts available to cover unanticipated cost increases?	Yes. Based on CEVP® risk analysis of opportunities and threats, the Program's cost estimate includes implicit contingency calculations, which amounts to 3% of the D-B contract values for a total of \$25.4 M (\$16.4 M for SR 509 and \$19 M for SR 167).														
6. Is it the case that the project cannot be easily and efficiently completed without other federal funding or financial assistance available to the project sponsor?	Yes. The Legislature authorized the advancement of \$128.9 M in CWTFP state funds, contingent upon WSDOT receiving a \$98.4 M INFRA grant. See Sections 4, 5.2, and 5.3.2 of this Project Narrative. Without a federal INFRA Grant the Program cannot be completed. Without opening lanes to traffic on both Projects, toll revenue cannot repay borrowed funds.														
7. Is the project reasonably expected to begin construction not later than 18 months after the date of obligation of funds for the project?	Yes. The Program and each project's budget and schedule assume INFRA grant obligation in Q3 2020, as shown in Sections 4.3 and 6.2 of this Project Narrative. SR 509 Stage 1 is shovel-ready now and SR 167 Stage 1 will be shovel-ready in early 2021.														